

# Psychological reasons for consumer trust in e-retailing

Citation for published version (APA):

Walczuch, R. M., & Seelen, J. (2000). *Psychological reasons for consumer trust in e-retailing*. METEOR, Maastricht University School of Business and Economics. METEOR Research Memorandum No. 050 <https://doi.org/10.26481/umamet.2000050>

## Document status and date:

Published: 01/01/2000

## DOI:

[10.26481/umamet.2000050](https://doi.org/10.26481/umamet.2000050)

## Document Version:

Publisher's PDF, also known as Version of record

## Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

## General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

[www.umlib.nl/taverne-license](http://www.umlib.nl/taverne-license)

## Take down policy

If you believe that this document breaches copyright please contact us at:

[repository@maastrichtuniversity.nl](mailto:repository@maastrichtuniversity.nl)

providing details and we will investigate your claim.

## **Psychological reasons for consumer trust in e-retailing**

Rita Walczuch and Joyce Seelen

### **Abstract**

This research in progress expands on existing research on e-retailing by examining the psychological factors that influence consumer trust in e-retailing. The psychological factors expected to influence trust are personality-based factors, perception-based factors, experience-based factors, knowledge-based factors and attitude. Hypotheses have been developed based on a thorough review of the trust literature. A pilot study has been conducted in the Netherlands and the results hereof are included in this paper.

Also published in the proceedings of RSEEM 2000, 17. - 19.9.2000, St. Gallen, Switzerland.

# 1. Research objectives and questions

The Internet has made it possible to conduct business-to-consumer transactions across an open network (Ford, 1998). Although the open network has many benefits, like low investment costs, it also raises many concerns. Currently the most important concerns of people with respect to e-commerce and e-retailing are security, privacy and consumer protection issues. These concerns have resulted in the fact that the existing dimensions of e-commerce and e-retailing are still smaller than expected. (IDC Research, 2000)

Research has found that the formerly mentioned concerns - privacy, security and consumer protection - can all be reduced to consumers' lack of trust in e-retailing (Dontje and Olthof, 1999). Trust is central to any commercial transaction, whether conducted in the conventional way (i.e. in a retail outlet) or over the Internet (i.e. by means of a web-site). This is because trust increases the probability of (re)purchase.

Several authors believe that without consumer trust, the development of e-retailing will never reach its economic potential (Cheskin Research and Studio Archetype/Sapient, 1999; Ferraro, 1998; Javenpaa and Tractinsky, 1999).

Only recently has research on the factors influencing consumer trust in e-retailing been conducted. Most of this research has been on the effects of situational factors on trust in e-retailing. This research focuses on the psychological factors that influence consumer trust in e-retailing.

The following definition of trust developed by Rousseau et al (1998) is the basis for this research:

Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another.

## 2. Psychological determinants for consumer trust in e-retailing

To identify the psychological reasons for consumer trust in e-retailing, the psychological factors that have an influence on trust in general have to be identified. Due to the fact that there is no comprehensive theory available, several theories are combined to form a complete picture of all psychological factors influencing trust. The factors are divided into the following five categories.

- Personality-based factors;
- Perception-based factors;
- Experience-based factors;
- Knowledge-based factors; and
- Attitude.

Hypotheses are developed for each factor (see table 1). Figure 1 represents a graphical representation of the hypothesized relationships.

### 2.1. Personality-based factors

According to Dibb et al (1994), personality consists of “all the internal traits and behaviors that make a person unique”. There exist a number of competing views as to what the few important dimensions of a person's personality are (Carver and Scheier, 1992; Gleitman,

1995). In this research use is made of one of the most accepted theories, namely Costa and McCrae's (1992) trait-theory, which contains the following five traits.

1. Extraversion;
2. Neuroticism;
3. Agreeableness;
4. Conscientiousness; and
5. Openness to experience.

### **2.1.1. Extraversion**

Extraversion can be defined as being focused on the outside world. Extrovert people like to be in other people's company. Because extrovert people are focused on the outside world, are more sociable, careless and fast to change (Carver, 1992; Angenent, 1998, Gleitman, 1995), it is thought that they will be more likely to trust e-retailers, especially with respect to information practices. These arguments lead to the formulation of hypothesis 1.

H<sub>1</sub>: Extrovert consumers are more likely to trust e-retailing

### **2.1.2. Neuroticism**

Neuroticism is characterized by emotional instability, pessimism and low self-esteem. People high in neuroticism often perceive that they have an unfavorable position in transaction processes (Olson and Suls, 1998; Angenent, 1998). They feel they have no control. Perceived low control has a negative influence on trust. This leads to the formulation of hypothesis 2.

H<sub>2</sub>: Consumers high in the personality trait 'neuroticism' are less likely to trust e-retailers

### **2.1.3. Openness to experience**

Openness to experience is characterized by open-mindedness. People high in openness to experience are more likely to make liberal decisions, in contrast to people who are low in openness to experience who tend to make more conservative and moderate decisions. More openness means also more willingness to embrace new concepts and being more careless with respect to new things (Olson and Suls, 1998). Hypothesis 3 includes this argument.

H<sub>3</sub>: Consumers high in the personality trait 'openness to experience' are more likely to trust e-retailing

### **2.1.4. Agreeableness**

People high in agreeableness have positive beliefs toward other people and appreciate other people's values and convictions. In contrast, people who are low in agreeableness have little respect for other people's interests and well-being, and are less concerned with social norms.

It is thought that people having respect for others also believe that others have respect for them. Therefore, people high in agreeableness are expected to be more trustful (Olson and Suls, 1998; Angenent, 1998). This argumentation is the basis for hypothesis 4.

H<sub>4</sub>: Consumers high in the personality trait 'agreeableness' are more likely to trust e-retailing

### **2.1.5. Conscientiousness**

People high in conscientiousness are thought to be responsible and trustworthy. Additionally, they tend to be more serious and cautious in making decisions. People low in conscientiousness will be more likely to trust and hence more trustful (Olson and Suls, 1998;

Angenent, 1998). Alternatively, it can be argued that people high in conscientiousness, expect other people to be conscientious as well and hence they are more likely to trust. In this research, however, we hypothesize that the first relationship is true. This has led to the development of hypothesis 5.

