CONSUMER ONLINE GROCERY BUYING INTENTION: A TRA VERSUS A TPB APPROACH

By

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Abstract

This paper tests the ability of two consumer theories - the theory of reasoned action and the theory of planned behavior - in predicting consumer online grocery buying intention. In addition, a comparison of the two theories is conducted. Data were collected from two web-based surveys of Danish (n=1222) and Swedish (n=1038) consumers using self-administered questionnaires. Lisrel results suggest that the theory of planned behavior (with the inclusion of a path from subjective norm to attitude) provides the best fit to the data and explains the highest proportion of variation in online grocery buying intention.

Introduction

In recent years, several theories and models have been proposed for the purpose of explaining and predicting consumer online behavior. It has been suggested (refer to e.g., Peterson et al., 1997) that products selected by consumers primarily on the basis of search attributes are most amenable to online retailing because direct experience is not required. Also, Klein (1998) suggests that the Internet is particularly useful for information seeking in relation to search products due to low perceived search costs. Verhoef and Langerak (2001) have considered possible determinants of consumers' adoption of electronic grocery shopping based on the theory of diffusion of innovations. Shim et al (2001) have proposed an online prepurchase intentions model, which is derived from Kleins (1998) interaction model of prepurchase consumer information search and the theory of planned behavior (Ajzen, 1985, 1991). In spite

of such examples, a call for more analytical research on online consumer behavior is often identified in research literature. Goldsmith (2001) claims that much research concerning online consumer behavior is rather descriptive in nature and not based on consumer theory. Elliot and Fowell (2000) suggest that further research is urgently required to explore the nature of the groups of factors that determine Internet shopping behavior. Reflecting such calls, the purpose of this paper is to test systematically the ability of two consumer theories - the theory of reasoned action and the theory of planned behavior - in predicting consumer online grocery buying intention. In relation hereto, we also conduct a comparison of the two theories. The paper is organized as follows. First, we provide a detailed discussion of the theory of reasoned action and the theory of planned behavior. Next, the research methodology is developed. Then, the obtained results are presented. Finally, we discuss the implications of the study and provide suggestions for further research.

Theory of reasoned action and theory of planned behavior

The theory of reasoned action regards a consumer's behaviour as determined by the consumer's behavioural intention, where behavioural intention is a function of 'attitude toward the behaviour' (i.e. the general feeling of favorableness or infavorableness for that behaviour) and 'subjective norm' (i.e. the perceived opinion of other people in relation to the behaviour in question) (Fishbein and Ajzen, 1975; Chang, 1998). The theory predicts intention to perform a behavior by consumer's attitude towards that behavior rather than by consumer's attitude towards a product or service. Also, a consumer's intention to perform a certain behavior may be influenced by the normative social beliefs held by the consumer. As an example, a consumer might have a very favourable attitude toward having a drink before dinner at a restaurant. However, the intention to actually order the drink may be influenced by

the consumer's beliefs about the appropriateness (i.e. the perceived social norm) of ordering a drink in the current situation (with friends for a fun meal or on a job interview) and her/his motivation to comply with those normative beliefs (cf. Hawkins et al., 2001).

The theory of reasoned action is concerned with rational, volitational, and systematic behavior (Fishbein and Ajzen, 1975; Chang, 1998), i.e. behaviors over which the individual has control (cf. Thompson et al., 1994). This assumption has been widely criticized. Sheppard et al. (1988) argue that researchers are often interested in situations in which the target behavior is not completely under the consumer's control. However, as observed by Sheppard et al., "actions that are at least in part determined by factors beyond individuals volitional control fall outside the boundary conditions established for the model" (p. 326). For example, a consumer may be prevented from buying groceries online if the consumer perceives the purchase process as too complex or if the consumer does not possess the resources necessary to perform the considered behavior. Such considerations are incorporated into the theory of planned behavior (Ajzen, 1985, 1991). In comparison with the theory of reasoned action the theory of planned behavior adds 'perceived behavioral control' as a determinant of behavioral intention. The theory of planned behavior is therefore an extension of the theory of reasoned action. Perceived behavioral control (PBC) can be conceptualized as the consumer's subjective belief about how difficult it will be for that consumer to generate the behavior in question (refer to Posthuma and Dworkin, 2000). The concept of PBC has been considered in relation to a number of various research settings. In investigating consumer complaint behavior Stephens and Gwinner (1998) use the term 'secondary appraisal' as a conceptualization of a consumer's perceived ability to deal with an unsatisfactory experience (e.g., file a complain). Shim et al. (2001) have proposed and tested an online prepurchase

