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**The Importance of Initial Consumer Trust in B2C Electronic Commerce -
A Structural Equation Modeling Approach**

DISSERTATION

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Ewald A. Kalmbach

Klagenfurt, am 10. Juli 2004

“I have asked myself this question more than once in rereading what I have written on .. [trust], and I hasten to declare that I will not offer a definitive explanation of it in this .. [thesis]. The more one writes about this subject, the more the world becomes a term for something as unfathomable as it is all-pervasive. One can only explore it by establishing its indispensability in various contexts.”

(Erik H. Erikson, 1968, p. 9)¹

„Entgegen allen Erwartungen schnellten auch im letzten Weihnachtsgeschäft die Umsatzzahlen der Online-Händler in die Höhe: Nach Angaben des Hauptverbandes des Deutschen Einzelhandels (HDE) setzten die Internet-Retailer rund ums Christfest acht Milliarden Euro um – rund drei Milliarden mehr als im Vorjahr. Und obwohl die Prognosen der Marktforscher stark differieren, so sind sich die Experten doch über einen weiteren Anstieg einig. Doch während Amazon, Karstadt.de, Tchibo oder Weltbild Rekordergebnisse melden, kämpfen viele Online-Händler nach wie vor gegen Kaufbarrieren: ‚Der kritische Erfolgsfaktor im Online-Vertrieb ist das Vertrauen‘ erklärt Thomas Hessler, Vorstand der auf Online-Kooperations-Management spezialisierten Zanox.de AG...“

(Mirjam Müller, „Kampf den Kaufbarrieren“, Die Welt, 18. Februar 2003, S. 16, www.welt.de/webwelt/)

Abstract

With an increasing number of consumers using the Internet and more and more of them engaging in online shopping activities, B2C electronic commerce sales are on the rise and expected to grow continuously in the next years. However, the online retail market is currently dominated by a few, big and very successful vendors, while many new start-ups and smaller regional online retailers struggle hard to attract and retain customers. One key element in attracting new customers and convincing them to click the “order button” is the establishment of consumers’ trust in the online vendor. As a result, in this thesis, we have focused on three main question: 1) What are the major factors that influence the formation of consumers’ initial trust in a previously unknown online retail store? 2) What is the relative importance of initial consumer trust regarding consumers’ intention to transact with an unfamiliar online retail store? 3) Which measures may an online retail store employ to boost the establishment of consumers’ initial trust.

Consequently, this thesis presents an empirical study on consumers’ initial trust formation in an unfamiliar online retail store, grounded in a solid analysis of the state of the art of general trust literature, a conceptual meta-analysis of prior empirical research on online trust in B2C electronic commerce, an exploratory qualitative focus group study and a rigorous scale development with several pre-tests and a pilot study. The findings gathered, presented and

¹ The author replaced the word „identity“ with „trust“ and the word „book“ with „thesis“.

discussed in the course of this thesis provide a number of contributions to the existing body of online trust research. In addition, fellow researchers are provided with a rigorously validated measurement instrument covering 18 theoretical constructs. Furthermore, several managerial implications are drawn from our findings and suggestions for practitioners from the field of B2C electronic commerce are made regarding the opportunities of promoting initial consumer trust.

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List of Abbreviations

AGFI	Adjusted-Goodness-of-Fit-Index
AMOS	Analysis of Moment Structures (a statistical program)
ANOVA	Analysis of Variance
AVE	Average Variance Extracted
B2B	Business-to-Business
B2C	Business-to-Consumer
CFA	Confirmatory Factor Analysis
cf.	confer
CFI	Comparative-Fit-Index
CL	Comparison Level
CV	Control Variable
d.f.	Degrees of Freedom
DV	Dependent Variable
EFA	Exploratory Factor Analysis
e.g.	exempli gratia (for instance)
EQS	Equation-based Structural Program (a statistical program)
GFI	Goodness-of-Fit-Index
HCI	Human-Computer Interaction
i.e.	id est (that is to say)
IFI	Incremental-Fit-Index
ITS	Interpersonal Trust Scale
KS	Kolmogorov-Smirnov test
LISREL	Linear Structural Relationships (a statistical program)
MeV	Mediating Variable
MIS	Management Information Systems
ML	Maximum Likelihood
MLE	Maximum Likelihood Estimation
MoV	Moderating Variable
NFI	Normed-Fit-Index
NNFI	Non-Normed-Fit-Index
PC	Personal Computer
PCA	Principal Component Analysis

PLS	Partial Least Squares Graph (a statistical program)
RMSEA	Root Mean Square Error of Approximation
SPSS	Statistical Package for the Social Science (a statistical program)
SRMR	Standardized Root Mean Square Residual
SSL	Secure Socket Layers
WWW	World Wide Web
SEM	Structural Equation Modeling
SERVQUAL	Service Quality
SET	Social Exchange Theory
SMC	Squared Multiple Correlation
TAM	Technology Acceptance Model
TLS	Transport Layer Security
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
χ^2	Chi-square

1. Introduction

This chapter starts with a brief overview of the status quo of the rate of global and of Austrian Internet penetration, followed by a presentation of B2C electronic commerce growth trends in the USA and Europe, especially in Austria and its German-speaking neighbor countries Germany and Switzerland. Afterwards, the importance of consumer trust in electronic commerce will be discussed. Chapter one ends with an overview of the research questions investigated in this thesis, the applied research methodology, the research restrictions, the research significance and finally a summarizing outline of the thesis.