H<sub>5</sub>: Consumers low in the personality trait ‘conscientiousness’ are more likely to trust e-retailing

## **2.2. Perception-based factors**

Several scholars (Javenpaa and Tractinsky, 1999; Ganesan, 1994; Lewis and Weigert, 1985; Yamagishi and Yamagishi, 1994; Milne and Boza, 1999; Das and Teng, 1998; McKnight et al, 1998) have investigated the influence of consumer perception of certain factors on trust. Here these theories are combined and six factors that have been shown to have an influence on trust are discussed.

1. Perceived reputation of e-retailer;
2. Perceived investment of e-retailer;
3. Perceived similarity of e-retailer;
4. Perceived normality of e-retailer;
5. Perceived control of consumer; and
6. Perceived familiarity of consumer.

### **2.2.1. Perceived Reputation**

Reputation is based on second hand information about a (potential) seller’s traits (McKnight et al, 1998; Yamagishi and Yamagishi, 1994). Second hand information is not as assuring as firsthand information, which is collected during a history of experiences with e-retailing.

According to McKnight et al (1998), sellers with a good reputation are seen as trustworthy, and those with a bad reputation as untrustworthy. This led to the formulation of hypothesis 6.

H<sub>6</sub>: The better the perceived reputation of e-retailers is, the more like consumers are to trust e-retailing

According to Mitra et al (1999), information sources can be classified into three categories. They are ordered according to importance.

1. Consumer dominated sources;
2. Neutral sources; and
3. Marketer dominated sources.

If perceived reputation has an influence on consumer trust in e-retailing then second-hand information is supposed to have an influence on consumer trust in e-retailing. This is going to be tested on the basis of sub-hypotheses 6a-b

H<sub>6a</sub>: Positive information from consumer dominated sources increases consumer trust in e-retailing

H<sub>6b</sub>: Positive information from neutral dominated sources increases consumer trust in e-retailing

Because it is not very likely that e-retailers will spread negative information about e-retailing the third hypothesis concerning information from marketer dominated sources need to be somewhat different than the two first. It is more likely that just the lack of positive

information from marketer-dominated sources negatively influences consumer trust in e-retailing. This argumentation has led to hypothesis 6c.

H<sub>6c</sub>: Lack of information from marketer-dominated sources reduces consumer trust in e-retailing

### **2.2.2. Perceived Investment**

Perceived organizational investment is the perceived amount of resources a seller has invested in his business. Perceived investment is believed to have an influence on consumer trust in e-retailing. The higher the losses a seller will incur if he violates consumer trust, the less likely he is to actually violate consumer trust and hence the higher consumers' perceived trustworthiness of the seller (Javenpaa and Tractinsky, 1999; Ganesan, 1994). This has led to the formulation of hypothesis 7.

H<sub>7</sub>: The higher the perceived organizational investment of e-retailers is, the more likely consumers are to trust in e-retailing

### **2.2.3. Perceived Similarity**

Perceived similarity means that one perceives the other as being similar to oneself. Perceived similarity is believed to have a positive influence on trust, because people grouped together tend to have the same goals and values and therefore, tend to perceive each other positively. Thus a consumer who perceives a merchant to be similar to him/herself will be more likely to trust this merchant (McKnight et al, 1998; Brehm and Kassin, 1996). This argumentation forms the basis for hypothesis 8.

H<sub>8</sub>: The higher the perceived similarity between e-retailers and the consumer, the more likely consumers are to trust in e-retailing

### **2.2.4. Perceived Normality**

Perceived normality is defined as the consumer's perception that things are normal or 'common'. Situational normality involves a properly ordered setting that seems likely to make a successful interaction possible. An individual who perceives a situation as being normal will feel more comfortable and hence will be more trustful toward the other party (McKnight et al, 1998). These arguments led to the formulation of hypothesis 9.

H<sub>9</sub>: The higher the perceived normality of buying online is, the more likely consumers are to trust in e-retailing

### **2.2.5. Perceived control**

Deutsch (1958) defines control as "the consumer's perceived power to influence the other person's outcome and hence to reduce any incentive he may have to engage in untrustworthy behavior". Das and Teng (1998) and McKnight et al (1998) have identified three control mechanisms, i.e. regulations, guarantees, and legal recourse, which increase consumers' perceived control and hence their confidence in e-retailing. When a consumer has some power to influence the outcome of the e-retailer, he is more likely to expect trustworthy behavior and thus, to trust the other person (Deutsch, 1958; Young and Wilkinson, 1989). This leads to the formulation of hypothesis 10.

H<sub>10</sub>: The higher perceived control, the more likely consumers are to trust in e-retailing

## **2.2.6. Perceived Familiarity**

Familiarity is the phenomenon that the more often people are exposed to a certain stimulus, the more positively they will evaluate it (Brehm and Kassin, 1996), and thus trust it. Familiarity is not the same as experience over time. Experience is the active interaction with a process, while familiarity is the mere exposure to something. Hypothesis 11 shows the proposed relationship of familiarity and trust.

H<sub>11</sub>: The higher the familiarity with e-retailing is, the more likely consumers are to trust in e-retailing

## **2.3. Experience-based factors**

Experience is here defined as first-hand knowledge. First-hand knowledge is accumulated through active participation of the consumer in the online buying process (Wordsmyth the educational dictionary, 1999). The following three experience-related aspects are important with respect to trust.

1. Experience over time;
2. Satisfaction;
3. Communication.

### **2.3.1. Duration of Experience**

Several scholars (McKnight et al, 1998; Ganesan, 1994; Cheskin Research and studio Archetype/Sapient, 1999) have proposed that trust develops over time as consumers build trust-relevant knowledge through experience with e-retailing. This argument leads to hypothesis 12.

