

# When Reputation Engenders Trust: An Empirical Investigation in Business-to-Consumer Electronic Commerce

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## INTRODUCTION

Even though expectations of the extensive growth of electronic commerce (e-commerce) have been scaled down since Internet euphoria subsided, recent figures show that European consumers' interest in online shopping, which is the form of e-commerce focused on in this paper, is still growing (GfK 2002). The GfK-study, which was conducted in six European countries, reveals an increase in the number of e-consumers from spring 2001 to spring 2002 in all countries. The highest absolute increase is reported for Germany (from 15.7 million in 2001 to 26.5 million people in 2002). According to a study conducted by the national association of German retailers (HDE), retailer activity in business-to-consumer (B2C) e-commerce also increased (HDE 2002). In 2002, 29% of German retailers offered their customers products and services on the Internet, which shows an increase of more than one-third compared to the year 2000. However, for 2003, the HDE forecasts a transaction volume of online retailing of eleven billion Euros which represents only 2.1% of the whole volume of Germany's retail industry. This indicates that retail customers still prefer to shop

in the traditional environments of bricks and mortar.

It has frequently been stated that a reason for consumer reluctance to purchasing online, or to making this a habit, lies in the increased perception of risk and a lack of trust in this form of shopping (Ba *et al.* 1999; Gefen 2000; Hoffman *et al.* 1999; Jarvenpaa and Tractinsky 1999). Various surveys attest to consumers' enhanced perception of risk concerning online shopping. Those surveys show that consumers are considerably uncertain about matters like privacy, security for financial transactions, legal regulations or proper delivery (BCG 2000; eMarketer 2002; NFO Interactive 2001).

Perceived risk has been defined in terms of the consumer's perceptions of the uncertainty and adverse consequences of buying a product or service (Dowling and Staelin 1994). Although risk is perceived to be a factor in most purchase decisions, because a consumer cannot always be certain that all of his or her buying goals will be achieved, it can be argued that it is particularly pronounced in e-commerce as opposed to traditional commerce. This is largely founded in three sources: First, perceived risk is enhanced by the electronic system,

## A b s t r a c t

Consumers' enhanced risk perception is an important challenge to be met in electronic commerce. The research presented here casts new light on the concept of trust, which is a vital mechanism when it comes to reduce perceived risk. Trust is conceptualized as a multi-dimensional concept comprised of a person's trusting attitudes toward the vendor, the system and the self as well as his or her trusting intention to buy from a vendor on the Internet. Based upon an online survey among 473 German Internet users, the interrelationships between the dimensions of trust and the influential role of a vendor's as well as the system's reputation to engender trust is analysed. Results show that a person's trusting intention is most strongly influenced by a person's trusting attitude toward the vendor. The role of reputation to enhance trust is particularly pronounced if the consumer's experience with a particular vendor or the Internet as a shopping environment in general are low. Implications of the research findings are discussed.

**Keywords:** trust, reputation, online shopping, Internet, consumers

## A u t h o r s

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in particular the Internet as a shopping environment.<sup>1</sup> This relatively new shopping sphere with its complex underlying technology should bear more risk and cause more failures than established systems where teething troubles have been already overcome (Kaas 1990). According to Akerlof (1970), a consumer takes particularly great chances to get hold of a 'lemon' (i.e., an exemplar with hidden defects) when technology is not yet well developed. Furthermore, many legal issues remain unsolved. Risk perception of the Internet as a shopping environment is fuelled by the media and their regular reports on deficiencies and cases of fraud. The second source of risk are the potential market partners, the online vendors, who have the possibility to act opportunistically (Williamson 1985) and easily register and track customer data. Fear of losing one's privacy by the vendor's misuse of customer data is one of the major sources of perceived risk in e-commerce (e.g., Hoffman *et al.* 1999). Furthermore, retailing can be categorized as a service. Services have been stated to be more difficult to evaluate than goods (Zeithaml 1981) and to be particularly risky (Murray 1991). Finally, on the Internet the identity of a vendor and the products sold can not easily be scrutinized. The third source of risk is the consumer him- or herself. Consumers have often not yet gained much experience with this form of shopping and therefore have not accumulated enough relevant knowledge about potential market partners as well as the process of how to shop online. Doubts about one's capabilities to be able to handle the online shopping process and not make a mistake have been identified as inhibiting factors for this form of shopping (Riegelsberger and Sasse 2001).

One of the major challenges in e-commerce is to reduce the amount of risk a consumer perceives to emanate from those three sources. This research aims to provide new theoretical insights as well as empirical evidence for ways to approach this challenge. Therefore, the concepts of trust and reputation were drawn on. Trust is considered a vital mechanism to reduce perceived risk, and reputation in turn can serve as a powerful antecedent for trust to develop.

## THE ROLE OF TRUST AND OBJECTIVES OF RESEARCH

Even though some facets of perceived risk can be reduced by control mechanisms such as insurance or contracts, it has been stated that '[u]ltimately, however, there is no foolproof safeguard, and suspicion eventually gives way to knowledge or realignment, so that actors must fall back on some kind of trust' (Lewis and Weigert 1985, p 969). It has also been argued that risk reduction on the sole basis of control mechanisms might even be counter-productive in a sense that it inhibits the long-term development of a trusting relationship (Rousseau *et al.* 1998). The concept of perceived risk

is closely linked with that of trust because perceived risk is a necessary condition for trust to be operative and an outcome of trust building is a reduction in the perceived risk of the transaction or relationship (Mitchell 1999). Trust is central to interpersonal and commercial relationships because it reduces uncertainty and consequently the portion of risk that can not be eliminated through control mechanisms.

Research on trust is manifold, and approaches vary greatly between disciplines (McKnight and Chervany 2002). In marketing, most empirical evidence stems from the business-to-business (B2B) context (see Raimondo 2000), only few analyses were done in the area of B2C marketing (Fletcher and Peters 1997; Kennedy *et al.* 2001). With the advent of e-commerce and problems of enhanced risk perception, scholars from IS and marketing have approached the question of how to enhance consumer trust in this context (Gefen 2000; Jarvenpaa and Tractinsky 1999; Walczuch *et al.* 2001; Yoon 2002). In these analyses, trust has in general been treated as a unidimensional construct. However, it is suggested that trust is composed of various dimensions that need to be taken into account and measured. Therefore, the first research objective is to *develop a comprehensive concept and measure of trust in B2C e-commerce*.

In order to advise for successful e-commerce practice the researcher has to learn about the antecedents of trust and their mechanisms of action. Widespread conviction states that trust develops over time especially through experience of the trustor (e.g., the consumer) with the trustee (e.g., the vendor) (e.g., Deutsch 1973; Ganesan 1994; Rempel *et al.* 1985). However, if personal experience does not provide enough information to overcome the uncertainty threshold, the consumer needs to search for additional information. The reason for increased external information search can be traced back to a lack of experience as well as an enhanced desire for more information which has been stated to be particularly pronounced in risky situations (e.g., Cox 1967). Among the various sources of external information, imparted experience from independent third parties has been found to be most effective in situations where risk perception is high (e.g., Arndt 1968; Murray 1991).