1.1. Business-to-Consumer Electronic Commerce: Development and Trends

In the year 1991 the US National Science Foundation, a major sponsor of the development of the Internet, lifted the restrictions on commercial usage and commercial traffic on the Internet, initiating the era of electronic business and electronic commerce. Soon after, the introduction of the World Wide Web (WWW)², as supplement service to the Internet, which enabled graphical representation of information content, cleared the way for the Internet to become a mass-medium (Roberts, 2003).

While by the end of the year 1995 the number of Internet users ranged slightly below 20 million people, mainly US-citizens (Chaffey, Mayer, Johnston and Ellis-Chadwick, 2001), the market research company NUA roughly estimated the number of worldwide Internet users at around 605.60 million people by September 2002, with approximately 191 million of them being European Internet users (NUA, 2002). eMarketer (2003a) even estimates that the number of European Internet users will reach 222.1 million by the end of the year 2004.

² In the course of this thesis we will generally use the term “Internet“ instead of explicitly referring to the “World Wide Web”. Although we recognize that the WWW is just one service of the Internet, next to e-mail, newsgroups, Internet Relay Chat and File Transfer Protocol, we will use the terms “Internet” and “WWW” interchangeably for the sake of simplicity.

This rapid rate of Internet-adoption also affected Austria. According to recent figures of the Austrian market research company Integral, the rate of Internet penetration in Austria reached 56 percent during the first quarter of the year 2004 (i.e., 56 percent of Austrians ages 14+ are using the Internet) (for a graphical overview of the Austrian rate of Internet penetration since the year 1996 see figure 1). A current desk-research based report by Fessel-GfK, published in June 2004, concluded that the Internet population in Austria has already reached 3.8 million users (in the same report Fessel-GfK calculated the number of Internet users in Germany to have reached 36.7 million and the number of Swiss Internet users to have reached 3.7 million people, see Fessel-GfK, 2004).

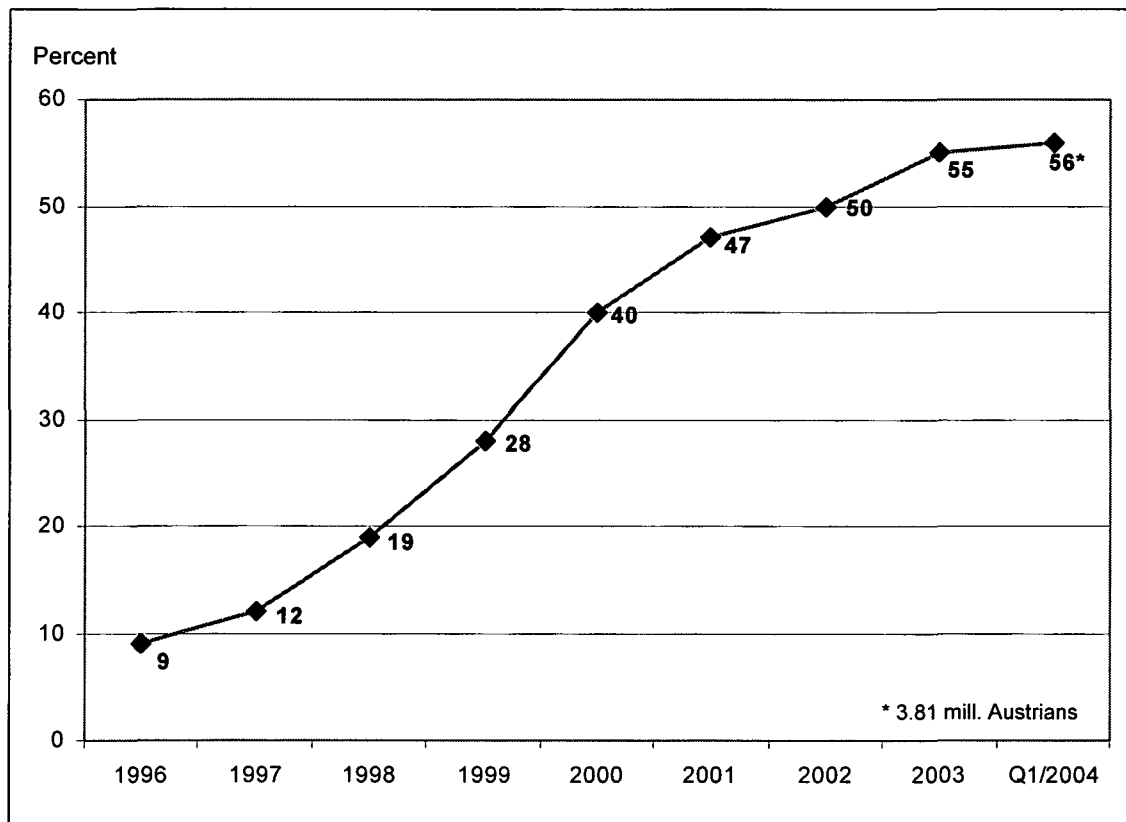


Figure 1. Internet Penetration in Austria.