H<sub>12</sub>: The longer consumers have experience with e-retailing, the more likely consumers are to trust in e-retailing

### **2.3.2. Satisfaction and Experience**

Of course, trust doesn't build from experience alone. The perceived satisfaction with past outcomes is also very important (Ganesan, 1994). People, who have experience with buying online and have positive experiences, therefore view e-retailing as being trustworthy. This leads to hypothesis 13.

H<sub>13</sub>: The more positive experiences consumers have with e-retailing, the more likely they are to trust e-retailing

### **2.3.3. Communication**

According to several scholars, communication plays an important role in establishing trust (Anderson and Weitz, 1992; Loomis, 1959, Deutsch, 1958; Morgan and Hunt, 1994). In this research communication is defined as the formal and informal sharing of relevant, reliable and timely information between seller and customer (Morgan and Hunt, 1994). According to Loomis (1959) and Deutsch (1958) a well functioning communication system contains communication about expectations, intentions, retaliation ("expression of one's planned reaction to violations of one's expectations" (Deutsch, 1958)) and absolution ("expression of means of restoring co-operation after a violation of one's expectation has occurred" (Deutsch, 1958)).

These four elements have a positive influence on trust and thus the lack of the communication of these elements might to a large extent hinder the development of trust and therefore be a reason for consumer distrust in e-retailing. Hypotheses 14 have been developed to test this.

H<sub>14</sub>: Good communication of the seller's expectations, intentions, retaliation, and absolution increases customer trust in e-retailing

## **2.4. Knowledge-based factors**

Knowledge-based trust as defined in this paper is different from experience-based trust, because knowledge is seen more in the sense of 'technical' knowledge. Technical knowledge can be divided into knowledge about information practices and security technology.

### **2.4.1. Information practices**

People who have knowledge about information practices know whether it is possible for a seller to retrieve certain information from certain sources (Milne and Boza, 1999). It is thought that consumers who are not aware of what is possible will be more trustful. This argument is the basis for hypothesis 15.

H<sub>15</sub>: The less knowledge of information practices consumers have, the more they will trust in e-retailing

### **2.4.2. Security technology**

An individual who has knowledge about security technology also has knowledge about how the security aspects (integrity, confidentiality, etc.) can be technically guaranteed. Thus, such people are able to check for features that indicate that an e-retailer's website is secure. Hence, it is expected that people with this knowledge are more confident with regard to buying online and trust e-retailers more. To test this argument, hypothesis 16 is developed.

H<sub>16</sub>: Knowledge about technical security aspects increases consumer trust in e-retailing

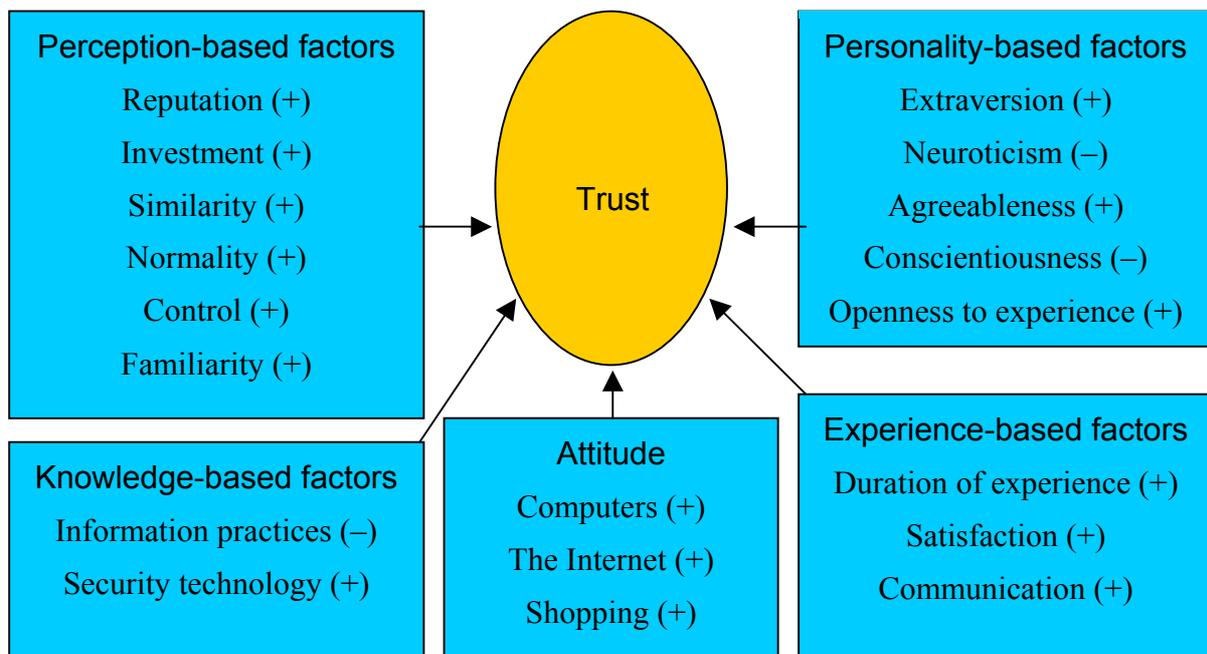
## **2.5. Attitude**

Attitude can be defined as the evaluation of entities (Gilbert et al., 1998). Consumer's attitude towards computers (Javenpaa and Tractinsky, 1999), the Internet and shopping are proposed to have an influence on trust in an Internet store. These arguments lead to the formulation of hypothesis 17, 18 and 19.