Reputation, understood as the 'second-hand rumour that one has positive general traits' (McKnight and Chervany 2001) or as signalling the experiences of third parties with a potential exchange partner (Picot *et al.* 2001), should therefore be an important antecedent for trust to develop. The role of reputation to engender trust has been empirically shown in e-commerce (Jarvenpaa and Tractinsky 1999; Walczuch *et al.* 2001) and B2B marketing (Doney and Cannon 1997; Ganesan 1994). Furthermore, in the economics literature the role of reputation to enhance trust is strongly emphasized (e.g., Williamson 1985). Apart from the vendor's

reputation, the reputation of the electronic system, the Internet as a shopping environment, should also exert an effect on consumer trust. This aspect has not been taken into consideration so far. Therefore, the second research objective is to *develop a conceptualization and measure for both, Internet vendor and system reputation*. On the basis of these conceptualizations it is possible to approach the third research objective which is to *test the interrelationships between reputation (vendor and system) and the dimensions of trust in the context of B2C e-commerce*.

## RESEARCH MODEL OF TRUST AND REPUTATION IN E-COMMERCE

### Trust

The definitions of trust are manifold. Frequently cited definitions in marketing describe trust as 'a willingness to rely on an exchange partner in whom one has confidence' (Moorman *et al.* 1993, p 82), as 'existing when one party has confidence in an exchange partner's reliability and integrity' (Morgan and Hunt 1994, p 23) or 'the perceived credibility and benevolence of a target of trust' (Doney and Cannon 1997, p 36). Those definitions show that trust comprises at least two dimensions: The 'willingness to rely' and the 'evaluation of the trustee' on certain attributes (credible, benevolent etc.). McKnight and Chervany (2002), who conducted a meta analysis of 65 trust definitions, make a distinction between a trustor's willingness or intention to rely, as well as the underlying beliefs that lead to this trusting intention. This differentiation is in accordance with Ajzen's (e.g., 1985) theory of planned behaviour (TOPB) which differentiates between beliefs and attitudes as underlying factors of a person's intention to act, which ultimately plays a decisive role for the person to show a certain behaviour.

Drawing on the TOPB as well as McKnight and Chervany's (2002) model of trust, a differentiation is made between a consumer's 'trusting intention' to purchase something from a certain online vendor within a particular timeframe and his or her underlying 'trusting attitudes' towards the sources of potential risk (see above): the system; the vendor; and the self. Attitudes are defined as 'general evaluations people hold in regard to themselves, other people, objects, and issues' (Petty and Cacioppo 1986, p 4). Trusting attitudes shall be understood as attitudes that support the formation of a trusting intention. The trusting attitude towards the vendor, *vendor trust*, comprises the evaluation of the vendor to have particular attributes of a trustworthy partner. According to McKnight and Chervany's meta analysis, as well as my own qualitative research (qualitative interviews, see below), these attributes comprise a vendor's competence, predictability, benevolence,

reliability and honesty. The trusting attitude toward the system, the concept of *system trust*, comes from the sociology tradition (Luhmann 1979). It stands for the beliefs that the necessary conditions are in place for a successful outcome to an endeavour of one's life. In the context of e-commerce it shall be defined as an individual's evaluation that the Internet as a shopping environment is a safe and low-risk place to transact personal business. Following McKnight and Chervany the aspect of normality was added, meaning that the Internet is perceived as a normal place to shop. *Trust in oneself* is closely related to Bandura's (1986, p 391) concept of self-efficacy which is defined as 'people's judgements of their capabilities to organize and execute courses of action required to attain designated types of performances'. Accordingly, trust in oneself in the context of e-commerce stands for the attitude of individuals toward themselves that they possess the specific knowledge and skill to engage in shopping activities on the Internet. This aspect has so far been neglected in trust conceptualizations. However, in Ajzen's TOPB self-efficacy is part of the concept 'perceived behavioural control' which is argued to play a particular role for the formation of a person's intention.

Thus, trust in B2C e-commerce is defined as being expressed by the consumer's intention to rely on, and purchase from, an online vendor despite the fact that negative consequences are possible. Underlying this intention are the consumer's trusting attitudes towards the vendor, the system and the self. According to the TOPB, the following hypotheses concerning the relationship between attitudes and intention are formulated:

- H1: The higher a consumer's vendor trust the higher his or her trusting intention.
- H2: The higher a consumer's system trust the higher his or her trusting intention.
- H3: The higher a consumer's trust in oneself the higher his or her trusting intention.

### Reputation

As is the case for the concept of trust, reputation has received a variety of definitions, which largely differ between disciplines (see Fombrun and Van Riel 1997). In the marketing literature, reputation is often used synonymously with image (see Gotsi and Wilson 2001). In this research, however, a differentiation between the two concepts shall be made. Drawing on Picot and colleagues (2001), reputation is defined as the public information on the hitherto trustworthiness of an object. Reputation emerges as a result of social network effects when information on an object in one relation spreads to others via an information network (Granovetter 1985). In contrast to the collective nature

of reputation, an image is the mental picture a person has stored in his or her memory,<sup>2</sup> or – in psychological terms – it can be defined as the cognitive schema a person has of an object. Attitudes are considered a certain type of schema where the latter represents the broader category (Eagly and Chaiken 1993). Thus, the trusting attitudes within the presented conceptualization of trust can be perceived as special aspects of the image an individual has of an object.

The objects of reputation generally considered in the literature are individuals, groups or organizations. This notion shall be expanded in a way that abstract systems as well can have a reputation because, according to Giddens (1990), they also depend on trust. Behind abstract systems, like the Internet as a shopping environment, are humans who are responsible for their functioning and who depend on the system's acceptance by others. Thus, a differentiation is made between the reputation of a vendor, *vendor reputation*, which is the social information on his trustworthiness, and the reputation of the system, *system reputation*, which is the social information on its well-functioning. The conceptualization largely mirrors the individual attitudes of vendor and system trust on the collective level. Reputation is perceived in terms of third parties' trusting attitudes towards those objects that are disseminated within a social network. It is hypothesized that vendor reputation positively influences vendor trust and that system reputation positively influences system trust:

- H4: The higher a vendor's reputation the higher a consumer's vendor trust.
- H5: The higher the system's reputation the higher a consumer's system trust.

It is further hypothesized that system reputation also has a positive influence on consumers' trust in themselves to have the capabilities to shop online. Drawing on social learning theory (Bandura 1977), a person can acquire the ability to repeat an act by observing when another person performs an action. Acts that are especially salient or prominent have a greater impact than acts that aren't (Zebrowitz-McArthur 1981). In the case of online shopping, which usually takes place in private, newcomers can learn and gain confidence mostly by being told that others managed to shop online and how they proceeded in doing this. Especially imparted experience by people similar to the consumer should support the formation of trust in oneself. According to Festinger (1950), in situations that are difficult to judge, people turn to social reality to evaluate their capabilities and attitudes in comparison to people who are similar to themselves. A consumer who learns about his friends' or colleagues' successful shopping sprees on the Internet and who believes that their knowledge and skills are rather similar to his or her

own, should be more likely to believe to possess those capabilities and to follow suit:

- H6: The higher the system's reputation the higher a consumer's trust in oneself.