Source: AIM - Austrian Internet Monitor, Q1 2004, <http://www.integral.co.at>.

With these high numbers of Internet users and the annual growth rates around the globe, numerous Web-vendors, online-only as well as offline retailers with newly created online outlets, have tried to capitalize on these new electronic retail markets, trying to follow such

successful online vendors like Amazon.com or Dell.com. Yet, after the initial, enormous electronic commerce³ euphoria passed in the year 2001, many of these newly established online retail stores ran out of business due to lack of customers.

However, since then global electronic commerce sales have been on the rise again. In the year 2002 US e-commerce retail sales exceeded \$45 billion due to the high growth rates (Regan, 2003). The Census Bureau of the US Department of Commerce (2002), comparing e-commerce retail sales in the third quarter of the year 2001 and the third quarter of the year 2002 reported an increase by 34.3 percent. In a more recent press release The Census Bureau of the US Department of Commerce (2004) stated that US retail e-commerce sales came to \$15.5 billion in the first quarter of the year 2004, rising again by 28.1 percent compared to the first quarter in the year 2003 (In the first quarter 2004, US retail e-commerce sales accounted for 1.9 percent of total US retail sales, according to the US Census Bureau of the US Department of Commerce, 2004). Many market research companies argue that this growth trend will continue in the next years. Jupiter Research (2004) for example estimates that US online retail sales will reach \$65 billion by the end of the year 2004, and that US e-commerce retail sales will constantly grow at an average annual rate of about 17 percent until the year 2008, by then topping \$117 billion (in the year 2008 this amount is estimated to account for 5 percent of total US retail sales). eMarketer (2003b) provided even higher estimates, expecting US online retail sales to reach already \$133 billion by the end of the year 2005.

According to eMarketer (2003c) the strong B2C e-commerce growth trend should be very similar in Europe, too. eMarketer recently published a report estimating online retail sales in Europe to top \$114 billion by the end of the year 2004, reaching \$178.6 billion in the year 2005 and subsequently \$243.4 billion in the year 2006. Regarding the number of online shoppers in Germanic countries (Germany, Austria and Switzerland) market research company Fessel-GFK (2003) reported that between April 2002 and April 2003 a total of 20 million Germans had purchased goods on the Internet, and Swiss WEMF (WorldSites, 2002)

³ If not explicitly stated otherwise we use the term “electronic commerce” in this thesis to refer only to transactions between companies and consumers, initiated, partly or fully conducted over the Internet. Other authors (e.g. Hermanns and Sauter, 2001, p. 25) have termed this variant of electronic commerce “business-to-consumer electronic commerce” or “B2C e-commerce”. Furthermore, we focus especially on the online retailing sector and the case of tangible products in this thesis. However, in general we also consider e-services and online banking as belonging to the category of B2C e-commerce.

found the number of Swiss Internet users who previously purchased something online and of those who plan online purchases in the near future to account for 1.77 million users in the German part of Switzerland in the year 2002. In Austria, the rate of online shoppers reached 1.78 million Austrians in the third quarter of the year 2003 (i.e., 48 percent of all Austrian Internet users ages 14+ at that time) (Austrian Internet Monitor, 2003) (see figure 2 for a graphical overview of the online shopping penetration in Austria).