H<sub>17</sub>: Positive attitudes towards computers increase consumer trust in e-retailing

H<sub>18</sub>: Positive attitudes towards the Internet increase consumer trust in e-retailing

H<sub>19</sub>: Positive attitudes towards shopping increase consumer trust in e-retailing



*Figure 1: Psychological factors that influence consumer trust*

Category	Factor	Hypothesis
Personality	Extraversion	H <sub>1</sub> Extrovert consumers are more likely to trust e-retailing
	Neuroticism	H <sub>2</sub> Consumers high in the personality trait 'neuroticism' are less likely to trust e-retailers
	Openness to experience	H <sub>3</sub> Consumers high in the personality trait 'openness to experience' are more likely to trust e-retailing
	Agreeableness	H <sub>4</sub> Consumers high in the personality trait 'agreeableness' are more likely to trust e-retailing
	Conscientiousness	H <sub>5</sub> Consumers low in the personality trait 'conscientiousness' are more likely to trust e-retailing
Perception	Reputation	H <sub>6</sub> The better the perceived reputation of e-retailers is, the more like consumers are to trust e-retailing
	* Consumer dominated	H <sub>6a</sub> Positive information from consumer dominated sources increases consumer trust in e-retailing
	* Neutral sources	H <sub>6b</sub> Positive information from neutral dominated sources increases consumer trust in e-retailing
	* Marketer dominated	H <sub>6c</sub> Lack of information from marketer dominated sources reduces consumer trust in e-retailing
	Investment	H <sub>7</sub> The higher the perceived organizational investment of e-retailers is, the more likely consumers are to trust in e-retailing
	Similarity	H <sub>8</sub> The higher the perceived similarity between e-retailers and the consumer, the more likely consumers are to trust in e-retailing
	Normality	H <sub>9</sub> The higher the perceived normality of buying online is, the more likely consumers are to trust in e-retailing
	Control	H <sub>10</sub> The lack of perceived control reduces consumer trust in e-retailing
Familiarity	H <sub>11</sub> The higher the familiarity with e-retailing is, the more likely consumers are to trust in e-retailing	
Experience	Duration of experience	H <sub>12</sub> The longer consumers have experience with e-retailing, the more likely consumers are to trust in e-retailing
	Satisfaction	H <sub>13</sub> The more positive experiences consumers have with e-retailing, the more likely they are to trust e-retailing
	Communication	H <sub>14</sub> Good communication of the seller's expectations, intentions, retaliation, and absolution increases customer trust in e-retailing

Knowledge	Information practices	H <sub>15</sub>	The less knowledge of information practices consumers have, the more they will trust in e-retailing
	Security aspects	H <sub>16</sub>	Knowledge about technical security aspects increases consumer trust in e-retailing
Attitude	Computers	H <sub>17</sub>	Positive attitudes towards computers increase consumer trust in e
	The internet	H <sub>18</sub>	Positive attitudes towards the Internet increase consumer trust in e
	Shopping	H <sub>19</sub>	Positive attitudes towards shopping increase consumer trust in e

*Table 1: Overview*

*of*

*hypotheses*

### 3. Research Methodology

The sampling frame will consist of app. 1000 US students. US students were chosen as the research population because they have (in contrast to e.g. Europeans) unlimited, free access to the Internet and are rather familiar with the medium through their studies. Also, many e-retailers target the young population (e.g. CD shops like CD Now) and the student population (e.g. book shops like Amazon.com). In addition, technical, logistical and payment issues have reached the most advanced state in the US e-retailing market.

A questionnaire will be administered to these students. All constructs mentioned in the hypotheses are being measured with the help of this questionnaire. All items are measured on a 5-point Likert scale. Table 2 presents the list of constructs used in this research ordered by hypothesis and the references used. Pre-tested and validated instruments or items were used where available. Otherwise, items were created by the authors to measure the construct. The existing literature on these constructs was used as a guide to formulate items. Two or more items, some of which are reversely scored to keep the attention of the participant, measure each construct. Reliability will be tested using Cronbach's alpha.

Hypothesis	Construct	Number of items	References
H1	Extraversion	8	Benet-Martinez, 1991
H2	Neuroticism	8	Benet-Martinez, 1991
H3	Agreeableness	9	Benet-Martinez, 1991
H4	Conscientiousness	9	Benet-Martinez, 1991
H5	Openness to Experience	10	Benet-Martinez, 1991
H6	Reputation	7	Doney and Cannon, 1997; Javenpaa and Tractinsky, 1999; Ganesan, 1994; some created by authors
H6a	Information from consumer dominated sources	2	Created by authors
H6b	Information from neutral sources	2	Created by authors
H6c	Lack of information from marketer dominated sources	3	Created by authors
H7	Perceived investment	4	Doney and Cannon, 1997; Javenpaa and Tractinsky, 1999; Smith and Barclay, 1997; some created by authors
H8	Perceived similarity	4	Doney and Cannon, 1997; some created by the authors
H9	Perceived normality	3	Created by the authors
H10	Perceived control	4	Created by the authors

H11	Perceived familiarity	4	Carbirino and Johnson, 1999; some created by the authors
H12	Duration of experience	3	Doney and Cannon, 1997; Milne and Boza, 1999; Ganezan, 1994
H13	Satisfaction	3	Garbarino and Johnson, 1999; Ganesan, 1994
H14	Communication of expectations, intentions, retaliation, absolution	6 3 5 2	Ganesan, 1994; some created by the authors
H15	Knowledge of information practices	5	Created by the authors
H16	Knowledge about security technology	4	Created by the authors
H17	Attitude towards computers	3	Jarvenpaa and Tractinsky, 1999; some created by the authors
H18	Attitude towards the Internet	3	Jarvenpaa and Tractinsky, 1999; some created by the authors
H19	Attitude towards shopping	4	Jarvenpaa and Tractinsky, 1999; some created by the authors

*Table 2: Constructs measured by the questionnaire*

## 4. Pilot Research

A pilot study for the research has already been carried out in the Netherlands. Data of 107 students was collected. The data was collected using the questionnaire.

The mean of 2.792 is significantly smaller than the “neutral” level of 3 (at  $\alpha = 0.05$ ). From this, it can be concluded that the consumers asked in the Netherlands tend towards being slightly distrustful of e-retailing.

Table 3, below, shows the Cronbach’s alpha values for each of the constructs used in this research. According to Nunally (1967) an alpha of 0.50 or higher indicates a sufficient level of internal reliability.

The construct communication independent from the buying process was created after calculating the internal reliability of the construct communication of expectations. Further investigation had show that the construct communication of expectations was two-dimensional, and thus is had low internal reliability. To combat this, the new construct was created.

Construct	Items	Alpha
Trust	7	0.71
Extraversion	8	0.81
Neuroticism	8	0.73
Agreeableness	9	0.68
Conscientiousness	9	0.72
Openness to experience	10	0.73
Reputation	6	0.69
Information consumer dominated sources:		
Word of mouth	1	Not applicable
Friend/relatives	1	Not applicable
Information neutral sources	2	0.50
Information marketer dominated sources	2	0.65
Investment	2	0.34
Similarity	3	0.64
Normality	2	0.42
Control	5	0.51
Familiarity	3	0.52

Knowledge of information practices	4	Not applicable
Knowledge of security technology	3	Not applicable
Attitude towards computers	3	0.75
Attitude towards the internet	3	0.74
Attitude towards shopping	4	0.83
Duration of experience	3	0.87
Satisfaction	3	0.89
Communication indep. of buying process	4	0.63
Communication of expectations	2	0.52
Communication of intentions	3	0.60
Communication of retaliation	5	0.66
Communication of absolution:		
Construct 1	1	Not applicable
Construct 2	1	Not applicable

*Table 3: Constructs with corresponding Cronbach's alpha values*

While testing for multicollinearity, only the constructs attitude towards computers and attitude towards the Internet should be combined as they had a correlation coefficient of 0.77. The construct attitude consists of 6 items, the 3 items used to measure attitude towards computer and the 3 items used to measure attitude towards the Internet. The calculated Cronbach's alpha is 0.80.

In the pilot research two regression models were calculated. The first model contained the constructs that are applicable to all participants. The second model contained the constructs that are only applicable to the participants who have bought or considered buying, thus have some experience with e-retailing. The two models are described in figure 2.

The advantage of these two models is that no data will be lost because model 1 uses all the available data. The drawback is that not all constructs can be regressed on trust at the same time.

This paragraph will offer and interpret the results of the conducted regression analyses. Model 1 includes all the personality-based constructs, the perception-based constructs, the knowledge-based constructs, the attitude constructs and the experience-based construct, experience over time in the regression analysis against the dependent variable trust. Next the results of the regression analysis of model 2, which includes all the experience-based constructs except for the construct measuring duration of experience, will be discussed.

$$\begin{aligned}
 & \text{Model 1} \\
 & \text{Trust} = \\
 & a + b_1 \text{Extraversion} + b_2 \text{Neuroticism} + b_3 \text{Ageeableness} + b_4 \text{Conscientiousness} + b_5 \text{Openness} \\
 & \text{to experience} + b_6 \text{Reputation} + b_7 \text{Word of mouth} + b_8 \text{Friends and relatives} + b_9 \text{Neutral} \\
 & \text{sources} + b_{10} \text{Marketer dominated sources} + b_{11} \text{Investment} + b_{12} \text{Similarity} + b_{13} \text{Normality} + \\
 & b_{14} \text{Control} + b_{15} \text{Familiarity} + b_{16} \text{Experience} + b_{17} \text{Knowledge about information practices} + \\
 & b_{18} \text{Knowledge about security technology} + b_{19} \text{Attitude} + b_{20} \text{Attitude towards shopping}
 \end{aligned}$$

$$\begin{aligned}
 & \text{Model 2} \\
 & \text{Trust} = \\
 & a + b_1 \text{Satisfaction} + b_2 \text{Communication independent of buying process} + b_3 \text{Communication of} \\
 & \text{expectations} + b_4 \text{Communication of intentions} + b_5 \text{Communication of retaliation} + \\
 & b_6 \text{Communication of absolution 1} + b_6 \text{Communication of absolution 2}
 \end{aligned}$$

*Figure 2: Regression models*

## **4.1 Results**

The results of model 1 can be seen in table 4. From the results of the regression analysis in table 4 it becomes clear that model 1 contains seven statistically significant factors at a 0.10 level. These are: neuroticism, information from friends and relatives, word of mouth, perceived similarity, perceived normality, perceived control and experience over time.

The F-ratio of the regression model 1 is 6.878 and statistically significant ( $\rho < 0.01$ ). The R Square of the regression is 0.638.

Thus model 1 suggests that personality-based, perception-based and experience-based factors have a statistically significant effect on e-retailing.

Model 1	Std. error	Std. b	Sig.
Constant	1.150	0.972	0.400
Extraversion	0.077	-0.038	0.640
Neuroticism	0.086	-0.141	0.082*
Agreeableness	0.104	-0.004	0.962
Conscientiousness	0.102	-0.026	0.775
Openness to experience	0.101	0.124	0.130
Reputation	0.110	0.150	0.139
Information from friends and relatives	0.063	0.152	0.078*
Word of mouth	0.034	0.171	0.031**
Information from neutral sources	0.068	0.116	0.195
Lack of information from marketer dominated sources	0.055	-0.075	0.376
Investment	0.061	0.052	0.500
Similarity	0.080	0.182	0.052*
Normality	0.069	0.202	0.017**
Control	0.110	0.237	0.010***
Familiarity	0.069	0.101	0.249
Knowledge about information practices	0.062	0.072	0.356
Knowledge about security technology	0.057	0.021	0.782
Attitude toward the internet & computers	0.067	0.010	0.913
Attitude towards shopping	0.050	0.055	0.483
Experience over time	0.074	0.163	0.064*
F-ratio	6.878		
R square	0.638		

Table 4: Results regression model 1

\* simplification for  $\alpha < 0.1$

\*\* simplification for  $\alpha < 0.05$

\*\*\* simplification for  $\alpha < 0.01$

From the results of the regression analysis in table 5 it becomes clear that model 2 contains two statistically significant factors at a 0.05 level, namely satisfaction and communication independent of the buying process. The F-ratio of regression model 2 is 2.546 and only marginally significant ( $p < 0.1$ ). The R Square is 0.641.

Model 2	Std. b	Std. error	Sig.
Constant	1.080	0.941	0.278
Satisfaction	0.546	0.169	0.034*
Communication independent of buying process	0.539	0.254	0.041*
Communication of expectations	-0.083	0.121	0.673
Communication of intentions	-0.303	0.191	0.224
Communication of retaliation	-0.102	0.307	0.687
Communication of absolution 1	0.219	0.137	0.344
Communication of absolution 2	-0.184	0.113	0.370
F-ratio	2.546		
R Square	0.641		

Table 5: Results regression model 2

\* simplification for  $\alpha < 0.1$

#### 4.2.1 Personality factors

The only personality factor that has a statistically significant influence on trust is neuroticism. The hypothesized negative relationship between trust and neuroticism ( $b = -0.141$ ) can be supported at a 0.1 level. Thus, consumers that can be described as neurotic tend to distrust e-retailing more.

#### 4.2.2 Perception based factors

There are five perception based factors that have a statistically significant influence on trust, namely information from friends and relatives, word of mouth, perceived similarity, perceived normality and perceived control.

Second-hand information consists of the following three factors: information from consumer dominated sources, divided in the two constructs information from friends and relatives and word of mouth, information from neutral sources and information from marketer dominated sources.

The constructs information from friends and relatives and word of mouth have a significant influence on trust at a level 0.1. Thus hypothesis 6a is supported: The opinions of friends and relatives about e-retailing as well as information about e-retailing gathered from someone who has actual experience with buying online have a significant influence on consumer trust in e-retailing.

Furthermore, the influence of consumers' perceived similarity of e-retailers to him/herself is statistically significant ( $p = 0.052$ ,  $b = 0.182$ ). Therefore, hypothesis 8 is supported: A consumer who perceives e-retailers to have different goals and values to him/herself will be more likely to distrust e-retailers.

Moreover, normality has an influence on the dependent variable trust at a significance level of 0.05 ( $b = 0.202$ ). Thus, hypothesis 9 is supported. However, in the previous chapter it was stated that the internal reliability of the construct normality is rather low (0.42). Therefore the results of the regression analysis should be interpreted with caution.

The factor control has an influence on the dependent variable trust at a statistical significance level of 0.01 ( $b = -0.237$ ). Therefore, hypothesis 10 is supported: The findings point towards a relationship between perceived control and trust in e-retailing. It seems that consumers who perceive that they have no power to influence e-retailers outcome and hence reduce any incentive e-retailers may have to engage in untrustworthy behavior, will be distrustful against e-retailers.

### **4.2.3 Knowledge based factors**

None of the knowledge based factors proved to have a significant influence on the construct trust. That is, knowledge about information practices and knowledge about security technology have no influence on trust and hypothesis 15 and 16 can be rejected.

### **4.2.4 Attitude**

Contrary to a previous study conducted by Javenpaa and Tractinsky (1999) none of the attitude-based factors seems to have a significant influence on trust. Therefore, all hypotheses with respect to attitude, hypothesis 17, 18, and 19 can be rejected. The only "explanation" for this finding is that attitude toward computers, the Internet and shopping is just not related to trust with respect to e-retailing.

### **4.2.5 Experience based factors**

The influence of the experience-based factors on trust/distrust was analyzed using both model 1 and model 2. Model 1 included experience over time, the influence of the other experience-based factors was analyzed using model 2 and will be discussed below.

Duration of experience has a significant influence on trust ( $p < 0.1$ ,  $b = 0.163$ ). Hypothesis 12 is supported. Thus the more experience a consumer has with buying on-line, the more he/she trusts e-retailing.

### **4.2.6 Satisfaction**

The factor satisfaction has a statistically significant influence on the dependent variable trust/distrust ( $p < 0.05$ ,  $b = 0.169$ ). Hence, hypothesis 13 is supported. This means that people who are satisfied with the outcome of the online buying process are more trustful towards e-retailers.

### **4.2.7 Communication**

Communication is divided in five different constructs, communication independent of the buying process, communication of expectation, intentions, retaliation and absolution. However, only the

construct communication independent of the buying process proved to have a significant influence on trust. The construct communication between buyer and seller independent of the buying process is statistically significant at a 0.05 level ( $b = 0.254$ ).

The reason why communication seems to have an influence on the dependent variable trust in contrast to the other four communication related constructs can be due to the fact that communication is more important in establishing trust before the actual purchase is made. Once the amount of trust is high enough for a consumer to actually buy something from an Internet store communication between buyer and seller directly related to the buying process does not have a significant influence on trust.

### 4.3 Conclusion

Figure 3 gives a summarizing overview of the factors that have, based on the literature and the conducted pilot study, a significant influence on consumer trust in e-retailing.

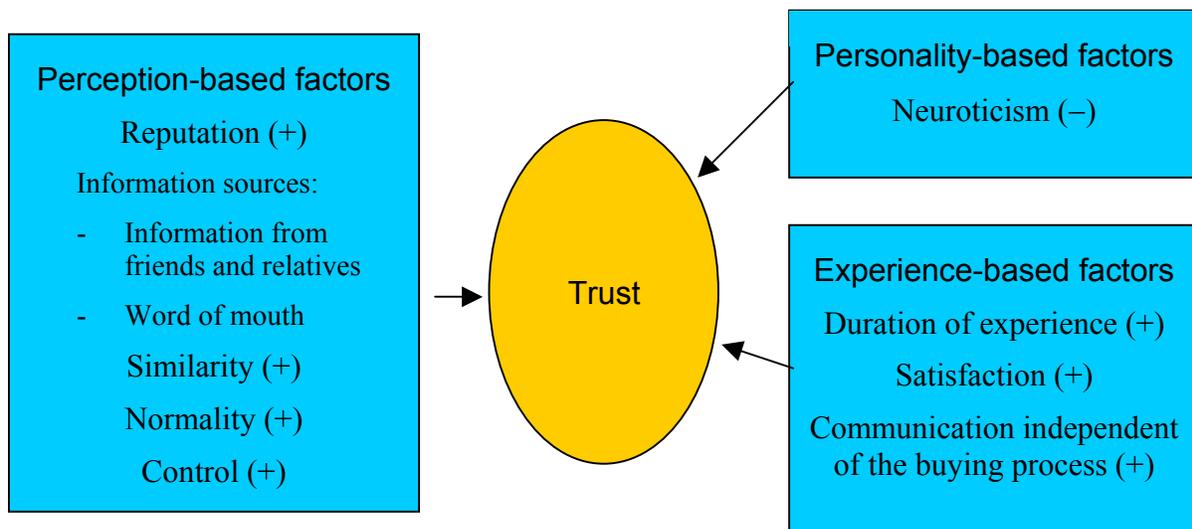


Figure 3: Results of pilot study

## References

- Anderson, E., and Weitz, B. (1992): *The Use of Pledges to Build and Sustain Commitment in Distribution Channels*, in *Journal of Marketing Research*, Vol. 24, pp. 18-24
- Angenent, H. (1998): *Opvoeding en persoonlijkheidsontwikkeling*, Uitgeverij Intro, 8th edition, Baarn
- Benet-Martinez and O. P. John (1991): *Big Five in U.S. Hispanic and Spanish Samples*, in *Journal of Personality and Social Psychology*, vol. 6?, pp. 7??-749
- Bigley, G. A., and Pearce, J. L. (1998): *Straining for shared meaning in organization science: problems of trust and distrust*, in *Academy of Management Review*, vol. 23, no. 3, pp. 405-421
- Brehm and Kassin (1996): *Social Psychology*, Houghton, 1st edition, Boston
- Brown, R. H., Barram, D. J., Irving, L. (1995): *Privacy and the NII*, available at <http://www.ntia.doc.gov/policy/privwhitepaper.html>. Created 10/23/1995, accessed 22/02/2000.
- Carver, C. S. and M. F. Scheier (1992): *Perspective on personality*, Allyn and Bacon, 2nd edition, Boston
- Cheskin Research and Studio Archetype/Sapient (1999): *eCommerce Trust Study*, available at <http://www.studioarchetype.com/cheskin>, created 01/01/1999, accessed 02/02/2000.
- Clarke, R (1999): *Introduction to Dataveillance and Information Privacy, and Definitions of Terms*, available at <http://www.anu.edu.au/people/Roger.Clarke/DV/Intro.html>, created 16/09/1999, accessed 22/02/2000
- Clinton, J., and Gore, A. (1997): *A Framework for Global Electronic Commerce*, on <http://www.iitf.nist.gov/elecomm/ecommm.htm>, created 01/07/1997, accessed 22/02/2000.
- Cooper, C. L. (1975): *Theories of Group Processes*, John Wiley & Sons, Ltd. 1st edition, London
- Costa, P. T. and McCrae, R. (1992): *Revised NEO Personality Inventory (NEO PI-R) and NEO Five-factor Inventory (NEO FFI): professional manual*, Odessa, 1st edition
- Culnan, M. J., and Armstrong, P. K. (1999): *Information Privacy Concerns, Procedural Fairness, and Impersonal Trust: An empirical Investigation*, in *Organization Science*, vol. 10, no. 1, pp. 104-114
- Das, T. K., and Teng, B. (1998): *Between trust and control developing confidence in partner cooperation in alliances*, in *Academy of Management Review*, vol. 23, no. 3, pp. 491-512
- Deutsch, M. (1958): *Trust and suspicion*, in *Conflict resolution*, vol. 2, no. 4, pp.265-279
- Dibb, S., Simkin, L., Pride, W.M., and Ferrell, O.C. (1994): *Marketing concepts and strategies*, Houghton Mifflin Company, 2nd edition, Boston
- Doney, P. M., and Cannon, J.P. (1997): *An examination of the Nature of Trust in Buyer-Seller Relationships*, in *Journal of Marketing*, vol. 61, pp. 35-51
- Dontje, M. J., and Olde Olthof, C. F. (1999): *No trade without trust*, in *Compact*, vol. 6, pp.11-21
- El Aoufi, S. (1999): *Risico communiceren op het net: 'Who's who' op het net*, in *Informer*, maart, pp. 9-13
- Ferraro, A. (1998): *Electronic Commerce: The Issues and Challenges to Creating Trust and a Positive Image in Consumer Sales on the World Wide Web*, available at [http://www.firstmonday.dk/issues/issue3\\_6/ferraro/index.html](http://www.firstmonday.dk/issues/issue3_6/ferraro/index.html), created unknown, accessed 08/02/2000.

- Ford, M. D. (1998): *Identity Authentication and 'E-Commerce'*, available at <http://www.law.warwick.ac.uk/jilt/98-3/ford.html>, created 30/11/2000, accessed 07/02/2000.
- Garbarino, E., and Johnson, M. S. (1999): *The Different Roles of Satisfaction, Trust, and Commitment in Customer Relationships*, in *Journal of Marketing*, vol.63, pp. 70-87
- Ganesan, S. (1994): *Determinants of Long-Term Orientation in Buyer-Seller Relationships*, in *Journal of Marketing*, 58, pp. 1-19
- Gilbert, Daniel T., Susan T. Fiske, Gardner Lindzey (1998), *The handbook of social psychology*, 4<sup>th</sup> ed., Boston, Mass.: McGraw-Hill.
- Gleitman, H (1995): *Psychology*, W. W. Norton & Company, Inc., 4<sup>th</sup> edition, New York
- Green, H., Yang, C., Judge, P. C. (1998): *Information Technology: The internet a little net privacy, please*, in *Business Week*, March 16.
- Hoffman, D. L., Novak, T. P., and Peralta, M. (1999): *Building Consumer Trust Online: How merchants can win back lost consumer trust in the interests of e-commerce sales*, in *Communications of the ACM*, vol. 42, no. 4, pp. 80-85
- Howard, D. J. (1998): *An Analysis of Security Incidents on the Internet 1989 – 1995*, on <http://www.cert.org/research/JHThesis/Word6>, created 07/05/1998, accessed 18/02/2000
- Huizer, E. (1998): *Beveiliging op het Internet*, on <http://nieuws.surfnet.nl/nieuws/smn-archief/achtergrond/jg97-98/internet5a.html>, created 26/03/1998, accessed 02/23/2000
- IDC Research (19??): *One Quarter of Europeans Now Online*, available at [http://www.nua.ie/surveys/index.cgi?f=VS&art\\_id=905355527&rel=true](http://www.nua.ie/surveys/index.cgi?f=VS&art_id=905355527&rel=true), created 14/01/2000, accessed 02/02/2000.
- Jak, M., and Wieringa, D. (1998): *Webtrust: Niet alleen een standaard voor veilige websites, maar ook een uitdaging voor accountants en IT-auditors*, in *de EDP-Auditor*, 4, pp. 28-32
- Janson, P., and Waidner, M. (1996): *Electronic Payment Systems*, in *Datenschutz und Datensicherheit*, 6, pp. 350-361
- Javenpaa, S. L., and Tractinsky, N. (1999): *Consumer trust in an Internet store: A Cross-Cultural Validation*, available at <http://www.ascusc.org/jcmc/vol5/issue2/javenpaa.html>, created 01/11/1999, accessed 22/02/2000.
- Kamins, M. A., Folkes, V. S., Perner, L. (1997): *Consumer Responses to Rumors: Good News, Bad News*, in *Journal of Consumer Psychology*, vol. 6, pp. 165-187
- Laudon, K. C., and Laudon, J. P. (1998): *Management Information Systems, Organization and Technology*, Prentice Hall, 5th edition, New Jersey
- Lazaric, N., and Lorenz, E. (1998): *Trust and Economic Learning*, Edward Elgar Publishing Limited, 1st edition, Cheltenham
- Lewicki, R. J., and Mcallister, D. J., Bies, R. J. (1998): *Trust and Distrust: new relationships and realities*, in *Academy of Management Review*, vol. 23, no. 3, pp. 438-458
- Lewis, J. D., and Weigert, A. J. (1985): *Trust as a social reality*, in *Social Forces*, vol. 63, pp.957-985
- Loopez-Bassols, V. (1999): *Revised report on international and regional bodies: Activities and initiatives in electronic commerce*, on [Http://www.oecd.org//dsti/sti/it/ec/act/Paris\\_ec/pdf/intbod\\_e.pdf](Http://www.oecd.org//dsti/sti/it/ec/act/Paris_ec/pdf/intbod_e.pdf), created 06/10/1999, accessed 01/10/2000
- Loomis, J. L. (1959): *Communication, the Development of Trust, and Cooperative Behavior*, in *Human Relations*, vol. 12, 305-315

- McKnight, D. H., Cummings, L. L., and Chervany, N. L. (1998): *Initial trust formation in new organizational relationships*, in *Academy of Management Review*, vol. 23, no.3, pp. 473-490
- Milne, G. R., and Boza, M. (1999): *Trust and concern in consumers' perceptions of marketing information management practices*, in *Journal of Interactive Marketing*, vol. 13, no.1, pp. 5-24
- Mitra, K., Reiss, M. C., and Capella, L. M. (1999): *An examination of perceived risk, information search and behavioral intentions in search, experience and credence services*, in *The Journal of Services Marketing*, vol. 13, no. 3, pp. 208-228
- Morgan, R. M., and Hunt, S. D. (1994): *The Commitment-Trust Theory of Relationship Marketing*, in *Journal of Marketing*, Vol. 58, pp. 20-38
- OECD (1997): *Business-to-consumer electronic commerce survey of status and issues*, available at <http://www.oecd.org/dsti/sti/it/ec/prod/gd97219e.pdf>, created 10/04/1998, accessed 02/02/2000.
- Olson, B. D., and Suls, J. (1998): *Self-, other-, and ideal-judgements of risk and caution as a function of the five-factor model of personality*, in *Personality and Individual Differences*, 28, pp. 425-436
- PricewaterhouseCoopers LLP (1998): *The Technologies of Electronic Commerce: The integrity of Electronic Transactions and Digital Records for Tax Administration and Compliance*, available at [http://www.oecd.org/daf/fa/e\\_com/ectsg2.pdf](http://www.oecd.org/daf/fa/e_com/ectsg2.pdf), created 01/08/1998, accessed 02/02/2000.
- Rousseau, D. M., Sitkin, S. B., Burt, R. S., and Camerer, C. (1998): *Not so different after all: a cross-discipline view of trust*, in *Academy of Management Review*, Vol. 23, no. 3, pp. 393-404
- Sako, M., and Helper, S. (1998): *Determinants of trust in supplier relations: Evidence from the automotive industry in Japan and the United States*, in *Journal of Economic Behavior & Organization*, Vol. 34, 387-417
- Schiffman, L. G., and Lazar Kanuk, L. (1994): *Consumer Behavior*, Prentice-Hall, Inc., 5th edition, New Jersey
- Smith, J. B., and Barclay, D. W. (1997): *The effects of Organizational Differences and Trust on the Effectiveness of Selling Partner Relationships*, in *Journal of Marketing*, vol. 61, pp. 3-21
- Steinauer, D. D., Wakid, S. A., and Rasberry, S. (1997): *Trust and Traceability in Electronic Commerce*, in *StandardView*, Vol. 5, no. 4, pp. 118-125
- Trim, J., and Roos, P. (1998): *Veiligheid van elektronisch zaken doen*, in *IT-Monitor*, no. 3, pp. 8-9
- Wiersema, E. (1999): *Is de klant koning (van zijn gegevens)?*, in *Compact*, Vol. 26, no. 2-3, 1999, 197-201
- Wordsmyth the educational dictionary (1999): available at <http://www.wordsmyth.net>, created 02/12/1999, accessed 10/04/2000
- Yamagishi, T., and Yamagishi, M. (1994): *Trust and Commitment in the United States and Japan*, in *Motivation and Emotion*, vol. 18, no. 2, pp. 129-16
- Young, L. C., and Wilkinson, I. F. (1989): *The Role of Trust and Co-operation in Marketing Channels: A Preliminary Study*, in *European Journal of Marketing*, vol. 23, no. 2, pp. 109-121