model intentions model, which includes the concept of PBC. In studying unethical behavior Chang (1998) has applied both the theory of reasoned action and the theory of planned behavior and thus included PBC in the investigation. In building a conceptual model of arbitrator acceptability Posthuma and Dworkin (2000) included PBC among a number of other key concepts adapted from e.g. control theory and organizational justice theories.

The theory of reasoned action and the theory of planned behavior are both displayed in Figure 1.

Insert Figure 1 about here

In Figure 1, the theory of reasoned action is represented by the full thin arrows (Model 1), whereas the theory of planned behavior is represented by the full thin arrows *and* the broken arrow (Model 2). In addition to investigating the ability of theory of reasoned action and the theory of planned behavior in predicting consumer online grocery buying intention, we also test whether the inclusion of a path from subjective norm to attitude (Model 3) will improve the predictive power of online grocery buying intention as it has been indicated by other studies (e.g., Chang, 1998; Shimp and Kavas, 1984). All arrows in Figure 1 therefore represent Model 3. The prediction of actual behavior was not included in our research design, as most of our respondents have not yet carried out an online grocery purchase (refer to Methodology section).

The theory of reasoned action and the theory of planned behavior have been applied and validated in a large number of studies (refer to e.g., Sheppard et al., 1988; Ajzen, 1991; Chang, 1998). For a number of reasons, the theories seem also well suited for the purpose of

investigating and predicting consumer online grocery purchase intentions. *Firstly*, as stated by Lupton (1994: 666), "food and cuisine are basic elements of every culture". People consume groceries (especially food) and engage in grocery related activities not only to obtain some functional consequences but also to communicate with others (Douglas and Isherwood, 1996). Thus, social norms could potentially be an important factor in influencing grocery-buying practices. This might also hold true when considering grocery buying in an online context. Nicovich and Cornwell (1998: 147) claim that there is "no doubt that the Internet is more than strictly a vehicle for communications; it has developed a social organism that is more than the sum of its parts". Giese (1996: 51) suggests that, "while it might have been overlooked early on, the Internet cannot now be ignored as a cultural phenomenon". In addition, previous research (e.g., Van den Poel and Leunis, 1999) indicates that consumers' perceived risk when considering buying online may be larger than when considering buying offline. In seeking to reduce this risk, a consumer may communicate with other consumers to obtain normative guidance. *Secondly*, recent research indicates that consumers perceive obstacles and difficulties (PBC) in performing online shopping behavior. Even in the context of search goods (i.e. goods for which a major part of the perceived relevant attributes can be assessed prior to purchase) it has been suggested that "when studying consumers' Internet purchasing behavior, researchers should take perceived behavioral control into consideration in that Internet shopping does require skills, opportunities, and resources, and thus not occur merely because consumers decide to act" (Shim et al, 2001: 413). *Thirdly*, because consumers may perceive both difficulties and risk when considering online grocery shopping they can be expected to use their cognitive resources in forming beliefs toward the related attributes, which in turn may result in the development of an overall feeling (attitude) towards the behavior in question (refer to e.g., Antil, 1983; Zaichkowsky, 1985; Rossiter and Percy,

1987).

Methodology

Data Collection

The data presented in this paper were collected from two online (web-based) surveys of Danish and Swedish consumers using self-administered questionnaires. One sample (Survey I; n=1222) was collected among Danish consumers in August/September 2002 and one sample (Survey II; n=1058) was collected among Swedish consumers in September 2002. In the Danish survey, 88 respondents (7.2%) had carried out an online grocery buying. In the Swedish survey, the corresponding numbers are 110 and 10.4%, respectively. 497 Danish respondents (40.7%) had sought online information concerning groceries, while in the Swedish survey the corresponding numbers are 534 and 50.5%, respectively. The questionnaires were distributed to households by the use of an Internet-panel administered by a market research firm (Catinét Research). When a household consisted of more than one person, the respondent was chosen as the household-member most often responsible for carrying out the household's grocery shopping. Compared to the statistics on the Danish and Swedish population, elderly people are underrepresented in the data. Further, more females than males participated and the educational level was above average among both Danish and Swedish respondents. This skew ness was expected due to the chosen method of data collection and should therefore not be regarded as a serious problem invalidating the results.