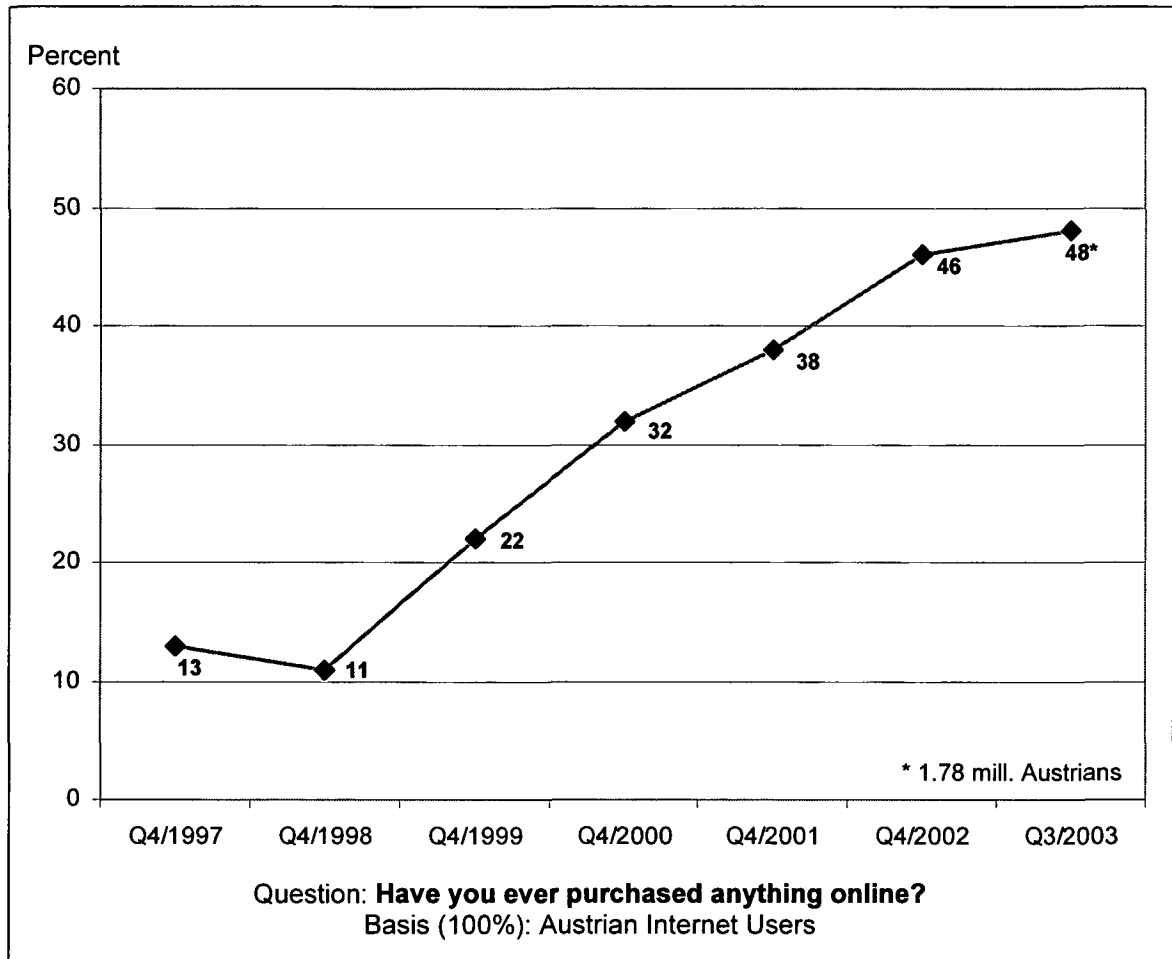


Figure 2. Online Shopping Penetration in Austria⁴.

Source: AIM - Austrian Internet Monitor, Q3 2003, www.integral.co.at.

⁴ However, these findings may be a bit too optimistic. In another, earlier report (Austrian Internet Monitor, 2001) Integral reported that by the year 2001 only three percent of all Austrians ages 14+ had purchased products online in the past. A Eurobarometer survey conducted for the European Commission in the year 2003 also indicated that only 17 percent of all Austrians ages 15+ had previously been engaged in shopping activities on the Internet (Eurobarometer, 2003). Given these varying figures it is hard to tell how many Austrian consumers really have conducted online purchases to date.

When it comes to online shopping Austrian consumers primarily purchase books, CDs, clothes and shoes, PC software and hardware, tickets for events, tickets for travels and book travel related services (Austrian Internet Monitor, 2000) (see figure 3 for an overview of the products purchased online by Austrian consumers).

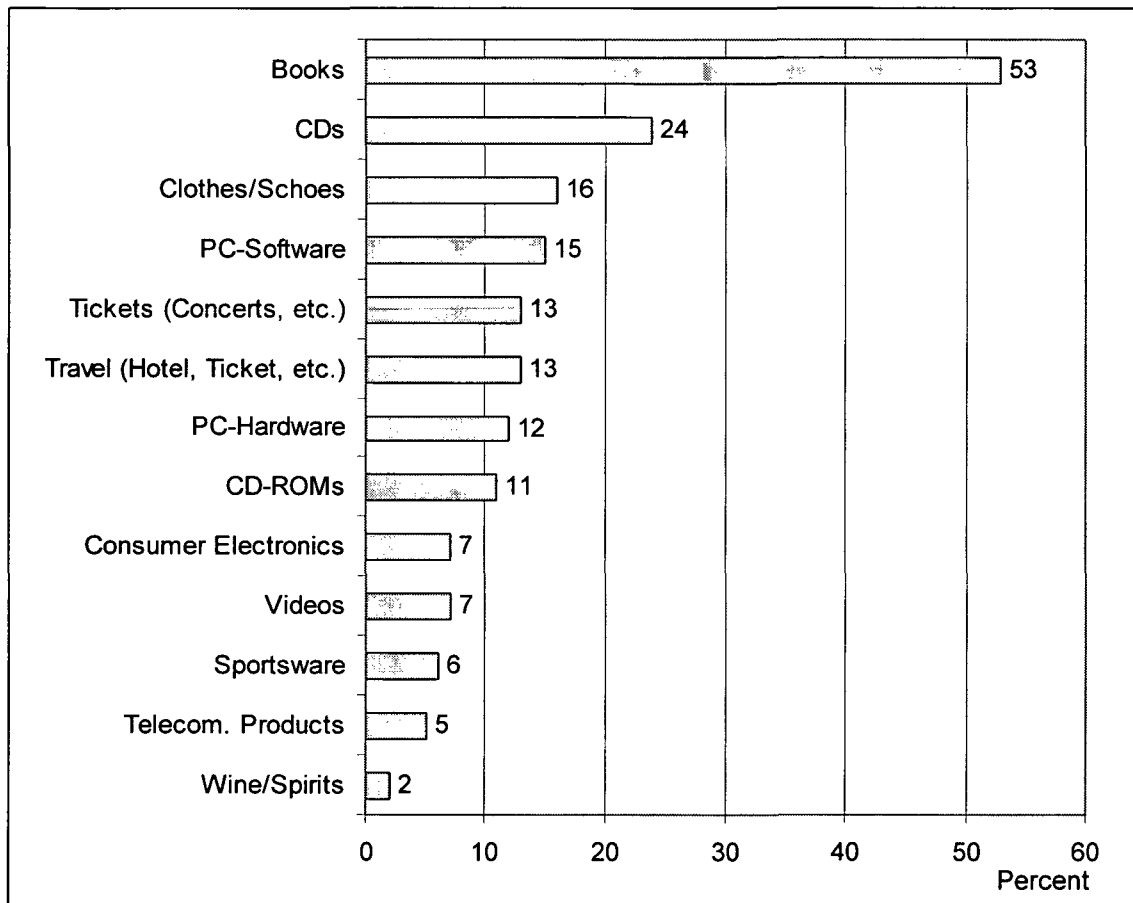


Figure 3. Products Purchased Online by Austrians.

Source: AIM - Austrian Internet Monitor, 2000, www.integral.co.at.

Looking at all these figures and the high growth rates the question is not anymore *if* consumers will adopt electronic commerce and online shopping, a question which many scholars focused on some years ago (e.g., de Ruyter, Wetzels and Kleijnen, 2001; Kollmann, 2001; Polatoglu and Ekin, 2001; Eastin, 2002), but the question is now *which* online vendors

and online service providers will be able to attract the increasing number of customers and will successfully compete in these new retail markets.⁵

1.2. Consumer Trust in Business-to-Consumer Electronic Commerce

“The point is that the Internet is a great enabler of consumer power. Consumers are more educated and more informed than ever before. Consumers now have more tools with which to verify a company’s claims or to seek out superior product and service options. These trends toward increasing customer power emphasize the need for trust building and where customer power is high firms will have to adopt trust based strategies or customers will move on to other suppliers.” (Glen L. Urban, in Petrovic et al., 2003, p. xvi)

Five years ago Hoffman, Novak and Peralta (1999, p. 80) analyzed the data of two large-scale surveys among US- and global Internet users, presenting the following conclusion: “The reason more people have yet to shop online or even provide information to Web providers in exchange for access to information, is the fundamental lack of faith between most businesses and consumers on the Web today. In essence, consumers simply do not trust most Web providers enough to engage in ‘relationship exchanges’ involving money and personal information with them.”

Since then, the situation seems to have improved but lack of trust in online shopping in general and in many online vendors still represents a barrier for many Internet users (e.g., McKnight et al., 2002). McKinsey analysts Dayal, Landesberg and Zeisser (2001) reported the findings of a study, claiming that only four percent of online users routinely register at websites, and at some sites two-thirds of those not registering report a lack of trust as one of their reasons. In the light of these findings Dayal et al. (2001) also drew the conclusion that it is lack of trust that paralyzes many potential online shoppers. Another US-survey by Consumer WebWatch (2002) gained a similar result with only 29 percent of all their respondents stating that they trust e-commerce websites. Emphasizing the importance of

⁵ In Austria the online retail market is dominated by a handful of big players. According the 1st wave 2004 of the Austrian Internet Radar (2004) Amazon.de/.at leads the Austrian online retail market in terms of user-visits with 958.000 visits, ahead of Eduscho.at with 878.000 visits, Quelle.at with 478.000 visits and Otto.at with 398.000 visits (i.e., visits in the last four weeks reported by the survey-respondents, n=5000).

vendor trustworthiness in the eyes of consumers, a recent survey by Cap Gemini Ernst & Young also indicated that online shoppers rank honesty, respect and reliability of the online vendor above low prices (Greenspan, 2002) (see also Cheskin Research, 2000; Consumer Internet Barometer, 2002; Eurobarometer, 2003, for similar findings emphasizing the importance of consumer trust in e-commerce).

However, consumers' fears about fraudulent online vendors seem not only to be triggered by strong media coverage of a handful of negative incidents. The US Federal Trade Commission (2004) reported in a current press release that in the year 2003 of approximately half a million consumer complaints concerning frauds, Internet-related complaints accounted for 55 percent of all these fraud reports. Consequently, consumers being very suspicious and careful when it comes to online shopping represents one of the reasons for the high rate of terminated online transactions. NetIQ (2004) estimated the cumulative loss of abandoned online "shopping carts" (i.e., terminated e-commerce transactions) between the year 1999 and 2004 up to \$173 billion. According to DoubleClick (2004), for every US-dollar sold in the online retail business 5 US-dollars were left in abandoned "shopping carts" and DoubleClick further calculated that non-buying visitors still represent an overwhelming majority of 95 percent of all website visitors.

Other reasons why many consumers perceive numerous risk of purchasing goods at an online vendor are not only the relative novelty of the Internet and electronic commerce but also the special characteristics of the Internet. Non-simultaneous exchange of goods and product delivery via postal mail is the norm because consumers and online vendors are usually located in different countries. In addition to the spatial and temporal separation, the consumers typically need to invest resources already before the purchase and before the online vendor has to perform (e.g., registering at the vendor's website and providing personal information such as name and postal address as well as sensible financial information such as a credit card number) (Einwiller, 2002; Grabner-Kräuter, 2002a). Furthermore, there is a high level of anonymity of online vendors and a lack of such traditional, offline reputational signals like tangible business premises and storefronts or visible sales-personnel. Except for certain "brick-and-click" online retailers there is also no opportunity to return merchandise to an offline outlet of the store in case of malfunction or dissatisfaction. Instead consumers are confronted with a website, a graphical interface, and some e-mail addresses, etc. making it often hard for the consumers to evaluate which company really operates the website

(Kaluscha and Grabner-Kräuter, 2003; Grabner-Kräuter and Kaluscha, 2003d). Online-only vendors may often also not have a lengthy history of prior transactions. In addition, legal policies governing e-commerce are partly still lacking and another country's jurisdiction may apply in case of lawsuits if the online vendor has its legal location not in the home-country of the consumer (Bhattacharjee, 2002; Einwiller, 2002). Furthermore, in electronic commerce there is a negative shift in terms of quality assessment of goods by the consumers. Quite often, due to the inability of the consumer to actually see, feel, smell or taste the product before the purchase "search qualities" may turn into "experience qualities" which the consumer may only assess when the product has already been delivered.⁶ Hence, the electronic environment makes it harder for the consumer to evaluate the quality of products prior to the purchase (Grabner-Kräuter, 2002a; Einwiller, 2002).

All these facets taken together make online shoppers highly selective when considering a purchase at an online vendor. Therefore, many scholars like Urban, Sultan and Qualls (2000, p. 39, p. 48) argue that "[c]onsumers make Internet buying decisions on the basis of trust" and that subsequently "trust will soon become the currency of the Internet". This view is shared by Keen (1997, p. 2) stating that "[t]rust is what the question of Internet security is really about: trust in contracting, payments, privacy and safety" as well as by Cheskin Research (2000, p. 4) who concluded in an often-cited report that "[w]ithout trust, development of e-commerce cannot reach its potential." Additionally, several special issues on consumer trust in e-commerce in many leading academic and management journals in the last years highlight the importance of online trust and the increasing interest by numerous scholars in this crucial element (e.g., see special issues on online trust in *Communications of the ACM*, 2000, Volume 43, in *Strategic Information Systems*, 2002, Volume 11, in the *International Journal of Human-Computer Studies*, 2003, Volume 58, or the *e-Service Journal*, 2003, Volume 2).

⁶ Consumers being unfamiliar with a particular good or purchase may evaluate the good regarding three different dimensions, namely, *search qualities*, *experience qualities* and *credence qualities* (Darby and Karni, 1973). "Search qualities" are the easiest to assess because the consumer can already assess these qualities prior to a purchase (e.g., price, size, etc.). "Experience qualities" can be checked after the purchase only during the consumption or usage of the good, while "credence qualities" cannot be assessed during normal usage and could only be tested with the help of additional costly information which may often not be available to the consumer because it is too expensive (Darby and Karni, 1973, pp. 68-69).

1.3. Research Questions and Research Methodology

In the course of this doctoral thesis the following research questions will be answered:

- 1) What are the major factors that influence the formation of consumers' initial trust in a previously unfamiliar online retail store?
 - 1a) Which perceived characteristics of the unfamiliar online store and its website interface affect consumers' initial trust formation?
 - 1b) To what extent do personal characteristics of the consumers influence the formation of consumers' initial trust in an unfamiliar online store?
 - 1c) Is consumers' initial trust formation in a specific online vendor influenced by consumers' perceptions of the nature of the transaction medium (i.e., the Internet)?
- 2) What is the relative importance of initial consumers' trust regarding consumers' intention to transact with a previously unfamiliar online retail store?
- 3) Which measures may an online retail store employ to boost the establishment of consumers' initial trust?

In order to answer these research questions an interdisciplinary theoretical framework is developed based on a literature study covering published research from the fields of relationship marketing, management information systems research and human-computer-interaction research, sociology, organizational theory, economics, social psychology and philosophy and moral ethics. In addition, a conceptual meta-analysis of prior empirical studies on consumer trust in B2C electronic commerce is carried out.

Building on the theoretical findings, the empirical parts of this thesis represent a combination of qualitative and quantitative research methods, a combination sometimes referred to as *multi-method-* or *mixed-methodology design*. This approach is chosen - contrary to almost all

prior empirical studies on consumer trust in B2C electronic commerce which tend to have a strong methods bias toward the sole usage of quantitative methods - to adopt a more holistic perspective in terms of methodology in this thesis (Deshpandé, 1983; Mayring, 2001; see chapter three of this thesis). The applied multi-method approach in this thesis, links methods of the qualitative research paradigm (an exploratory, hypotheses generating focus group study) and the quantitative research paradigm (a confirmatory survey) at design level (Deshpandé, 1983; Mayring, 2001; Yauch and Steudel, 2003). The major aim of this approach, is to use newly collected qualitative data, gathered directly from Austrian consumers, in addition to reviewing existing theoretical concepts and published empirical studies as starting point for our quantitative study. For a graphical overview of the applied research methodology and design see figure 4.

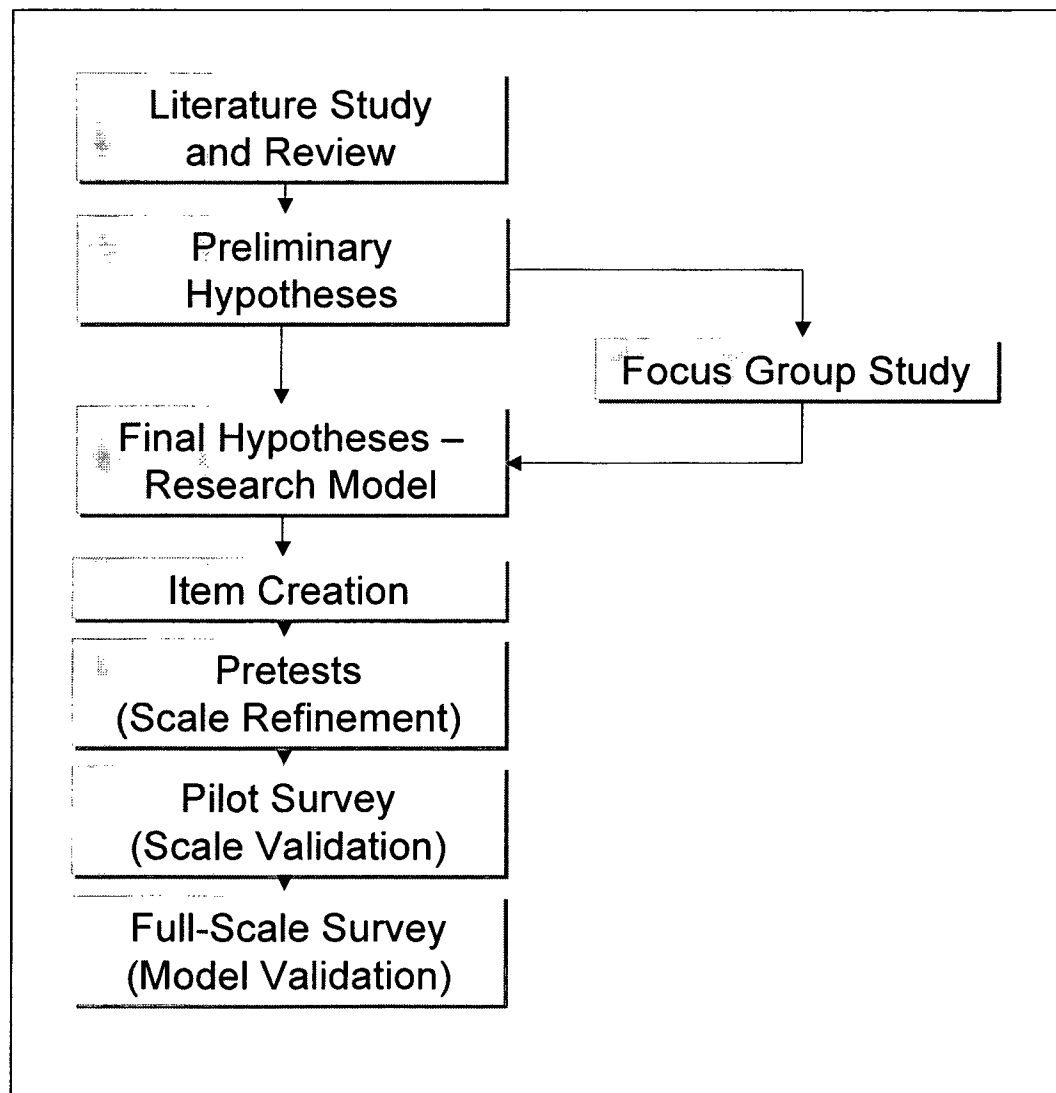


Figure 4. Research Design of this Thesis.

1.4. Research Restrictions

In order to ensure the quality of this doctoral thesis and to reach a meaningful depth of analysis several research restrictions had to be made. These decisions were necessary to limit the scope of this research to a practical and feasible level and to prevent shallow findings.

First of all, the focus of this thesis is willingly limited to *the context of B2C electronic commerce only*, because transactions and business relationships in business-to-business (B2B) electronic commerce differ considerably (e.g., due to a different buying behavior of companies especially in regard to decision making and negotiating; cf. Backhaus, 1999, p. 65, on the buying-center concept and decision making units in the context of B2B transactions).

Furthermore, we will especially concentrate on the investigation of consumers' trust formation toward online vendors offering tangible goods (i.e., *online retailing*) in the empirical parts of this thesis. Although we also acknowledge the importance of the online service industry (e.g., online travel-agents, online financial service providers and online banking) and do incorporate existing empirical findings and concepts from this context in our work, the e-service industry is not in the main focus of this thesis although several of our findings are also applicable in this industry.

Thirdly, the main scope of this thesis lies on *dyadic trust relationships*. We will especially investigate trust formation between individual consumers and an online retail store. In addition, we restrict this thesis by focusing on the *consumer side* of the dyadic trust relationship (i.e., consumer perceptions) and do not investigate mutual trust (Jones and Bowie, 1998). Hence, our qualitative and quantitative empirical findings are derived from consumers' perceptions and opinions of online retail stores.

Another restriction arises regarding the developmental stage of trust we are particularly focusing on. While in the theoretical sections of this thesis different stages and phases of trust development are discussed, the overall scope of this thesis and the major scope of our empirical research lies on *consumers' initial trust formation* in a previously unfamiliar online vendor. We thereby willingly exclude prior experience between the parties to the trust relationship and thus, do not investigate the impact of such variables like reputation, branding,

word-of-mouth, or satisfaction with order-fulfillment on consumers' trust. Closely linked with this limitation an additional restriction was made regarding the phases of trust. By putting a special emphasis on the phase of initial trust formation we consequently *do not empirically investigate other phases of trust development* in dyadic business relationships between consumers and online retailers. While we definitely acknowledge that initial trust is only the beginning of a trust relationship and that all subsequent phases of trust development need to be empirically researched too (e.g., because the subsequent phases can be expected to cover different antecedents and consequences of trust), this restriction had to be made to limit the scope of this thesis for reasons of quality.

While some authors (e.g., Lewis and Weigert, 1985; Dunn, 1988) have divided trust into emotional forms and into cognitive forms, we place this thesis in the context of business relationships between consumers and online retailers and consider initial consumer trust to be grounded on rationality and cognitive contents. Therefore we exclude emotional trust such as in close personal relationships from the focus of this thesis.

Finally, the specific empirical findings of this thesis are based on the perceptions of respondents from Austria and are restricted to Austrian consumers (aside from the question of external validity which additionally needs to be addressed in all empirical academic research; see chapters five and six). Hence, we *do not investigate any (cross-)cultural affects* on consumers' initial trust formation in B2C electronic commerce and thereby limit our empirical research to the Austrian context (i.e., a Germanic country).

1.5. Research Significance

While numerous scholars, market research organizations and business consultants emphasize the great importance of consumers' trust in B2C electronic commerce (e.g., Butler and Peppard, 1998; Hoffman et al., 1999; Jarvenpaa et al., 1999; Cheskin Research, 2000; Dayal et al., 2001; Consumer WebWatch, 2002; Grabner-Kräuter, 2002a, 2002b; McKnight et al., 2002; Corritore et al., 2003), theory-guided empirical studies on the nature and development of online consumer trust are still in very short supply. Of the relatively few empirical studies on online consumer trust published to date the vast majority was carried out by US-American

scholars using US-samples (Grabner-Kräuter and Kaluscha, 2003a, 2003b) while hardly any empirical studies were conducted to date in Austria or other Germanic countries (Kaluscha, 2003). Austrian exceptions are Köszegi (2000), who performed an experiment on trust and collaboration with a simulation of a virtual rubber market, and Schaffer (2003), who empirically researched consumer trust in e-services in the context of online travel agents. Studies in Germany were conducted by Büttner and Göritz (2002) who addressed the topic of consumer trust in an online pharmacy and developed a quite sophisticated experimental design but they empirically tested only a very limited research model, and by Einwiller (2002) who carried out an empirical study on consumer trust and reputation in B2C e-commerce.⁷ Therefore, to best of our knowledge, this doctoral thesis is among the very first to discuss and empirically research initial consumer trust formation in online retail stores in Austria.

Consequently, this research project contributes to the growing body of literature on consumer trust in electronic commerce by developing and validating a comprehensive model of consumer trust towards an online vendor in the initial phase of the exchange relationship, taking consumer characteristics, vendor and web-site characteristics as well as the specific nature of the Internet as underlying transaction medium into account. This thesis also provides a theoretically derived and empirically validated measurement instrument which can be used as a valuable starting point for future online trust research in Austria and other Germanic countries.

1.6. Dissertation Outline

Chapter one of this thesis provides a brief introduction on the development of business-to-consumer electronic commerce, including prospective future growth trends, followed by a short discussion of the strong need for consumer trust in electronic commerce transactions due to the specific nature of the Internet. Furthermore, the research questions and the applied research methodology are described, as well as the research restrictions. Chapter one is concluded with a discussion regarding the significance of this research.

⁷ Furthermore, we found two conceptual theses on online trust in Austria and Germany. One by Perry (2001), in the context of virtual organizations, and the other by Licharz (2002), on consumer trust in B2C retailing.

Chapter two starts with an overview of the importance of trust in human relations. Afterwards, the state-of-the-art of trust definitions across several different social science research disciplines is presented and conceptual problems as well as recurring definitional elements are discussed. