Trust and attitude in consumer food choices under risk

Vertrauen und Einstellungen als Determinanten von Kaufentscheidungen unter Risiko

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Abstract

In this paper, attitude and trust are studied in the context of a food scare (dioxin) with the aim of identifying the components of attitude and trust that significantly affect how purchases are determined. A revised version of the model by MAYER et al. (1995) was tested for two types of food: salmon and chicken. The final model for salmon shows that trust is significantly determined by perceived competence, perceived shared values, truthfulness of information and the experiential attitude (the feeling that consuming salmon is positive), but trust has no impact on behavioural intentions. Consumer preferences seem to be determined by a positive experiential attitude and the perception that breeders, sellers and institutions have values similar to those of the consumer. The model for chicken gave very similar results.

Keywords

trust; trust antecedents; attitude; food scare; purchase intention

Zusammenfassung

Der vorliegende Beitrag untersucht die Konstrukte Einstellung und Vertrauen im Kontext eines Lebensmittelzwischenfalls (Dioxin), um diejenigen Einstellungs- und Vertrauenskomponenten zu identifizieren, die die Kaufentscheidung signifikant beeinflussen. Eine erweiterte Version des Modells von MAYER et al. (1995) wurde für Lachs und Hähnchenfleisch getestet. Für Lachs zeigt das Model, dass Vertrauen durch die wahrgenommene Kompetenz, die Wahrnehmung ähnlicher Wertvorstellungen, die wahrgenommene Wahrhaftigkeit von Informationen, sowie die erfahrungsbezogenen Einstellungsdimensionen (positive Beurteilung des Lachskonsums) erklärt werden kann. Aber Vertrauen hat keinen nachweisbaren Einfluss auf die erfassten Kaufabsichten. Diese sind vielmehr direkt beeinflusst durch positive erfahrungsbezogene Einstellungsdimensionen und die Wahrnehmung ähnlicher Werte. Die Daten zum Entscheidungsverhalten bei Hähnchenfleisch lieferten sehr ähnliche Resultate.

Schlüsselwörter

Vertrauen; Vertrauensdimensionen; Einstellung; Lebensmittelzwischenfall; Kaufabsichten

1. Introduction

Recently the Member States of the European Union have been hit by a series of food scares leading to significant economic and social repercussions. In a food scare, citizens are informed that certain widely available food products carry health risks. Food is obviously an essential element to our existence and news that warn about severe health risks have a profound effect on the public. Among the more immediate consequences, consumers will try to avoid the danger that they have just become aware of, and so their preferences are modified and the consumption of certain items is drastically reduced in favour of other goods which are considered safer. For example, at the peak of the BSE crisis, per-capita consumption of beef in Great Britain fell by about 30%. Below, we will describe three factors which influence purchase intentions: perception of risk, attitude and trust.

1.1 Perception of risk

The significance and wide-ranging effects of these crises on purchase intention have stimulated ever-growing interest in the scientific community. In fact, in the past ten years, the number of studies on risk perception have increased significantly. An unusual element of public risk perception is the frequent mistrust of the opinion of experts in the field. The greatest fears of consumers have a medium to low risk according to the experts. These experts have a prioritised list of risks, which describe dangers which are unknown to the public so far. This discrepancy has given rise to the impression that the public do not have the proper resources to estimate accurately the level of risk associated with a hazard (FISCHHOFF et al., 1982; WYNNE, 1989; RENN, 1992). Further studies show that this uncomplimentary view of the average consumer is restrictive. The stubbornness with which the public maintain a misconception can be frustrating for an expert who has a thorough scientific knowledge of the matter. However, this stubbornness is based on factors which the export does not consider. The results of SPARKS and SHEPHERD's study (1994) in which twenty-five risks were evaluated and the data analysed by principal components analysis, revealed a three-component solution, namely "severity", "unknown" and "number of people exposed". The second component, "unknown", (capturing 32,5% of the total variance) is a peculiar characteristic of public risk perception in the light of partial and contradictory information. FIFE-SCHAW and ROWE (1996) take up SPARKS and SHEPHERD's study, and replicate in large part the previous results. Moreover, FIFE-SCHAW and ROWE interpret the "I don't know" answers as an indication of the lack of information about the corresponding hazard. The hazard that drew the largest number of "I don't know" answers, campylobacter bacteria, got about as high a score on "severity" as botulism, although the probability of a fatal outcome is much lower for campylobacter than for botulism. As a result, FIFE-SCHAW and ROWE once again deduce the importance of lack of information on the perception of risk: the less a hazard is known, the more it is feared.

1.2 Attitude

As well as the perception of risk, another psychological construct influences our preferences and decisions: attitude.

For AJZEN (2001), attitude is a concise evaluation of a psychological object, e.g. behaviour or a specific event. The object is evaluated in very broad terms, which are enclosed within two extremes, one positive, the other negative. The interviewees indicate on a graduated scale the direction and intensity of their attitude when faced with the object. The attitude brings together qualities such as good – bad, beneficial – harmful, pleasant – unpleasant (AJZEN and FISHBEIN, 2000; EAGLEY and CHAIKEN, 1993).

Attitude is a complex matter, which brings together many varying factors and elements. Many studies have been carried out to better understand its components and there is a widely-held consensus regarding the distinction between the cognitive attitude and the emotional attitude. The same psychological object may have more than one attitude associated with it, sometimes they may be in conflict, depending on the context in which the object is evaluated or, in other cases, as a result of the type of information received. The prevalence of certain information will give the attitude a mainly emotional character (e.g. giving blood frightens me) or a cognitive character (abortion is dangerous) (HUSKINSON and HADDOCK, 2004). Attitude, along with other definitions, was used in the theory of planned behaviour (AJZEN, 1991) to describe and predict the forming of intentions of individuals and their actions. In KAHNEMAN et al. (1999), attitude is used to explain how decisions are formed by juries who must establish punitive damages. The evaluation of attitude was applied even to the consumption of food: FREWER et al. (1997) describe the case of cheese production with new technologies (genetic modification of micro-organisms necessary for the production of cheese). The public may not be enthusiastic about a product that is seen to be "unnatural", but if the producer links positive information with the product, e.g. lower price, a positive attitude may be created which will make the product more attractive. Attitude has been used to predict how willing an individual is to follow a specific diet (TEPPER et al., 1997). PENNINGS et al., (2002) consider at the same time risk attitude and risk perception, creating two measures of these attributes and demonstrating their influence on whether or not to buy beef during the BSE scare in 2000.

1.3 Trust

Trust is present in personal relationships in different contexts and can manifest itself in very many ways. The study of trust is highly complex and it is extremely difficult to identify its essential features. This difficulty is also due to the confusion between the factors which bring about trust, trust itself and the consequences of trust (COOK and WALL 1980). To simplify these problems, a thorough definition is needed: according to MAYER et al. (1995), trust is "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control the other party".

A thorough study on trust was carried out by KRAMER (1999), who describes its development within large companies. As well as the relationships between colleagues, it is also possible to create a relationship of trust between people who have no direct contact with each other. Therefore, there are relationships of trust based on the images we have of these people, images based on information we receive
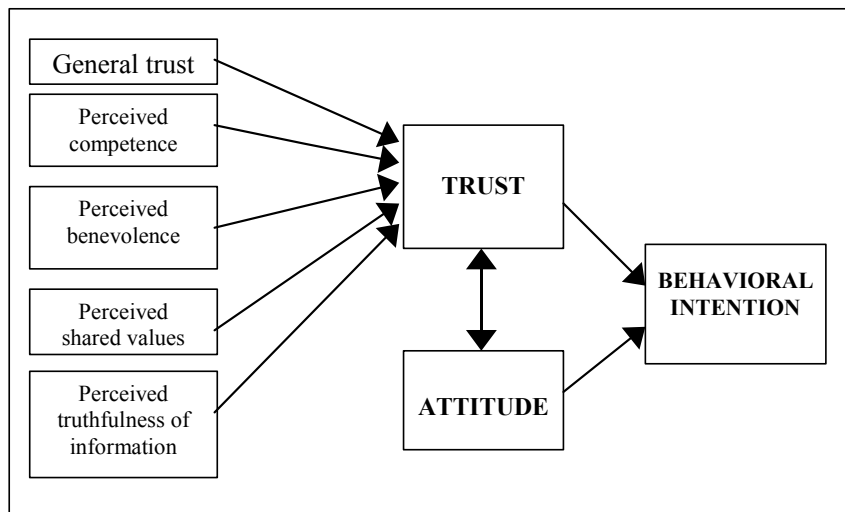
from various sources as well as the stereotypes we have from the images of the company. Trust is due, in the beginning to a sort of natural predisposition to trust others. Then, as time passes, the interaction between the two parties acquires even greater importance. Thus, the office workers will place more trust in the company if the company is able to make quick and effective decisions, even if they do not know the directors personally. According to KRAMER, trust brings consistent economic benefits: it reduces transaction costs, i.e. costs that ensure the efficient outcome of the transactions. Moreover, trust increases spontaneous sociability (FUKUYAMA 1995), i.e. the ability of a group of individuals to cooperate, e.g. in sharing a resource without the interference of an external authority. Still in the field of business, DIRKS (1999) studied the effect of interpersonal trust on the work performance of groups, while GREENBERG and WILLIAMS (1999) looked for a relationship between social trust (the ability of experts to use science for the benefit of the public) and trust in the community (public administration, local mass media and business activities working to improve the quality of life for others). There is a link between perception of risk and trust; in spite of the gap between values and perceptions between the public and experts, it is certain that the most highly regarded individuals (whether they belong to public or private organisations) play a fundamental role in the opinions of the greater public. According to SIEGRIST and CVETKOVICH (2000), people are able to evaluate a risk if they have sufficient information. If, on the other hand, information is insufficient, it is then necessary to trust in an expert, but this will happen only if the source of information is considered reliable. SIEGRIEST (2000) points out that trust may increase the probability that the public may accept new, potentially dangerous technology, such as the genetic manipulation of food.

1.4 Objective and modelling

The aim of the study is to compare the role of trust and attitude on the intention to buy a food product in the context of a food hazard. The initial model on which this research is based is shown in figure 1.

We chose salmon and chicken as objects of analysis because of their popularity and because they had previously been the centre of serious food scares. Attitudes toward these two food products were elicited using semantic differentiation on a scale of 18 items. The technique of semantic differentiation has already been used in the literature to gauge attitude (MAIO and OLSON, 1998; MÜLLER-PETERS et al., 1998).

With regard to trust, we identified three categories of important economic elements that might be involved in a food crisis: two market operators and a public organisation. We evaluated the importance of these elements as antecedents of trust. Measuring trust is the most difficult and complex part of the model. The point of departure was MAYER et al. (1995) model of trust. Their model describes step by step the development of a relationship of trust between two people who work together and are in a hierarchical relationship. In particular MAYER and colleagues concentrate on this aspect: what makes a person in a lower position of power, the subordinate (trustor), trust his superior (trustee)? This model can easily be adapted to describe the behaviour

Figure 1.   Starting model of food choice under risk

Source: adapted from MAYER et al., 1995

for food or environmental matters, e.g. SIEGRIST (2000), or studies which evaluate the importance of attitude, e.g. FREWER et al. (1997). However, to the best of our knowledge, we don't know of any studies that directly compare the role of trust and attitude in the intention to buy a food product in the context of a food scare. Our hypothesis is that trust and attitude are positively correlated (the more positive the attitude, the greater the trust) and influence purchasing intention.

2. The Study

2.1 Sample

104 subjects took part in the study, and were each paid €10.00. Participants were contacted at supermarkets or by publicly displayed notices. The average age of the participants was 34, ranging from 15 to 81. 55% of the subjects were male, 45% female. 62 (60%) participants were unmarried, 34 (33%) married, 2 (2%) separated or divorced, 5 (5%) widows or widowers and one person did not indicate belonging to any of these groups. In terms of level of education: 12% had completed middle school, 54% had completed high school, 3% had a Bachelor degree or equivalent and 30% had obtained a Master's or equivalent. The sample originally had 106 individuals, but two were excluded from the analysis because they were vegetarian.

2.2 Materials and procedure

The study was organised in different parts. Participants began by reading a general introduction which described the research as a general survey on the preferences of consumers and their choices. It should be emphasised that this questionnaire was completely anonymous and that any personal information was to be used exclusively for scientific purposes. The first question in the questionnaire had two different versions, "Imagine that your usual fishmonger [butcher] offers you a salmon filet [chicken] for free to celebrate the renewal of the store. What do you do?" and they were given two options: "You eat the salmon [chicken]" or "you do not eat the salmon [chicken]"[1]. Subsequently, the food scare is described and all participants received the same information on dioxin and the dangers it poses to health:

"DIOXIN: A REAL PROBLEM FOR HEALTH. A considerable threat to our health, disappointingly very seldom detected, is the risk posed by the consumption of food contaminated by dioxin. Dioxin, is extremely toxic and it is used especially as an additive in oils for motors and condensers. Getting rid of old machinery that used dioxin is difficult and costly, for this reason, in the absence of effective controls by the authorities, thoughtless individuals will

of consumers in their purchasing decisions because these decisions are based on dynamics of behaviour similar to those in a business environment. The employee has less contractual power than his superior, has less relevant information on which to base his decisions and in general has little chance of influencing decisions that are taken at a higher level. In the same way, the consumer has much less information regarding a product than, for example, manufacturers and the consumer has decidedly less contractual power. With these limitations, the consumer does not have the means to fully appreciate the data provided by the specialised manufacturers. Nonetheless, he can give a value to these data, have an opinion regarding the reliability of the manufacturers and thus assess the value of the information received.

Regarding this model of the formation of trust, certain elements were used which are described below. Trust is generated from a natural predisposition to be trusting towards others ("general trust" in the model) and by three antecedents: competence, benevolence and shared values. Competence is a group of skills and characteristics which allow a person to be influenced in a specific environment. Benevolence describes to what extent the trustee is willing to help the trustor for altruistic reasons. Shared values describe the perception of the trustor regarding the extent to which fundamental principles of ethics and behaviour are shared with the trustee. We introduced a new antecedent, perception of the truth of the information supplied by the trustee. We decided to carefully examine this aspect of trust as it allows us have a thorough knowledge of this special aspect of the relationship between trustor and trustee and also because this aspect distinguishes itself sufficiently from the other antecedents. For example, during a food scare, consumers often complain because the government or other official agencies have not told the truth immediately, even if this has been done for reasons of public order. Consumers do not doubt the competence, benevolence or values of the official agencies, but nevertheless, they feel that they have been denied information which would allow them to take the best decision according to their preferences.

In the literature, there are studies which describe the influence of trust in decisions to take on risks whether they be

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[1]   The data presented in this paper are part of a larger study on the effect of previous commitment to risky choice. This first manipulation was therefore intended to commit the participants to an action. These data will not be commented in this paper because they refer to the larger study.

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continue to dump old machinery in the environment. Once it has been abandoned in the environment, dioxin will make its way into the surrounding vegetation. The vegetation then becomes fodder for a large range of breeding animals. The major risk posed by dioxin is due to its tendency to accumulate in animal fat, in this way, lower initial concentrations in the fodder increase at every processing phase, ultimately reaching high levels of risk in the breeding animals. Researchers have demonstrated a large variety of effects on the human body. Among the organs most at risk are the liver, the reproductive and neurological apparatus and the immune system. The EPA (Environmental Protection Agency) has classified dioxin as a potential cancerous substance. [Source: Review Altroconsumo; N 152 September 2002] "

The description continues with the description of the "dioxin chicken" scandal in 1999 in Belgium. During this food scare, one of the most serious of the past few years, large quantities of chicken meat were seized and destroyed because they were heavily contaminated with dioxin. The participants were also told that the current risk connected to dioxin was considerably lower, even though food-safety authorities had recently found cases of chicken and salmon contaminated with dioxin in the Triveneto region (the region where the participants of the study lived). The aim of the description of the danger was to create alarm and fear regarding the consumption of contaminated chicken and salmon.

After having read this information, participants completed the questionnaire. The first question is about purchasing intention. "Imagine that the family dinner you organized is scheduled for next week. You need to think about what to buy for the dinner. You know that salmon [chicken] is especially enjoyed by your family. What do you do?" Possible options were: "You buy salmon [chicken] for the dinner." or "You do not buy salmon [chicken] for the dinner." This question will be referred to as BI.

Subsequently, participants were asked a series of questions related to trust and attitude.[2] One question examined General Trust (Q1), another behavioural trust (Q2), three questions examined trust in the producers and authorities in the food chain (Q3,Q4,Q5), three questions examined the perceived competence of the producers and authorities related to the food chain (Q6, Q7, Q8), three to perceived benevolence (Q9,Q10,Q11), three to shared values (Q12, Q13, Q14) and three to perceived truthfulness of information (Q15, Q16, Q17). The last series of questions were related to attitude (Q18). Using the classic semantic differential structure, we investigated attitude using a set of eighteen bipolar, seven-point scales ranging from −3 to +3. Subjects were asked to answer the following question: "Personally, do you think that chicken [salmon] consumption is a _____ behaviour?" on these 18 eighteen scales whose endpoints are shown in table 1 and table 2 below.

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[2] The questionnaire part on trust is provided in the appendix.

3. Results

The data analyses followed a series of steps. Firstly, we ran a factor analysis on the attitude scales, to extrapolate the importance of the underlying attitude. Secondly, we ran a structural-equations analysis to test the validity of the model. To do so, we summarized the variables related to the three main groups in the food chain (the breeders, the sellers and the authorities) in order to obtain a mean judgment for trust, competence, benevolence, sharing of values, and truthfulness of information. Thirdly, we used the factor scores from the factor analysis and the mean scores to run the structural equations model.

3.1 Factor analysis

Two factor analyses were performed on the attitude scales, one for chicken and one for salmon, to extrapolate the dimensions of attitude. The extraction algorithm used the Principal Components method and the matrix was rotated using Varimax method with Kaiser Normalization. The number of factors to be extracted was not predefined, therefore the factors extracted were those with an eigenvalue above 1. Rotation converged in 5 iterations for salmon and in 6 for chicken. The results of the factor analyses on the attitude scales are presented in table 1 and table 2.

Table 1. **Factor loadings of the attitude scales for salmon consumption**

	Component		
	1	2	3
	Experiential factor	Moral factor	Instrumental factor
Scales	(31% of variance)	(22% of variance)	(17% of variance)
Disagreeable – Agreeable	**.861**	.173	.081
Negative – Positive	**.758**	.158	.383
Bad – Good	**.757**	.161	.379
Unpleasant – Pleasant	**.722**	.147	.346
Harmful – Beneficial	**.711**	.357	.273
Risky – Safe	**.696**	.224	.243
Foolish – Wise	**.633**	.369	.444
Unreasonable – Reasonable	**.596**	.431	.426
Boring – Exciting	**.589**	.356	.057
Ugly – Nice	**.586**	.451	.163
Despicable – Admirable	.235	**.869**	.058
Ignoble – Noble	.094	**.864**	.079
Shameful – Laudable	.289	**.696**	.284
Wrong – Right	.364	**.692**	.276
Useless – Useful	.369	**.514**	.453
Inconvenient – Convenient	.147	.203	**.815**
Disadvantageous – Advantageous	.394	.005	**.790**
Inopportune – Opportune	.358	.427	**.678**

Source: authors' computations

The two analyses gave rather similar results in that they both resulted in three factors and the names of the factors were the same. Nevertheless, the order of the components based on the share of variance captured was reversed and four (foolish-wise; unreasonable-reasonable; boring-exciting; ugly-nice) out of 18 variables were assigned to different components in the chicken and salmon groups. These dif-

Table 2. Factor loadings of the attitude scales for chicken consumption

Scales	Components		
	1 Instrumental factor (25% of variance)	2 Moral factor (24% of variance)	3 Evaluative factor or experiential factor (21% of variance)
Disadvantageous – Advantageous	**,770**	,194	,282
Inopportune – Opportune	**,770**	,334	,236
Unreasonable – Reasonable	**,726**	,331	,327
Inconvenient – Convenient	**,707**	,376	,249
Foolish – Wise	**,678**	,321	,363
Ignoble – Noble	,184	**,849**	,147
Despicable – Admirable	,112	**,836**	,218
Wrong – Right	,396	**,768**	,249
Useless – Useful	,432	**,676**	,238
Shameful – Laudable	,586	**,591**	,233
Ugly – Nice	,322	**,550**	,297
Boring – Exciting	,298	**,544**	,329
Bad – Good	,196	,251	**,835**
Negative – Positive	,299	,294	**,813**
Unpleasant – Pleasant	,247	,369	**,684**
Harmful – Beneficial	,520	,170	**,678**
Risky – Safe	,560	,078	**,584**
Disagreeable – Agreeable	,374	,409	**,500**

Source: authors' computations

ferences were not levelled prior to moving to the structural-equation analysis, because they describe our sample's peculiar perception of the components of each single dimension underlying the attitude toward the two types of food.

The three factors closely resemble the traditional underlying attitude dimensions. The "experiential factor" denotes the belief that eating salmon (or chicken) is a pleasant, good and safe behaviour. This dimension captures the affective component of attitude. The "instrumental factor" represents the belief that eating salmon (or chicken) is right and opportune, which is a rational evaluation. Finally, the "moral factor" captures the idea that eating salmon (or chicken) is noble, right and admirable behaviour.

Factor scores were then used to compute the mean values that were then entered in the structural equation model. Using factor scores has the advantage of having no correlation between factors because they are orthogonal, given that we used a varimax rotation.

3.2 Structural-equations model

From a primary observation of the correlation matrix, we identified a variable, general trust, which was not significantly correlated with any of the others entered in the model. We therefore decided to eliminate this variable from the model. The reason this variable was not significant might be due to a difficulty in measurement (we used only one item, whereas, we might have needed more items measuring this component). We were interested in how the variable *intention to eat salmon* (INTES) (resp. *intention to eat chicken* (INTEC)) is modulated by:

- perceived-type variables: competence of the food chain agents (COMS), benevolence of the food chain agents (BENS), shared values with the food chain agents (SHAV), truthfulness of information provided by the food chain agents (TRTH),
- attitude-type variables[3]: attitude instrumental factor (ATTI), attitude experiential factor (ATTE), and
- the trust-type variable: trust in the food chain agents (TRUS).

The model consists of two hierarchically connected main components:

- the main factor component as a predictor multivariate variable, which is further divided into two distinct, hierarchically connected subcomponents (perceived and attitude-type variables: COMS, BENS, SHAV, ATTI and ATTE), and the trust variable (TRUS), and
- the intention component (INTES or INTEC) as the target dependent variable.[4]

Both analyses were conducted on a pairwise correlation matrix of the variables represented by the two models. Path analyses on the resulting correlation matrices was performed by using LISREL (JÖERESKOG and SÖRBOM, 1993). Following the recommendations of HU and BENTLER (1999), we evaluated the model fit using the *non-normed fit index* (NNFI), *root-mean-square error of approximation* (RMSEA), *comparative fit index* (CFI) along with the standard chi-square statistic.[5] Standard correlation analyses may just give an overview of the relationships among our variables. However, they do not provide a test of the structure of the relationships. Nor do they provide information regarding unique or incremental relationships above and beyond the variance explained by other variables in the structure. To test the complete structure of the relationships, including estimation of the unique variance explained by each hypotheti-

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[3] The moral factor was excluded from the model because the pattern of correlations showed it had no relationship with behavioural intentions.

[4] We also ran path-analyses by including the three types of agent (public authorities, breeders and sellers) separately in the path model. The results were congruent with those obtained by aggregating the values across the three types of agent. This finding suggests that the average representation characterises the behavioural pattern as codified separately within each agent of the food chain well.

[5] The NNFI and CFI offer a way to quantify the degree of fit along a continuum. They are incremental fit indices that measure the proportionate improvement in fit by comparing a target model with a more restricted nested baseline model. In contrast RMSEA is an absolute fit index that assesses how well an a priori model reproduces the sample data. HU and BENTLER (1999) recommended that values exceeding .90 for the NNFI, .06 for the RMSEA, and .08 for the CFI should be used as cut-offs, representing a good fit of the data to the model.

cal link, we evaluated the correlation matrices using structural-equation modelling for observed variables (path analysis). The first step was the model shown in figure 2, in which perceived-type variables and attitude-type variables were hypothesized to affect INTES to eat salmon independently. The chi-square test for this model was not significant (χ^2 (7, N = 103) = 12.37, p = .09), and the NNFI (= .96), RMSEA (= .089), and CFI (= .99) indicated a good fit.

Figure 2. Initial path model (salmon condition) with standardized regression weights* **
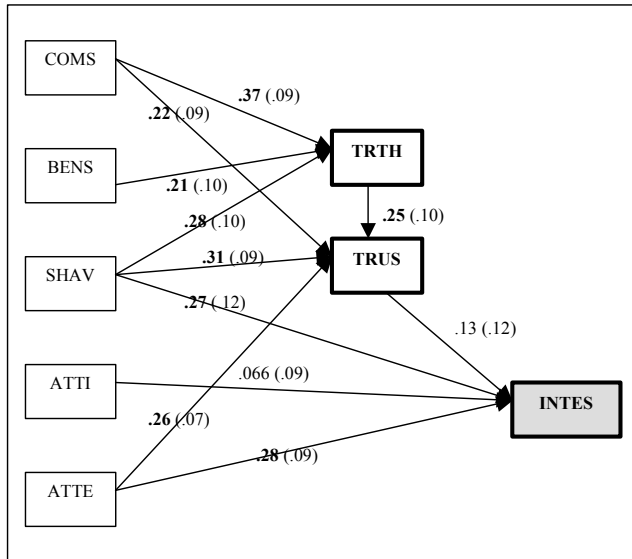
* χ^2 (7, N = 103) = 12.37, p = .09; NNFI = .96, RMSEA = .089, CFI = .99.

** Standardized regression coefficients in bold are significant at p < .05. Subscript values in parentheses are standard errors for the regression coefficient.

Source: authors' computations

We also tested a revised model by eliminating all non-significant paths from the model structure. The final result was a more parsimonious model (figure 3) which reads as follows: INTES is expected to be affected by SHAV (.37) and ATTE (.32). Although the chi-square test for the revised model was significant (χ^2 (6, N = 103) = 13.14, p < .05), the model demonstrated a good fit with the data (NNFI = .95, RMSEA = .11, CFI = .99), meeting Hu and Bentler's (1999) recommended cut-off for RMSEA, NNFI and CFI. The reconstructed correlation parameters showed a significant positive but mild correlation between TRTH and COMS (r=.37, p<.001) and between TRTH and SHAV (r=.28, p<.001). Moreover, TRUS was clearly correlated with SHAV (r=.31, p<.001). A final noteworthy result is that SHAV was clearly the best predictor, when compared with ATTE (r=.37, p<.001 Vs r=.32, p<.001).

Very similar results were also observed for the chicken condition (figure 4), although these relationships were even stronger than those observed for the salmon condition, presumably due to a higher perceived salience of this latter condition, which might have emphasized more the extent of all effects. Figure 5 depicts the final model obtained after removing all non-significant paths. The result is an increase in model fit in the revised model. The chi-square test was not significant (χ^2 (9, N = 103) = 10.81, p = .28), and the fit indices indicated a very good model fit (NNFI = .99,

**Figure 3. Final path model (salmon condition) with standardized regression weights* ****
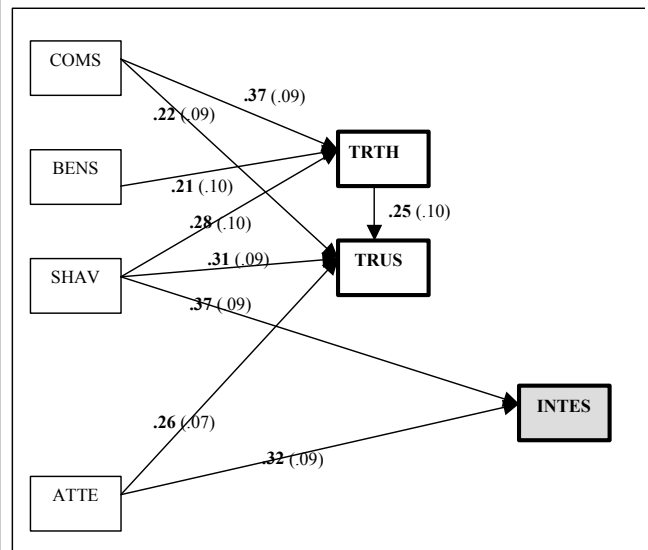
* χ^2 (6, N = 103) = 13.14, p < .05; NNFI = .95, RMSEA = .11, CFI = .99.

** Standardized regression coefficients in bold are significant at p < .05. Subscript values in parentheses are standard errors for the regression coefficient.

Source: authors' computations

**Figure 4. Initial path model (chicken condition) with standardized regression weights* ****
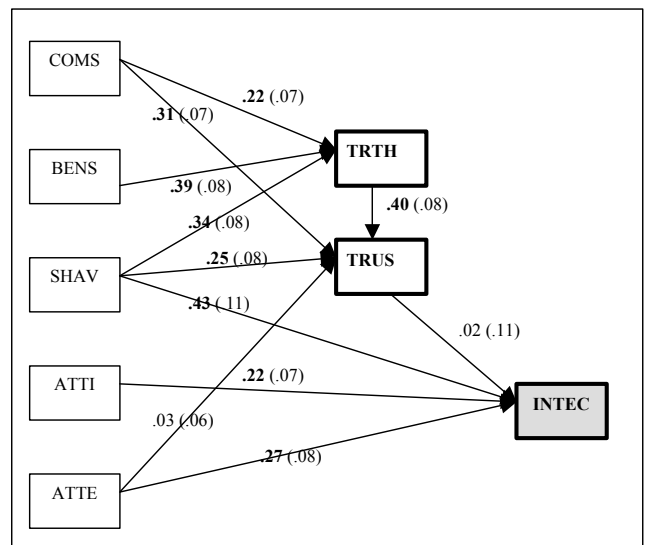
* χ^2 (7, N = 103) = 10.37, p = .16; NNFI = .98, RMSEA = .07, CFI = .99.

** Standardized regression coefficients in bold are significant at p < .05. Subscript values in parentheses are standard errors for the regression coefficient.

Source: authors' computations

RMSEA = .045, CFI = 1.0). Most notably, ATTE no longer influences TRUS, likewise TRUS no longer influences INTEC. Therefore, SHAV, ATTI and ATTE remained the only reliable predictors of INTEC, and among these, SHAV was clearly the best predictor, when compared with ATTE (r=.45, p<.001 Vs r=.22, p<.001) or ATTI (r=.45, p<.001 Vs r=.28, p<.001). This final result (figure 5) was consistent with what was observed in the salmon condition.

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Figure 5. **Final path model (chicken condition) with standardized regression weights* ****
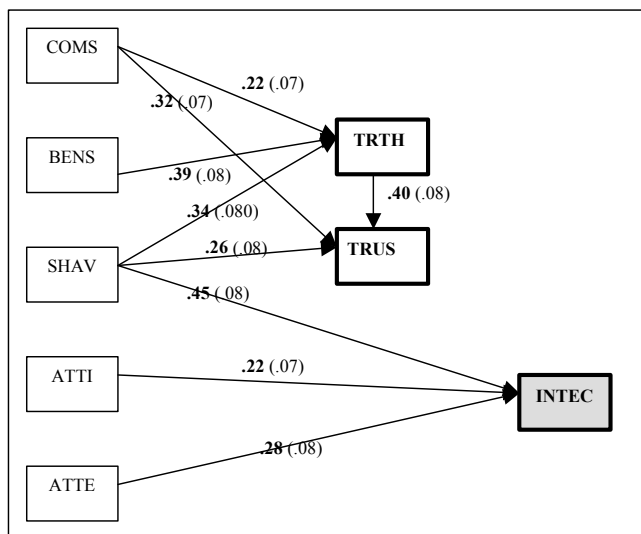
* χ^2 (9, N = 103) = 10.81, p = .28; NNFI = .99, RMSEA = .045, CFI = 1.00.

** Standardized regression coefficients in bold are significant at p < .05. Subscript values in parentheses are standard errors for the regression coefficient.

Source: authors' computations

The final model for salmon depicted in figure 3 shows that trust is significantly determined by perceived competence, perceived shared values and truthfulness of information, but not by benevolence. Hence, MAYER's model is only partially confirmed. However, competence, benevolence, and shared values are significant determinants of truthfulness of information which in turn determines trust. Truthfulness of information is a mediating factor of the antecedents of trust. Trust is also determined by a positive experiential attitude (feeling that salmon consumption is good behaviour). Interestingly, trust has no impact on behavioural intentions to eat salmon, whereas, consumer preference seems to be determined by a positive experiential attitude and the perception that breeders, sellers and institutions have values similar to those of the respondents. This result was somewhat surprising, because we had supposed that in a context of risk, trust should be a strong determinant of consumer choice, which does not seem to be the case here. Nevertheless, shared values have a strong direct impact with intentions as hypothesized in the SIEGRIST and EARLE model of cooperation (SIEGRIST et al., 2003).

With respect to the antecedents of trust the pattern which emerged from the data in the chicken condition is very similar (s. figure 5). The only difference from the salmon model is that eating chicken is also determined by the instrumental component of attitude. The belief that eating chicken is right and advantageous behaviour is important for consumer choice. This difference might be due to the fact that chicken is cheap and easy to find.

4. Discussion

This study investigated the determinants of trust and the importance of trust and attitude as determinants of consumer choice in a food scare context. A first relevant result

is that trust does not affect directly the decision to eat the potentially contaminated food. This result is rather surprising because, as we explained in the introduction, the need for trust should be amplified when people believe they are under risk. The choice whether to eat a potentially risky food seems rather independent from how much I trust the breeders, the sellers and institutions. The absence of a direct relationship between trust and behavioural intentions means that consumer choice decisions are based on other factors rather than trust. Nevertheless, one of the components of trust, shared values, significantly impacts the decision of eating the potentially risky food. In other words, if we had measured trust not directly but only indirectly, by means of its components, we would have found that trust (conceptualised as shared values) is an important factor determining cooperation, as already suggested in SIEGRIST and EARLE's model of cooperation (SIEGRIST et al., 2003). This could mean that asking people: "To what extent do you trust institutions?" elicits a summarizing judgment of trust that is less strong and less predictive than one elicited by asking only about the value component of trust ("To what extent do you think that institutions share the same values as you?"). In other words, the strength of the trust variable on impacting behavioural intentions might have been diluted because people's judgments comprise also other determinants that are not related to behavioural intentions.

However, the results of our analyses are clear. The strongest determinants of consumer choice under risk are: perceiving the other party to have similar values and feeling that eating the food is pleasant and good. Both these components are "affective" in the sense that they capture an emotional aspect of the experience with the good.

The study also illustrates that the strongest determinants of trust are perceiving that the other party is competent, has shared values, and gives true information. This result is consistent with the literature we discussed in the introduction, and particularly with the importance assigned to the lack of information when people are asked to judge the degree of risk (SPARKS and SHEPHERD, 1994; FIFE-SCHAW and ROWE, 1996). This factor can be summarized by the truthfulness of information variable in our study. We found that truthfulness of information is an important mediating factor between the three components of trust and trust itself. Apparently, the factors already defined as relevant characteristics that make a source credible are confirmed in this study. Competence, and responsibility (benevolence) are two important elements upon which people build their perception of truthfulness, which is in line with results by FREWER et al. (1996). To these factors, however, we must add a further variable, which is shared values. This variable seems extremely important in determining all the judgments relevant to consumer choice. If I perceive a party to share my values I will believe him/her to say the truth, I will therefore trust him/her, and in turn I will be very willing to eat the food that they recommend.

The relevance of shared values is probably, along with the null relationship between trust and behavioural intentions, the most important contribution of this study to the knowledge of consumer choice under risk. Future research should focus on how people build their perception of shared values. One possibility is that this judgment is an affective, automatic belief based on similarity (perceptual and sub-

stantial), but other factors might be relevant as well, and future research should address this topic further.

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Appendix: The Questionnaire on Trust

Q1) (GENERAL TRUST) To what extent do you agree with the following statement: "most people are honest" (1= not at all; 5 = completely)

Q2) (BEHAVIORAL TRUST) To what extent do you trust eating chicken [salmon]? (1= not at all; 5= completely)

Q3) (TRUST) To what extent do you trust Italian chicken [salmon] breeders? (1= not at all; 5 = completely).

Q4) (TRUST) To what extent do you trust Italian chicken [salmon] butchers? (1 = not at all; 5 = completely)

Q5) (TRUST) To what extent do you trust Italian authorities in charge of meat [fish] safety? (1= not at all; 5 = completely)

Q6) (COMPETENCE) To what extent do you think that Italian chicken [salmon] breeders are competent in their work? (1= not at all; 5 = completely)

Q7) (COMPETENCE) To what extent do you think that Italian chicken [salmon] butchers are competent in their work? (1= not at all; 5 = completely)

Q8) (COMPETENCE) To what extent do you think that Italian authorities in charge of meat [fish] safety are competent in their work? (1= not at all; 5 = completely)

Q9) (BENEVOLENCE) To what extent do you think that Italian chicken [salmon] breeders are concerned about your health? (1= not at all; 5 = completely)

Q10) (BENEVOLENCE) To what extent do you think that Italian chicken [salmon] butchers are concerned about your health? (1= not at all; 5 = completely)

Q11) (BENEVOLENCE) To what extent do you think that Italian authorities in charge of meat [fish] safety are concerned about your health? (1= not at all; 5 = completely)

Q12) (SHARED VALUES) To what extent do you think that Italian chicken [salmon] breeders share your same values? (1= not at all; 5 = completely)

Q13) (SHARED VALUES) To what extent do you think that Italian chicken [salmon] butchers share your same values? (1= not at all; 5 = completely)

Q14) (SHARED VALUES) To what extent do you think that Italian authorities in charge of meat [fish] safety share your same values? (1= not at all; 5 = completely)

Q15) (TRUTHFULNESS OF INFORMATION) To what extent do you trust Italian chicken [salmon] breeders to tell the truth about chicken meat? (1= not at all; 5 = completely)

Q16) (TRUTHFULNESS OF INFORMATION) To what extent do you trust Italian chicken [salmon] butchers to tell the truth about chicken meat? (1= not at all; 5 = completely)

Q17) (TRUTHFULNESS OF INFORMATION) To what extent do you trust Italian authorities in charge of meat [fish] safety to tell the truth about chicken meat? (1= not at all; 5 = completely)