As stated above, personal experience should serve as a particularly strong trust signal. According to Fazio and Zanna (1981), attitudes based on direct personal experience are better predictors for subsequent behaviour than attitudes based on indirect experience. The authors explain this by the ease of retrieval of attitudes that were formed through direct experience. In a study conducted in the context of e-commerce, Gefen (2000) showed that familiarity with a vendor has a significant influence on trust. According to Luhmann (1979), familiarity creates a framework and understanding of the environment and the interaction partner within which the expectations for a positive outcome develops. Experience again plays an important role for familiarity to build up. It is hypothesized that this framework and understanding created through experience and expressed in greater familiarity should alleviate the influence of third parties' attitudes on a person's individual trusting attitudes. More specifically, personal experience should serve as a moderator variable for the relationship between reputation and trust. If a person has accumulated enough familiarity and knowledge through direct experience with a vendor or the system, attitudes and beliefs of others, the reputation, should exert a lesser influence on the consumer's trusting attitudes than if he or she has not yet made much personal experience him- or herself:

- H7: The more experience a consumer has with a particular vendor the less the influence of vendor reputation on vendor trust.
- H8: The more experience a consumer has with the Internet as a shopping environment the less the influence of system reputation on system trust.
- H9: The more experience a consumer has with the Internet as a shopping environment the less the influence of system reputation on trust in oneself.

The exogenous variables of the model, vendor and system reputation, are furthermore expected to correlate with each other. That is because vendors are individuals and together comprise the overall producers of the Internet system. Higher vendor reputation should therefore exert a positive influence on the reputation of the system and vice versa. Within the social network where reputation is spread, those two objects of reputation should mutually be affected by positive but also by negative spillover effects:

- H10: Vendor reputation and system reputation are positively correlated.

## RESEARCH METHOD

### Survey sample

To determine the tenability of the research model, survey research with a cross-sectional approach to data collection was conducted. The target population was that of German Internet users who had already or could potentially buy goods or services from an online vendor. Subjects for the main study were recruited from a German online panel. From the 1,000 panel members that were invited to fill in an online questionnaire, 522 documents were returned of which 49 had to be excluded because of incompleteness of information. This was largely due to a temporary failure of the host-server. Of the 473 remaining entries 46% were female, 54% male. Subjects had a mean age of 30.6 years with a range from 15 to 73. The majority (58%) had either already completed (29%) or was still studying at university (29%). More than half of the total sample (58%) used the Internet six to seven days per week. These demographics indicate that the sample somewhat over-represented better-educated and heavy users. However, representativeness for the total population of Internet users, which is a general problem in online surveys because it is not possible to draw a random-sample (Bandilla 1999), was considered of minor importance since this research aimed at testing interrelationships between variables and not at acquiring population parameters.

### Instrument development and procedure

For measuring the constructs as conceptualized in this research for the context of B2C e-commerce, no established measurement scales have yet been reported that could be adapted without modification. Therefore, adequate measures for the four constructs of trust and the two constructs of reputation needed to be developed. This was done largely following the process proposed by Homburg and Giering (1996). For each construct, multiple items were generated based on a review of the relevant literature and existing measures reported there. Appendix A shows the main sources of existing instruments that were considered when generating the items. Additionally, in-depth qualitative interviews with 12 consumers were conducted on the risks and advantages of online shopping, perceptions of trustworthy vendors and relevant sources of information on online shopping. In a next step, all potential items to measure the constructs were compiled in a questionnaire. Independent judges (15 academics) evaluated all items concerning their fit with the respective construct as well as ease of response. Items judged to be 'an integral part' of the relevant construct by at least 60

per cent and to be 'definitely not an integral part' by less than 5 per cent were retained. Items that could not easily be answered were discussed with judges and reworded.

All remaining items were then compiled in an online questionnaire to be answered by the survey sample. Participants were asked to indicate their personal trust in the system and the perceived reputation of the system. Subsequently, vendor trust and reputation were measured in reference to the vendor where participants had shopped last for their personal needs.<sup>3</sup> Subjects who had not yet purchased something on the Internet ( $N = 44$ ) could choose any vendor they knew; for those, a list of ten vendors was provided as aid to memory. Then, the participant's trust in him or herself was measured. Apart from the central constructs of the research model further measures were included. Those served to provide information on the demographic structure of the sample, on Internet usage and online shopping behaviour. The amount of experience was measured by asking how often a person had already bought something on the Internet. Accordingly, those who had already bought something from a certain vendor were asked how often they had already done so. This operationalization of experience is in accordance with experimental settings, where the amount of experience is specifically manipulated through frequency of interaction with an object (e.g., Wu and Shaffer 1987). Furthermore, participants were asked for the external sources of information from which they had received significant information on the vendor in question as well as on the Internet as a shopping environment in general. Questions concerned the amount of information received from a particular source and whether this information had left a good or bad impression of the respective object. All item wordings are listed in Appendix B.

## RESULTS

### Measurement model evaluation

To determine the quality of the instrument, the validity and unidimensionality of the measures were examined using exploratory factor analysis (EFA) – principal axis analysis with VARIMAX rotation – followed by confirmatory factor analysis (CFA). Internal consistency was calculated using Cronbach's alpha. EFA extracted 62% of the total variance. Items that did not meet the EFA's criteria for discriminant and convergent validity (loading of at least 0.50 and cross-loadings no higher than 0.40) were excluded for further analyses. Apart from four items that did not meet those criteria, the item measuring normality in system reputation was excluded despite its satisfactory values. This was considered necessary because of the elimination of the respective item measuring perceived normality in

system trust thereby maintaining the compatibility of these two constructs as mirror images of individual and collective attitudes. The results of the EFA are presented in Table 1.

In a second step, confirmatory factor analysis (CFA) with revised measures was run using AMOS 4.0 (Arbuckle and Wothke 1999). The CFA indicated that one of the two items measuring the reliability aspect in vendor trust had to be excluded because of their shared residual variance. The resulting measurement model for all six constructs had a good overall fit. Although the chi-square value is significant, which is a finding not unusual with large sample sizes (Bagozzi 1981), the ratio of chi-square to degrees of freedom of 2.03 is beneath the recommended threshold of 3. CFA showed further that all items loaded significantly and highly on their assigned constructs, and nearly all indicator reliabilities – except for VT\_4 and VT\_5 – exceeded 0.50 (Hildebrandt 1987). Thus, notably more than the recommended 50 per cent (Homburg 1992) of all local fit indices met their recommended thresholds. Finally, the coefficient alphas for each scale exceeded the 0.70 standard determined by Nunnally (1978). Table 2 presents the results of the CFA and Cronbach's alpha. In sum, the measurement model is clean, with evidence for unidimensionality, convergent and discriminant validity as well as reliability.

## Structural model evaluation

The proposed hypotheses were examined employing full structural equation modelling (SEM) also using AMOS 4.0. SEM was used because of its superiority to other multivariate techniques. It enables us not only to assess complex interrelated dependence relationships, but also to incorporate the effects of measurement error on the structural coefficients at the same time (Hair *et al.* 1998). Results related to the structural model are depicted in Figure 1.

All relational hypotheses (H1–H6 and H10) were supported except for H2. No support was found for the path from system trust to trusting intention. Furthermore, evidence was found for two more relations which were not hypothesized: Trust in oneself exerted a significant effect on system trust (0.32) and system trust in turn had a significant influence on vendor trust (0.30). The structural model without the hypothesized path system trust → trusting intention and with the two newly included parameters trust in oneself → system trust and system trust → vendor trust had a good model fit. All indices were above recommended thresholds, except for a significant chi-square p-value (for problems with this statistic see above).

The squared multiple correlation values ( $R^2$ ) – the percentage of explained variance of a construct – show

Table 1. Results of exploratory factor analysis (values  $> \pm 0.10$ )

	<i>Vendor trust</i>	<i>System trust</i>	<i>Trusting intention</i>	<i>Trust in oneself</i>	<i>System reputation</i>	<i>Vendor reputation</i>
VT_1	<b>0.777</b>		0.174	0.111		0.172
VT_2	<b>0.765</b>	0.110	0.125	0.116		0.216
VT_3	<b>0.539</b>		0.156		0.156	0.282
VT_4	<b>0.541</b>	0.155			0.165	0.218
VT_5	<b>0.518</b>	0.161	0.187			0.210
VT_6	<b>0.512</b>	0.263				0.256
SYT_1	0.184	<b>0.618</b>	0.128	0.196	0.325	
SYT_2	0.170	<b>0.845</b>			0.181	
SYT_3	0.176	0.707		0.114	0.123	
SYT_4	0.187	0.472	0.324	0.402	0.241	
INT_1	0.307	0.126	<b>0.745</b>	0.238	0.105	0.166
INT_2	0.333	0.150	<b>0.888</b>	0.195		0.149
INT_3	0.583	0.174	0.509	0.105		
TOS_1	0.125	0.183	0.125	<b>0.737</b>		
TOS_2		0.202	0.173	<b>0.822</b>	0.107	
TOS_3		0.527		0.371		
SYR_1	0.111	0.138			<b>0.756</b>	
SYR_2	0.152	0.174	0.130		<b>0.812</b>	
SYR_3				0.138	0.719	
SYR_4		0.235		-0.137	0.455	0.110
VR_1	0.380		0.121			<b>0.755</b>
VR_2	0.385		0.122		0.126	<b>0.814</b>
VR_3	0.400				0.108	<b>0.788</b>

Table 2. Results of confirmatory factor analysis (CFA)

Global fit indices of CFA							
Index	$\chi^2$ p-value	$\chi^2/df$	GFI	AGFI	CFI	RMSEA	p-close
Value	0.000	210.735/104 = 2.03	0.948	0.924	0.976	0.047	0.693
Local fit indices of CFA and Cronbach's alpha							
Construct	Item	Factor loading (standardized)	t-value of factor loading	Indicator reliability	Scale reliability – Cronbach's $\alpha$		
Vendor trust	VT_1	0.817			0.831		
	VT_2	0.825	19.284	0.681			
	VT_3	0.675	15.104	0.455			
	VT_4	0.618	13.596	0.381			
	VT_5	0.584	12.732	0.341			
System trust	SYT_1	0.771		0.594	0.826		
	SYT_2	0.854	16.747	0.730			
	SYT_3	0.739	15.300	0.547			
Trusting intention	INT_1	0.914		0.835	0.928		
	INT_2	0.947	24.701	0.897			
Trust in oneself	TOS_1	0.907		0.823	0.813		
	TOS_2	0.756	11.381	0.571			
System reputation	SYR_1	0.781		0.609	0.810		
	SYR_2	0.871	10.704	0.759			
Vendor reputation	VR_1	0.863		0.745	0.920		
	VR_2	0.912	26.664	0.832			
	VR_3	0.898	26.061	0.806			

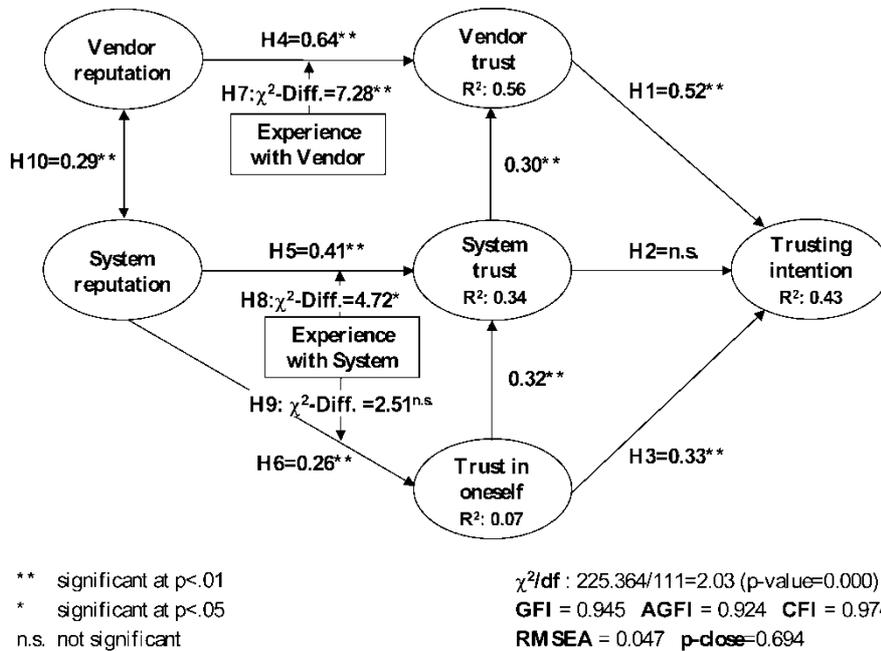


Figure 1. Analysis of research model

that the model explained 43% of the variance of the target variable trusting intention. Decomposition of effects in direct, indirect and total effects (Backhaus

*et al.* 2000) show that vendor trust exerts the strongest effect on the trusting intention (0.52), followed by trust in oneself with a total effect of 0.37 and vendor reputation

which indirectly exerts the third strongest effect (0.33). System trust and system reputation both moderately influenced a consumer's trusting intention in an indirect way (0.15 and 0.16).

To test for the moderating effect of experience on the influence of reputation on trust multiple group analysis was applied (Ping 1995). In comparison with other methods, multiple group analysis is considered to be a good technique to test for such interaction effects (Yang-Wallentin *et al.* 2001). The survey sample was split into two subgroups corresponding to the amount of experience with the vendor (much experience: bought from vendor 6–10 times and more; little experience: bought from vendor never or once) and accordingly with the system (much experience: bought on the Internet 11–20 times and more; little experience: bought on the Internet never or 1–2 times). Cases of which the moderating variables' values lie around the median level were excluded to ensure within-group homogeneity and between-group heterogeneity. Differences in chi-square values between the model where all paths were constrained to be equal and the model where the respective path between reputation and trust was set to be free indicated the existence of a moderating effect. As can be derived from Figure 1, the three chi-square difference tests revealed that two of the hypotheses, H7 and H8, were supported. Persons who had gained much experience with a vendor were significantly less influenced by a vendor's reputation than those who had never or rarely bought something from the respective vendor before. The same moderating effect proved true for the relationship between system reputation and system trust, indicating that experienced online shoppers were significantly less influenced by the system's reputation than inexperienced ones. However, relationships between reputation and trust were in both cases still significant even for experienced shoppers. There was no evidence for a moderating effect of experience with the system on the relationship between system trust and trust in oneself. The chi-square difference between the models was not significant, indicating that inexperienced and experienced Internet shoppers were quite equally and moderately (0.26) influenced by system reputation. Trust in oneself rather develops through personal experience. Analysis of variance showed that people with much experience in online shopping had significantly more trust in themselves (additive index of trust in oneself) than people with little experience ( $F = 130.24$ ).

### Analysis of sources of information

By means of separate structural analyses, the influence of external sources of information on vendor and system reputation was scrutinized. Since those variables do not

represent latent constructs that are to be measured by multiple indicators, the respective sources of information were treated as single indicator variables. Results of their structural relations with the latent constructs of reputation show that particularly the impression, positive or negative, which the information from a source had left influenced an object's reputation. In case of the system, the impression-quality of the information – its valence – deriving from the following four sources exerted a significant positive influence: organizations for consumer protection (0.21); reports in newspapers/magazines/radio/TV (0.20); friends/acquaintances/colleagues (0.18); and advertising on the Internet (0.17). In terms of quantity (1 = many, 7 = none), most information on the system was received from friends/acquaintances/colleagues ( $x = 3.5$ ) and reports in newspapers/magazines/radio/TV ( $x = 3.6$ ). A vendor's reputation was significantly and most strongly influenced by the valence of information from friends/acquaintances/colleagues (0.29). The vendor's website exerted the second strongest influence (0.22), followed by reports in newspapers/magazines/radio/TV (0.21). Consumers had gathered most information on the vendor from the vendor's website ( $x = 2.9$ ) and second most from friends/acquaintances/colleagues ( $x = 4.1$ ).

### DISCUSSION OF RESULTS

The research presented here aims to deliver new insights into the concept of trust in B2C e-commerce which has been proposed to be a vital mechanism to meet the challenge of enhanced risk perception in online shopping. The results support the validity and usefulness of conceptualizing trust as a concept that is comprised of multiple dimensions. This differentiated conceptualization aids to gain deeper insight into the mechanism of action and interdependency structure of the trust-concept. Results support the basic assumption of Ajzen's (1985) attitude theory that consumers' trusting intention to buy from a certain vendor on the Internet is largely determined by their trusting attitudes. Empirical evidence shows that among the relevant trust objects or sources of potential risk in e-commerce – the vendor, the system and the self – trusting attitudes towards the vendor are most important for developing a trusting intention. Results did not support the hypothesis of a direct influence of system trust on a person's trusting intention. It can be assumed, that this insignificant direct influence is partly due to the specific formulation of the trusting intention concerning target, context and time according to the correspondence-principle (Ajzen and Fishbein 1977). However, system trust was found to be indirectly effective on the trusting intention by exerting a significant influence on vendor trust. This indicates that the more trusting a person's attitude towards the general system is, the more he or she trusts a specific part of this system, in this case a vendor who

sells his products there. Another important result is the role of trust in oneself as a predictor for a person's trusting intention and system trust. This shows that one's subjective belief to possess the specific knowledge about online shopping represents an important element within the trust-concept.

In order to gain insight into the mechanisms that enhance trust in B2C e-commerce, the particular role of reputation was elaborated. A successful and novel differentiation was made between the reputation of the vendor and that of the system. It was shown that both objects of reputation play an important role in the formation of trusting attitudes, however, vendor reputation exerted the stronger indirect effect on the target variable trusting intention. Empirical evidence indicated that the relationship between vendor reputation and vendor trust and system reputation and system trust was particularly pronounced when experience with the respective object was scarce. This result stresses the importance of reputation as a determinant of trust especially for inexperienced consumers and expands insights of information search theory in risky situations (e.g., Beatty and Smith 1987) onto the context of e-commerce. When internal information is insufficient in risky buying situations, external information can serve to fill this knowledge gap. Reputation is a particularly effective form of external information because of its pronounced evaluative character in terms of public information on the hitherto trustworthiness of an object.

Results concerning the sources from which consumers had received relevant information about the Internet as a shopping environment and a particular vendor delivered insight into the determinants relevant for the development of reputation. Empirical evidence was found that information from personal sources (friends/acquaintances/colleagues) were particularly influential for the perceived reputation of the vendor and also of significant relevance for the reputation of the system. Although more information on a vendor was gathered through the vendor's website than by personal sources, the latter had a stronger influence when it came to influencing vendor reputation. The role of independent and especially personal sources for the reduction of risk has been stressed in the marketing literature (e.g., Murray 1991). Since information disseminated among consumers within their social network is perceived to be a strong aspect for the development of reputation, it can be argued that independent personal sources by practising word-of-mouth communication (WOM) are particularly effective when it comes to building vendor reputation and ultimately trust.

### Implications for practice

Efficient communications management requires that companies concentrate their efforts on those determinants

that exert the strongest influence on the target variable, which is in the model presented here the consumer's trusting intention. Vendor trust and its strongest determinant vendor reputation are therefore the factors that should receive practitioners' particular attention. Especially when new customers are to be won vendor reputation serves as a highly influential factor on trusting attitudes towards the vendor. As has been stated above, information from independent personal sources, especially from friends/acquaintances/colleagues but also from independent impersonal sources like organizations for consumer protection or reports in the media have great potential to enhance reputation and ultimately engender trust. Because WOM communication transmits consumers' own experiences vividly and credibly to other consumers, this mode of communication is particularly effective. Online vendors are well advised to place emphasis on stimulating, monitoring and if at all possible managing WOM communication within the social networks of their (potential) customers. Directly stimulating WOM by raising involvement or by setting incentives or indirectly influencing perceptions through the stimulation and involvement of opinion leaders who speak in favour of the vendor are possible ways to proceed. Electronic markets possess particular network characteristics which can serve as important facilitators for the development and diffusion of information and thereby enhance the development of reputation (Einwiller and Will 2001). It is furthermore promising to actively engage in public relations and try to receive positive news coverage in traditional as well as online media. Another important implication of this study is the relative importance of a person's trust in him- or herself. Although its effect is not as strong as that of vendor trust, trust in oneself is still a strong determining factor for a consumer's trusting intention and thus promises to enhance success when invigorated. Efforts to enhance consumer's trust in their own capabilities can include to offer shopping-trials or clear and easy description of how to proceed in the online shopping process. The use of testimonials either on the vendor's website, in reports in trade magazines or as part of advertising can be effective to enhance this aspect of trust.

### Limitations and directions for future research

Some limitations of the study presented here may be related to the choice of research design which forced certain trade-offs. Compared to cross-sectional designs, longitudinal studies provide stronger inferences in models in which causality is suggested. Thus, the model tested here could benefit from being evaluated in a longitudinal setting. Another methodological aspect refers to the measurement of reputation in this

study. In order to gain deeper and more controlled insight into the effects of good and bad reputation of a vendor on experienced and inexperienced consumers in more or less risky buying situations, an experimental research setting would be appropriate. As is most often the case in quantitative research, only a limited number of variables could be focused on and other variables that may also be of importance for the development of trust in B2C e-commerce were possibly omitted. Another limitation refers to the survey sample in which persons that were particularly knowledgeable with the Internet and online shopping were over-represented. Although in the multi-group analysis subjects were separated according to their amount of experience and then compared with each other, it is possible that the group of inexperienced online shoppers is still more knowledgeable about Internet matters than inexperienced persons within the target population. A generalization of the results to the population of all German Internet users is therefore not possible. It is also important to note that the findings may not generalize to dissimilar cultures. Future research should assess the generalizability of the findings to other consumer groups, cultures or even contexts. Another interesting application in a broader buying context would be for example the situation of share investment. Finally, the study only touched the role of external information and information search for the development of reputation. In order to gain more insight into how reputation develops and which determinants are most important further research is required. In this connection, it would be particularly interesting to gain deeper insight into the mechanisms and motives that stimulate WOM communication among consumers.

## Notes

1. Currently the Internet and with it the personal computer still represent the major interface in e-commerce. In the years to come, when other devices like mobile phones or television gain ground in e-commerce, consumer risk perception might change because of the greater familiarity with the device used.
2. The concepts of image and brand are closely related in terms of the image representing the intangible part of the brand. According to Kapferer (1997), the brand is the different things that the buyer thinks of as soon as he or she perceives the name or symbol. By the same token, Meffert (2000) defines a brand as an unmistakable mental image of a product or service that is embodied in the psyche of a consumer.
3. It was explicitly stated not to choose an auction site (e.g., eBay), because in this case trust in the private vendor represents a special aspect of vendor trust which is not the focus of this research.

## References

- Ajzen, I. (1985) 'From Intentions to Actions: A Theory of Planned Behavior', in J. Kuhl and J. Beckmann (eds), *Action Control: From Cognition to Behavior*, New York: Springer, 11–39.
- Ajzen, I. and Fishbein, M. (1977) 'Attitude–Behavior Relations: A Theoretical Analysis and Review of Empirical Research', *Psychological Bulletin* 84, 888–918.
- Akerlof, G. (1970) 'The Market of Lemons: Quality Uncertainty and the Market Mechanisms', *Quarterly Journal of Economics* 84, 488–500.
- Arbuckle, J. L. and Wothke, W. (1999) *Amos 4.0 User's Guide*, Chicago, IL: Smallwaters.
- Arndt, J. (1968) 'Word-of-mouth Advertising and Perceived Risk', in H. H. Kassarian and T. S. Robertson (eds), *Perspectives in Consumer Behavior*, Glenview, IL: Scott, Foresman and Company, 330–6.
- Ba, S., Whinston, A. and Zhang, H. (1999) 'Building Trust in the Electronic Market Through an Economic Incentive Mechanism', in P. De and J. I. DeGross (eds), *Proceedings of the 20th International Conference on Information Systems (AIS 1999)*, Charlotte, NC.
- Backhaus, K., Erichson, B., Plinke, W. and Weiber, R. (2000) *Multivariate Analysemethoden*, 9th edn, Berlin: Springer.
- Bagozzi, R. P. (1981) 'Evaluating Structural Equation Models with Unobservable Variables and Measurement Error: A Comment', *Journal of Marketing Research* 18, August, 375–81.
- Bandilla, W. (1999) 'WWW-Umfragen. Eine alternative Datenerhebungstechnik für die empirische Sozialforschung?', in B. Batinic, A. Werner, L. Gräf and W. Bandilla (eds), *Online-Research. Methoden, Anwendungen und Ergebnisse*, Göttingen: Hogrefe, 6–17.
- Bandura, A. (1977) *Social Learning Theory*, Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1986) *Social Foundations of Thought and Action: A Social Cognitive Theory*, Englewood Cliffs, NJ: Prentice-Hall.
- BCG (2000) *The Race for Online Riches: E-Retailing in Europe*, online at: <http://www.bcg.com> [accessed 20 July 2000].
- Beatty, S. E. and Smith, S. M. (1987) 'External Search Effort: An Investigation Across Several Product Categories', *Journal of Consumer Research* 14, June, 83–95.
- Cox, D. F. (1967) 'Risk Handling in Consumer Behavior', in D. F. Cox (ed.), *Risk Taking and Information Handling in Consumer Behavior*, Boston, MA: Harvard University Press, 34–81.
- Deutsch, M. (1973) *The Resolution of Conflict: Constructive and Destructive Processes*, New Haven, CT: Yale University Press.
- Doney, P. M. and Cannon, J. P. (1997) 'An Examination of the Nature of Trust in Buyer–Seller Relationship', *Journal of Marketing* 61, April, 35–51.
- Dowling, G. R. and Staelin, R. (1994) 'A Model of Perceived Risk and Intended Risk-handling Activity', *Journal of Consumer Research* 21, June, 119–34.

- Eagly, A. H. and Chaiken, S. (1993) *The Psychology of Attitudes*, Fort Worth, TX: Harcourt Brace Jovanovich College Publishers.
- Einwiller, S. and Will, M. (2001) 'The Role of Reputation to Engender Trust in Electronic Markets', in *Proceedings of the 5th International Conference on Corporate Reputation, Identity, and Competitiveness*, Paris, France.
- eMarketer (2002) 'Consumers' Concern with Company Security', *eMarketer Daily Newsletter* 22 February.
- Fazio, R. H. and Zanna, M. P. (1981) 'Direct Experience and Attitude-behavior Consistency', in L. Berkowitz (ed.), *Advances in Experimental Social Psychology*, vol. 14, San Diego, CA: Academic Press, 161–202.
- Festinger, L. (1950). 'Informal Social Communication', *Psychological Review* 57, 271–82.
- Fletcher, K. P. and Peters, L. D. (1997) 'Trust and Direct Marketing Environments: A Consumer Perspective', *Journal of Marketing Management* 13, 523–39.
- Fombrun, C. J. and Van Riel, C. (1997) 'The Reputational Landscape', *Corporate Reputation Review* 1(1/2), 5–13.
- Ganesan, S. (1994) 'Determinants of Long-term Orientation in Buyer–Seller Relationships', *Journal of Marketing* 58, April, 1–19.
- Gefen, D. (2000) 'E-commerce: The Role of Familiarity and Trust', *Omega: The International Journal of Management Science* 28, 725–37.
- GfK (2002) *GfK Webgauge – Key results*, online at: [http://www.gfk-webgauge.com/titlesite/index\\_keyresults.htm](http://www.gfk-webgauge.com/titlesite/index_keyresults.htm) [accessed 19 September 2002].
- Giddens, A. (1990) *The Consequences of Modernity*, Cambridge: Polity Press.
- Gotsi, M. and Wilson, A. M. (2001) 'Corporate Reputation: Seeking a Definition', *Corporate Communications: An International Journal* 6(1), 24–30.
- Granovetter, M. (1985) 'Economic Action and Social Structure: The Problem of Embeddedness', *American Journal of Sociology* 91(3), 481–510.
- Hair, J. F., Anderson, R. E., Tatham, R. L. and Black, W. C. (1998) *Multivariate Data Analysis*, 5th edn, Upper Saddle River, NJ: Prentice-Hall.
- HDE (2002) *IT im Einzelhandel–Wertschöpfung, Kommunikation, e-Commerce*, online at: [http://www.einzelhandel.de/servlet/PB/menu/1013425\\_11/index.html](http://www.einzelhandel.de/servlet/PB/menu/1013425_11/index.html) [accessed 18 November 2002].
- Hildebrandt, L. (1987) 'Consumer Retail Satisfaction in Rural Areas: A Reanalysis of Survey Data', *Journal of Economic Psychology* 8, 19–42.
- Hoffman, D. L., Novak, T. P. and Peralta, M. A. (1999) 'Building Consumer Trust Online', *Communications of the ACM* 42(4), 80–85.
- Homburg, C. (1992) 'Die Kausalanalyse: Eine Einführung', *WiSt – Wirtschaftswissenschaftliches Studium* 10, 499–508.
- Homburg, C. and Giering, A. (1996) 'Konzeptualisierung und Operationalisierung komplexer Konstrukte', *Marketing ZFP* 1, 5–24.
- Jarvenpaa, S. L. and Tractinsky, N. (1999) 'Consumer Trust in an Internet Store: A Cross-cultural Validation', *Journal of Computer-Mediated Communication [On-line]* 5(2), online at: <http://www.ascusc.org/jcmc/vol5/issue2/jarvenpaa.htm> [accessed 8 January 2001].
- Kaas, K. P. (1990) 'Marketing als Bewältigung von Informations- und Unsicherheitsproblemen im Markt', *Die Betriebswirtschaft* 50(4), 539–48.
- Kapferer, J. N. (1997) *Strategic Brand Management – Creating and Sustaining Brand Equity Long Term*, London: Kogan Page.
- Kennedy, M. S., Ferrell, L. K. and LeClair, D. T. (2001) 'Consumers' Trust of Salesperson and Manufacturer: An Empirical Study', *Journal of Business Research* 51, 73–86.
- LaRose, R., Eastin, M. S. and Gregg, J. (2001) 'Reformulating the Internet Paradox: Social Cognitive Explanations of Internet Use and Depression', *Journal of Online Behavior* 1(2), online at: <http://www.behavior.net/JOB/v1n2/paradox.html> [accessed 3 March 2002].
- Lewis, D. J. and Weigert, A. (1985) 'Trust as a Social Reality', *Social Forces* 63(4), 967–85.
- Luhmann, N. (1979) *Trust and Power*, New York: John Wiley.
- McKnight, D. H. and Chervany, N. L. (2001) 'Conceptualizing Trust: A Typology and E-commerce Customer Relationship Model', in R. H. Sprague (ed.), *Proceedings of 34th Annual Hawaii International Conference on System Sciences (HICSS 2001)*, Los Alamitos, CA: IEEE Computer Society.
- McKnight, D. H. and Chervany, N. L. (2002) 'What Trust Means in E-commerce Customer Relationships: An Interdisciplinary Conceptual Typology', *International Journal of Electronic Commerce* 6(2), 35–59.
- Meffert, H. (2000) *Marketing: Grundlagen marktorientierter Unternehmensführung*, 9th edn, Wiesbaden: Gabler.
- Mitchell, V.-W. (1999) 'Consumer Perceived Risk: Conceptualisations and Models', *European Journal of Marketing* 33(1/2), 163–95.
- Moorman, C., Deshpandé, R. and Zaltman, G. (1993) 'Factors Affecting Trust in Market Research Relationships', *Journal of Marketing* 57, January, 81–101.
- Morgan, R. M. and Hunt, S. D. (1994) 'The Commitment–Trust Theory of Relationship Marketing', *Journal of Marketing* 58, July, 20–38.
- Murray, K. B. (1991) 'A Test of Services Marketing Theory: Consumer Information Acquisition Activities', *Journal of Marketing* 55, January, 10–25.
- NFO Interactive (2001) *Online Retail Monitor Study about Consumer Buying Habits is Released*. NFO Interactive press release, 4 January 2001, online at: <http://www.nfoi.com/nfointeractive/nfoipr01042001.asp> [accessed 6 January 2001].
- Nunnally, J. C. (1978) *Psychometric Theory*, 2nd edn, New York: McGraw-Hill.
- Oswald, M. E. and Fuchs, T. (1998) 'Readiness to Trust in Complex Situations', *Swiss Journal of Psychology* 57(4), 248–54.

- Petty, R. E. and Cacioppo, J. T. (1986) *Communication and Persuasion: Central and Peripheral Routes to Attitude Change*, New York: Springer.
- Picot, A., Reichwald, R. and Wigand, R. (2001) *Die grenzenlose Unternehmung: Information, Organisation und Management: Lehrbuch zur Unternehmensführung im Informationszeitalter*, 4th edn, Wiesbaden: Gabler.
- Ping, R. A. (1995) 'A Parsimonious Estimating Technique for Interaction and Quadratic Latent Variables', *Journal of Marketing Research* 32, August, 336–47.
- Raimondo, M. A. (2000) 'The Measurement of Trust in Marketing Studies: A Review of Models and Methodologies', in *Proceedings of IMP Conference 2000*, online at: [http://www.bath.ac.uk/management/imp/pdf/14\\_Raimondo.pdf](http://www.bath.ac.uk/management/imp/pdf/14_Raimondo.pdf) [accessed 20 January 2001].
- Rempel, J. K., Holmes, J. G. and Zanna, M. P. (1985) 'Trust in Close Relationships', *Journal of Personality and Social Psychology* 49(1), 95–112.
- Riegelsberger, J. and Sasse, M. A. (2001) 'Trustbuilders and Trustbusters,' in B. F. Schmid, K. Stanoevska-Slabeva and V. Tschammer (eds), *Towards the E-Society: E-Commerce, E-Business, and E-Government*, Boston: Kluwer, 17–30.
- Rousseau, D. M., Sitkin, S. B., Burt, R. S. and Camerer, C. (1998) 'Not so Different After All: A Cross-discipline View of Trust', *Academy of Management Review* 23(3), 393–404.
- Taylor, S. and Todd, P. (1995) 'Assessing IT Usage: The Role of Prior Experience', *MIS Quarterly* 19(4), 561–70.
- Walczuch, R., Seelen, J. and Lundgren, H. (2001) 'Psychological Determinants for Consumer Trust in E-retailing', in *Proceedings of the 8th Research Symposium on Emerging Electronic Markets (RSEEM 01)*, Maastricht, NL.
- Williamson, O. E. (1985) *The Economic Institutions of Capitalism. Firms, Markets, Relational Contracting*, New York: The Free Press.
- Wu, C. and Shaffer, D. R. (1987) 'Susceptibility to Persuasive Appeals as a Function of Source Credibility and Prior Experience with the Attitude Object', *Journal of Personality and Social Psychology* 52, 677–88.
- Yang-Wallentin, F., Schmidt, P. and Bamberg, S. (2001) 'Testing Interactions with Three Different Methods in the Theory of Planned Behavior: Analysis of Traffic Behavior Data', in R. Cudeck, S. Du Toit and D. Sörbom (eds), *Structural Equation Modeling: Present and Future: A Festschrift in Honor of Karl Jöreskog*, Chicago, IL: Scientific Software International, 405–23.
- Yoon, S.-J. (2002) 'The Antecedents and Consequences of Trust in Online-purchase Decisions', *Journal of Interactive Marketing* 16(2), 47–63.
- Zebrowitz-McArthur, L. A. (1981) 'What Grabs You? The Role of Attention in Impression Formation and Causal Attribution,' in E. T. Higgins, C. P. Herman and M. P. Zanna (eds), *Social Cognition: The Ontario Symposium* (vol. 1), Hillsdale, NJ: Erlbaum, 201–41.
- Zeithaml, V. A. (1981) 'How Consumer Evaluation Processes Differ Between Goods and Services', in J. H. Donnelly and W. R. George (eds), *Marketing of Services*, Chicago, IL: American Marketing Association, 186–90.

## Appendix A. Main sources considered for item generation

Construct	Source
Vendor trust	Doney and Cannon (1997) Kennedy <i>et al.</i> (2001) Oswald and Fuchs (1998) Considering results of McKnight and Chervany's (2002) meta analysis of trust definitions
System trust	Developed for this study; drawing on McKnight and Chervany's (2002) concept of institution-based trust and Jarvenpaa and Tractinsky's (1999) measure for 'Web-shopping risk attitudes'
Trusting intention	Jarvenpaa and Tractinsky (1999)
Trust in oneself	Taylor and Todd (1995) LaRose, Eastin and Gregg (2001)
System reputation	Developed for this study; drawing on measures for vendor reputation; paralleling measure of system trust
Vendor reputation	Doney and Cannon (1997) Ganesan (1994)

## Appendix B. Item wordings

Code	Item wordings (translation from German) in order of appearance as in questionnaire; scales from 1 (fully applies) to 7 (does not apply at all) if not stated differently
	<i>Experience with system</i>
SYEX	How often have you already purchased products or services for your personal needs on the Internet (except from auction sites like eBay)? Never, once or twice, 3 to 5 times, 6 to 10 times, 11 to 20 times, more than 20 times
	<i>System trust</i>
SYT_1	I consider the Internet sufficiently safe to shop there for my personal needs.
SYT_2	I consider the Internet a risky environment to shop there for my personal needs. (rec)
SYT_3	I feel uneasy when I think of buying something on the Internet for my personal needs. (rec)
SYT_4	For me, the Internet is a completely normal place to shop for my personal needs. <span style="float: right;">dropped</span>
	<i>System reputation</i>
SYR_1	As a place to shop, the Internet has a good reputation.* The Internet is regarded ...
SYR_2	... a safe place to shop for one's personal needs.
SYR_3	... a completely normal place to shop for one's personal needs. <span style="float: right;">dropped</span>
SYR_4	... a risky environment to shop for one's personal needs. (rec) <span style="float: right;">dropped</span>
	<i>Information sources on system</i>
SYINF	From which sources did you receive any relevant information on the Internet as a place to shop? Please indicate how much information you have received from each particular source (1 = plenty – 7 = none) and whether this information has left a positive or negative impression (1 = very positive – 7 = very negative; <i>if amount of information between 1 and 6</i> ). Friends/acquaintances/colleagues, family, statements of other users on the Internet, reports in newspapers/magazines/radio/TV, reports on the Internet, consumer-community websites (e.g., Ciao, Dooyoo), organizations for consumer protection, other independent organizations/initiatives (e.g., public authorities, OECD), advertising in newspapers/magazines/radio/TV, advertising on the Internet
	<i>Experience with vendor</i>
VEX	How often have you already purchased something from this vendor on the Internet? ( <i>only asked if person has ever purchased something on the Internet; others given 'never' as default answer</i> ) Once, 2 or 3 times, 4 or 5 times, 6 to 10 times, 11 to 15 times, more than 15 times <i>Vendor trust</i> As offeror of products and services on the Internet this vendor is in my opinion ...

(cont'd)

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VT_1	... competent.	
VT_2	... consistent in quality and service.	
VT_3	... keen to fulfil my needs and wants.	
VT_4	... honest.	
VT_5	... unreliable. (rec)	
VT_6	... nonserious. (rec)	dropped
	<i>Vendor reputation</i>	
VR_1	This vendor has a very good reputation.*	
VR_2	This vendor is regarded as trustworthy.	
VR_3	This vendor is regarded as reliable.	
	<i>Trusting intention</i>	
	The probability that I will buy something from this vendor on the Internet... (1 = very high – 7 = equal to zero).	
INT_1	... within the next three months is ...	
INT_2	... within the next six months is ...	
INT_3	... as soon as I need something from the range of goods the vendor has on offer is ...	dropped
	<i>Information sources on vendor</i>	
VINF	From which sources did you receive any relevant information on this vendor? Please indicate how much information you have received from each particular source (1 = plenty – 7 = none) and whether this information has left a positive or negative impression (1 = very positive – 7 = very negative; if amount of information between 1 and 6). Friends/acquaintances/colleagues, family, statements of other users on the Internet, advertising of vendor in newspapers/magazines/radio/TV, advertising of vendor on the Internet, website of the vendor, reports on vendor in newspapers/magazines/radio/TV, reports on vendor on the Internet, search engines, consumer-community websites (e.g., Ciao, Dooyoo), organizations for consumer protection, seals of approval/ certificates	
	<i>Trust in oneself</i>	
TOS_1	I have the feeling that I understand very well how and where to shop on the Internet.	
TOS_2	I know well how to proceed in order to find and order a certain offering on the Internet.	
TOS_3	I am concerned to do something wrong when shopping on the Internet. (rec)	dropped

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\*Instead of 'reputation' the German word 'Ruf', which expresses more strongly an object's standing among others, was used.