Measurements

Multiple item scales were developed for each of the four constructs shown in Figure 1.

Subjective norm (SN) (perceived social influence) was measured by obtaining the respondents level of agreement to the following two statements: (1) Members of my family think that it is a good idea to buy groceries via the Internet, (2) Most of my friends and acquaintances think that shopping groceries via the Internet is a good idea. A five-point Likert scale (1=disagree totally; 5=agree totally) measured respondents' level of agreement to the two statements. The two statements were derived from Thompson et al. (1994).

Perceived behavioural control (PBC) was measured by five items representing respondents' perceptions of the ease of online grocery shopping as well as possible obstacles related to online grocery shopping. The included items (refer to Appendix) were derived from literature concerning PBC (e.g., Chang, 1998; Shim et al., 2001).

Attitude towards online grocery buying was measured by two items representing respondents' overall evaluation of the attractiveness of carrying out online grocery shopping. A five-point Likert scale (1=disagree totally; 5=agree totally) measured respondents' level of agreement to the following two statements: (1) Electronic shopping of groceries is attractive to me in my daily life, (2) Buying groceries via the Internet is well suited to the way in which I normally shop groceries.

Online grocery buying intention (BI) was measured by obtaining the respondents response to the following two questions (items): (1) How likely is it that over the next 5 years you will shop for groceries via the Internet? A seven-point semantic scale (1=not likely at all; 7=very likely) measured the respondents' response. (2) How large a part of your grocery shopping do you intend to carry out via the Internet in 5 years from now? A 7-point scale ranging from 0%

to more than 50% was applied. The measurement of BI involves both a measure of 'expectation' (item 1) and of 'intention' (item 2). A number of considerations guided the selection of these two items. In considering whether to replace a certain amount of offline grocery shopping with online grocery shopping, two possible comparison processes can be applied by the consumer (refer to Sheppard et al., 1988). One possibility is an attitude comparison process in which the consumer compares her/his attitude and social norm towards each type of shopping and chose the one with the most positive attitude, SN (and PBC). Another possibility involves a comparison of the (perceived) strength of the intention to buy online versus offline choosing the alternative with the strongest intention. However, unless we are dealing with well-known consumer choice procedures (which we cannot assume when dealing with online grocery shopping), we are faced with the uncertainty of not knowing what future comparison process will be applied by the consumer. In this connection, Sheppard et al. (1998: 328) claim that, "if an intention comparison process drives choice among alternatives, a single measure of intention is likely to provide an attenuated prediction of actions or outcomes involving a choice. In contrast, individuals' estimates [expectations] are likely to include some consideration of alternatives". If instead an attitude comparison process is applied, the consumer makes choices prior to the formation of an intention. Thus, in this case both intentions and expectations include some considerations of the various shopping alternatives (refer to Sheppard et al., 1988). In light of these considerations, we included both types of items in our measurement of BI.

The applied constructs and measurements are all displayed in the Appendix.

Results

Initial model considerations

The conducting of an exploratory factor analysis showed that the hypothesized discrimination between constructs was generally maintained in both experiments. Also, all relevant factor loadings were significant ($p<0.01$). These initial model considerations indicate that the constructs do exist and that they are tapped by the measures (scales) used.

Model specification

The model in Figure 1 was translated into a LISREL model consisting of a measurement part (confirmatory factor analysis) and a structural equation part (simultaneous linear regression). The relationships between the variables were estimated by maximum likelihood estimation. The model in Figure 1 was tested using a two-stage analysis (refer to Anderson and Gerbing, 1988). First, the measurement model is developed by conducting confirmatory factor analysis. Next, the structural equation paths are estimated to test the three proposed models. To investigate which structural equation model best explains the sample covariance we conducted nested-model comparisons (refer to e.g., Chang, 1998; Cronin et al., 2000). The theory of reasoned action (Model 1) is nested within the theory of planned behavior (Model 2) by setting to zero the path from PBC to BI (refer to Chang, 1998). Setting to zero the path from SN to attitude nests the theory of planned behavior within Model 3. Chi-square difference tests (Bollen, 1989) are calculated in order to analyze possible significant improvements in the model fit. Also, possible improvements in the proportion of variation in BI explained by the constructs included in Model 1-3 are considered.

Confirmatory factor analysis

All four scales were tested simultaneously in one confirmatory factor analysis model. In this model each scale item is only allowed to load on one factor and cannot cross-load on other factors. The results of the confirmatory factor analysis, including the standardized factor loadings, construct reliabilities, and proportion of extracted variance, are displayed in Table 1.

Insert Table 1 about here

All factor loadings were significant ($p<0.05$) which demonstrate that the chosen generic questions for each latent variable reflect a single underlying construct. The reliabilities and variance extracted for each variable indicate that the model was reliable and valid. All construct reliabilities exceed, or are close to, 0.70 (Bagozzi and Yi, 1988). Variance extracted estimates were all above 0.38 (most were above 0.50). The reliabilities and variance were computed using indicator standardized loadings and measurement errors (Hair et al., 1998; Shim et al., 2000.).

Structural equation results

The results of the structural equation modeling revealed that the χ^2 for all the estimated models (Model 1-3) had a p-value <0.01 indicating that the models fail to fit in an absolute sense. However, since the χ^2-test is very powerful when n is large even a good fitting model (i.e., a model with just small discrepancies between observed an predicted covariances) could be rejected. Thus, several writers (e.g., Hair et al., 1998) recommend that the χ^2 measure should be complemented with other goodness-of-fit measures. The values of the goodness of fit index (GFI) were for all the estimated models above 0.94, which indicate a good abolute

model fit (Bollen and Long, 1993). The point estimates of RMSEA were between 0.052 and 0.110, which for all the estimated models indicate a reasonable fit of the model in relation to the degrees of freedom (Bollen and Long, 1993). The Bentler and Bonett normed fit index (NFI) showed values above 0.95. These values suggest an acceptable improvement of fit over the null model (Drôge, 1989). In addition, the values of the comparative fit index (CFI) were above 0.95 for all the estimated models. To conclude, acceptable support is provided for the models as proposed (refer to Table 2).

Insert Table 2 about here

Model 1 tests the validity of the theory of reasoned action in predicting online grocery buying intention. Significant chi-square difference tests indicate that Model 1 provides a significant improvement in fit over the null model in both survey I and II (p-values<0.01). Model 1 explains 63.7% and 55.3% of the variation in BI (i.e., R^2), respectively. The comparison of Model 2 (representing the theory of planned behavior) with Model 1 suggests that Model 2 provides a small (however significant, p-values of the conducted chi-square difference tests were <0.05 and <0.01, respectively) improvement in fit when compared to Model 1. In both surveys, no improvements in R^2 are detected. Model 3, which extends the theory of planned behavior by adding a path from SN to attitude, provides in both survey I and II a significant improvement in fit when compared to Model 2. The chi-square difference tests showed significant (p-values <0.01) improvements in fit in both surveys and large improvements in R^2 are detected. Model 3 explains 74.8% and 62.1% of the variation in BI, respectively. The chi-square differences suggest that in both surveys the improvements in fit are higher when replacing Model 2 with Model 3 than when replacing Model 1 with Model 2. All values of

GFI, RMSEA, NFI, and CFI also improved in the same direction (in both survey I and II). To conclude, our analyses suggest that Model 3 provides the best fit to the data and explains the highest proportion of variation in BI.

Insert Table 3 about here

In Model 3, the primary predicting element of online grocery buying intention (BI) is attitude (0.88 and 0.75, respectively; p-values<0.01) (refer to Table 3). In both surveys, SN had significant direct effects on BI (0.57 and 0.24, respectively; p-values<0.01). However, the indirect effect of SN on BI through attitude was in both surveys larger than the direct effect of SN on BI (survey I: 0.90x0.88=0.79, p-value <0.01; survey II: 0.89x0.75=0.67, p-value<0.01). No significant effect of PBC on BI was detected in survey I, and in survey II PBC had only a small effect on BI (0.14, p-value<0.01). As can be seen from Table 4 a comparison of the two surveys shows almost identical results. In the next section, we discuss the results more thoroughly.

Discussion

The overall purpose of our studies was to test the ability of the theory of reasoned action and the theory of planned behavior in predicting consumer online grocery buying intention. In addition, our purpose was to compare the predicting power of the two theories. Our results strongly suggest that both theories are capable of explaining a high proportion (more than 55%) of the variation in future online grocery buying intention. Also, both theories provide an acceptable fit to the data. However, the theory of planned behavior with the inclusion of a

path from SN to attitude provides the significantly best fit to the data and provides the best prediction of online grocery buying intention (R^2=0.748, survey I; and R^2=0.621, survey II). Our findings support Chang (1998) who in a study of unethical behavior also found a convincing improvement in fit when adding a path from SN to attitude to the theory of planned behavior. However, the relative chi-square difference was much higher in the present studies than in the study conducted by Chang.

Consumers' attitude toward online grocery shopping was the most important predictor of online grocery buying intentions. This finding supports the theory of reasoned action and the theory of planned behavior, which both predict that attitude towards behavior is a determinant of behavioral intention. Additional support for this finding can be derived from Thompson et al. (1994) who in a study of (offline) food choice behavior found a strong correlation between attitude evaluation and behavioural intention.

In the present study, all respondents are already established with access to the Internet and may therefore not take possible computer investments etc. into account unless, for example, a hardware replacement is considered. Following, the theory of planned behavior it should, however, be expected that the perceived difficulty (or ease) of carrying out an online grocery buying affects whether or not that behavior will be carried out. This suggestion receives only weak support in our study. PBC was only slightly found to affect BI in survey II, whereas in survey I no relationship was detected. Our result differs from Ajzen (1991) who (based on a review of 16 studies of prediction intention using the theory of planned behavior) concludes that the inclusion of PBC significantly improved the prediction of intentions. This indicates that consumers do not perceive major obstacles in performing online (grocery) buying. The

results hereby support various reports (e.g., Hansen, 2003) demonstrating that, in general consumer online buying is becoming more and more widespread and that consumers to some extent are now familiar with this way of purchasing. In Denmark and Sweden, this is especially true for books, software, music, videos, and tickets (Hansen, 2003).

On the other hand, our results also suggest that online buying behavior should not just be regarded as a matter of 'subject-channel interaction' but that also social normative influence could be of high importance to a consumer when considering an online grocery buying. At least two possible explanations seem to apply in connection hereto. First, much relevant information concerning online grocery buying may be classified as 'experience information' (refer to Nelson, 1970) involving possible consumer decision factors as e.g., 'are the groceries damaged when I receive them at home?', 'are cold and frozen goods inadequate cold/frozen, when I receive them at home?', and 'will it be difficult to return or exchange unwanted grocery items?'. From an economics of information perspective inexperienced online consumers may simply be imperfectly informed and may therefore keep an open mind towards possible guidance from friends and relatives. Second, evidence (Liao & Chang, 2001: 301) suggests that shopping for many consumers is regarded as an organic experience in which they "enjoy roaming the malls in search of bargains while having an outing with the family". Thus, a consumer can also be seen as a member of a household in which decisions regarding store patronage (off- or online) is not just a matter for the individual household-member but a matter for the entire household. Since subjective norm mainly affects BI indirectly, it can also be suggested that the influence of a consumer's social surroundings (when that consumer is considering buying groceries online) is normative but, however, not determinant.

In several food choice applications of the theory of reasoned action subjective norm was found to be a poor predictor of behavioral intention (e.g., Thompson et al., 1994; Sapp and Harrod, 1989). This may be due to a low level of involvement with the act as much food choice can be characterized as habitual behavior (refer to Thompson et al., 1994). However, in our studies respondents are not just evaluating their behavioral intention toward purchasing groceries but at the same time their intention to buy groceries through an alternative shopping channel, i.e., the Internet. Since considerations on whether to use a new shopping channel may involve new types of risk, respondents can be expected to be involved and therefore sensitive to normative guidance/influence. For the purpose of investigating the role of involvement as a moderating variable between social norm and behavioral intention and as a moderating variable between social norm and attitude, we suggest that future research include a measure of involvement when investigating the theory of reasoned action and/or the theory of planned behavior. In addition, as suggested by Ajzen (1991) the relative importance of attitude, SN, and PBC in predicting BI may vary across behavior and situations. Thus, the predicting power of the two theories should also be tested in relation to other online consumer products. Hence, we suggest that both search goods and experience goods are included in the investigation. Since the risk of purchasing online search goods can be expected to be lower than the risk of purchasing online experience goods, the effects of the predicting factors (attitude, PBC, and SN) on BI may also differ. In relation hereto, we propose that groceries in an online context can be considered as a 'mixed good' containing a mixture of search attributes (e.g., price, brand, country-of-origin, fat content) and experience attributes (e.g., taste, flavour).

Limitations of study

It should be emphasized that only behavioral intentions are measured and explained in this research. Therefore, the measurement of (future) actual online shopping patterns *might* lead to different results. Such intention-behavior inconsistencies may occur because of developments and changes in e.g. Internet characteristics, consumer characteristics, product attributes, search conditions, situational factors, etc. (refer to e.g., Shim et al., 2001). Also, this research concentrated on analysing one product category (groceries). This could mean that the results may suffer from a lack of generalizability when other product categories are considered. A large cross-section of product categories ought to be studied to improve the generalizability of the results.

Table 1.
Confirmatory Factor Analyses Results

Construct/ Indicator	Standardized Factor Loading		Construct Reliability		Extracted Variance	
	Survey I	Survey II	Survey I	Survey II	Survey I	Survey II
Attitude			0.67	0.85	0.51	0.73
A1	0.78	0.82				
A2	0.64	0.89				
Subjective Norm			0.71	0.82	0.56	0.69
SN1	0.78	0.71				
SN2	0.71	0.94				
Perceived Behavioral Control			0.76	0.77	0.39	0.40
PBC1	0.58	0.64				
PBC2	0.66	0.49				
PBC3	0.80	0.73				
PBC4	0.54	0.73				
PBC5	0.51	0.54				
Behavioral Intention			0.86	0.89	0.75	0.80
BI1	0.87	0.90				
BI2	0.86	0.89				

Table 2.
Model Comparisons and Fit Measures

Model	χ^2	Df	$\Delta\chi^2$	GFI	RMSEA	NFI	CFI	R^2 (a)
Survey I								
Null Model	965.441	43						
Model 1 – TRA	740.986	41	224.455**	0.941	0.087	0.972	0.969	0.637
Model 2 – TPB	736.173	40	4.813*	0.942	0.086	0.968	0.970	0.624
Model 3 – TPB (+ SN → Attitude)	324.504	39	411.669**	0.976	0.073	0.986	0.989	0.748
Survey II								
Null Model	858.524	43						
Model 1 – TRA	838.341	41	20.183**	0.942	0.110	0.956	0.958	0.553
Model 2 – TPB	827.369	40	10.972**	0.942	0.110	0.956	0.958	0.555
Model 3 – TPB (+ SN → Attitude)	149.210	39	678.159**	0.989	0.052	0.992	0.994	0.621

Note:
*:   P-value < 0.05.
**: P-value < 0.01.
 (a): Explained proportion of variation in 'Future online buying intention (BI)'.
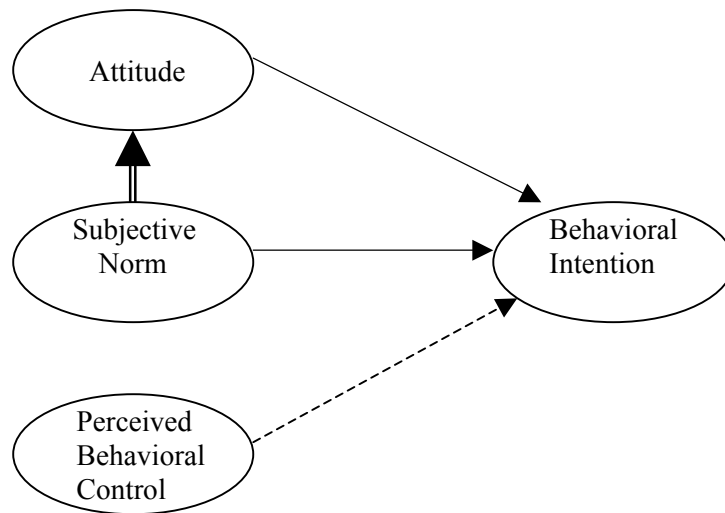
Table 3.

Estimation Results for Survey I and II (Model 3)

(Standardized regression weights)

Relations	Estimates of structural equation coefficients	
	Survey I	*Survey II*
Subjective Norm→Attitude	0.90**	0.89**
Attitude→Online Buying Intention	0.88**	0.75**
Subjective Norm→Online Buying Intention	0.57**	0.24**
Perceived Behavioral Control→Online Buying Intention	0.06	0.14**

**: Significant on 1% level

FIGURES

Figure 1.
Specification of Investigated Models

Notes: Thin arrows represent the theory of reasoned action (Model 1).
        Thin arrows and broken arrow represent the theory of planned behavior (Model 2)
        All arrows represent Model 3.

APPENDIX

Items used to measure the constructs in survey I and survey II

SUBJECTIVE NORM
  Members of my family think that it is a good idea to buy groceries via the Internet (X1)
  Most of my friends and acquaintances think that shopping groceries via the Internet is a good idea (X2)
ATTITUDE TOWARDS ONLINE GROCERY BUYING
  Electronic shopping of groceries is attractive to me in my daily life (X3)
  Buying groceries via the Internet is well suited to the way in which I normally shop groceries (X4)
PERCEIVED BEHAVIORAL CONTROL
  In general, electronic shopping is very complex (X5)
  It is hard to find the needed products when shopping groceries via the Internet (X6)
  With electronic shopping of groceries it is difficult to order products (X7)
  In general, electronic shopping of groceries yields few problems for me (X8)*
  It is difficult to receive groceries purchased via the Internet and to have them delivered
      at home (X9)
ONLINE GROCERY BUYING INTENTION
  How likely is it that over the next 5 years you will shop for groceries via the Internet? (X10)
  How large a part of your grocery shopping do you intend to carry out via the Internet in 5 years from now? (X11)

* Item reversed.

References

Ajzen, I. (1985), From intention to action: A theory of planned behavior, In J. Kuhl and J. Beckman (Eds.), *Action Control: From Cognitions to Behaviors*, New York, NY: Springer.

Ajzen, I. (1991), The Theory of Planned Behavior, *Organizational Behavior and Human Decision Processes*, 50: 179-211.

Antil, J.H. (1983), Conceptualization and operationalization of Involvement, *Advances in Consumer Research*: 203-9.

Bagozzi, R.P. and Yi, Y. (1988), On the Evaluation of Structural Equation Models, *Journal of the Academy of Marketing Science*, 16, 1: 74-94.

Bollen K. A. and Long J. S. (1993), *Testing Structural Equation Models*, London SAGE Publications.

Bollen, K.A. (1989), *Structural Equations with Latent Variables*, Wiley, New York.

Chang, M.K. (1998), Predicting Unethical Behavior: A Comparison of the Theory of Reasoned Action and the Theory of Planned Behavior, *Journal of Business Ethics*, 17: 1825-34.

Cronin, J.J., Brady, M.K. and Hult, T.G. (2000), Measuring the Effects of Quality, Value, and Satisfaction on Consumer Behavioral Intentions in Service Environments, *Journal of Retailing*, Vol. 76(2): 193-218.

Douglas, M. and Isherwood, B. (1996), *The world of goods – towards an anthropology of consumption*, 2. ed., Routledge, London.

Drôge C. (1989), Shaping the Route to Attitude Change: Central versus Peripheral Processing Through Comparative versus Noncomparative Advertising, *Journal of Marketing*, 26: 193-204.

Eastlick, M.A. (1996), *Consumer Intention to adopt interactive teleshopping*, Marketing Science Institute Working Paper, Report No. 96-113, Cambridge, MA: Marketing Science Institute.

Elliot, S. and Fowell, S. (2000), Expectations versus reality: a snapshot of consumers experiences with Internet retailing, *International Journal of Information Management*, 20: 323-36.

Fishbein, M. and Ajzen, I. (1975), *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*, Addison Wesley, Reading, Mass.

Giese, J.M. (1996), Place Without Space, Identity Without Body: The Role of Cooperative Narrative in Comunity and Identity Formation in a Text-Based Electronic Community, Dissertation, State College, PA: Pennsylvania Sate University, USA.

Goldsmith R.E. (2001), The influence of e-commerce attitudes on innovative online buying, *Quaterly Journal of Electronic Commerce*, 1, 4.

Hair J, Anderson R. E., Tatham R. L. and Black, W. C. (1998), *Multivariate Data Analysis*, Fifth ed., Prentice-Hall, New Jersey.

Hansen, T. (2003), *The Online Grocery Consumer: Results From Two Scandinavian Surveys*, Research Report January 2003, Department of Marketing, Copenhagen Business School.

Hawkins, D.I., Best, R.J. and Coney, K.A. (2001), *Consumer Behavior: Building Marketing Strategy*, Irwin McGraw-Hill, 8th ed.

Klein, L.R. (1998), Evaluating the Potential of Interactive Media through a New Lens, *Journal of Business Research*, 41: 195-203.

Lupton, D. (1994), *Food, memory and meaning; the symbolic and social nature of food events*, The Editorial Board of The Sociological Review, Blackwell Publishers: 664-85.

Nicovich, S. and Cornwell, T.B. (1998), An Internet Culture?: Implications for Marketing, Journal of Interactive Marketing. Reprinted in: Poul Richardson (ed.) (2001), *Internet Marketing*, McGraw-Hill: 147-58.

Peterson, R.A., Balasubramanian, S, and Rosenberg, B.J. (1997), Exploring the Implications of the Internet for Consumer Marketing, *Journal of the Academy of Marketing Science*, Vol.

25, No. 4: 329-46.

Posthuma, R.A. and Dworkin, J.B. (2000), A behavioral theory of arbitrator acceptability, *International Journal of Conflict Management*, Vol. 11(3): 249-66.

Rossiter, J.R. and Percy, L. (1987), *Advertising and Promotion Management*, McGraw-Hill.

Sapp, S.G. and Harrod, W.J. (1989), Social Acceptability and Intentions to Eat Beef: an Extension of Fishbein-Ajzen Model Using Reference Group Theory, *Rural Sociology*, Vol. 54: 139-44.

Sheppard, B.H., Hartwick, J., and Warshaw, P.R. (1988), The Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations for Modifications and Future Research, *Journal of Consumer Research*, Vol. 15: 325-43.

Shim, S., Eastlick, M.A., Lotz, S.L., and Warrington, P. (2001), An online prepurchase intentions model: The role of intention to search, *Journal of Retailing*, 77: 397-416.

Shimp, T.A. and Kavas, A. (1984), The Theory of Reasoned Action Applied to Coupon Usage, *Journal of Consumer Research*, 11: 795-809.

Stephens, N. and K.P. Gwinner (1998), Why Don't Some people Complain? A Cognitive-Emotive Process Model of Consumer Complaint Behavior, *Journal of the Academy of Marketing Science*, Vol. 26, No. 3: 172-89.

Thompson, K.E., Haziris, N. and Alekos, P.J. (1994), Attitudes and food choice behavior, *British Food Journal*, 96 (11): 9-17.

Van den Poel D. and Leunis J. (1999), Consumer acceptance of the Internet as a channel of distribution, *Journal of Business Research*, 45, 3: 249-56.

Verhoef, P.C. and Langerak, F. (2001), Possible determinants of consumers' adoption of electronic grocery shopping in the Netherlands, *Journal of Retailing and Consumer Services*, 8: 275-85.

Zaichkowsky, J.L. (1985), Measuring the Involvement Construct, *Journal of Consumer Research*, 12: 341-52.

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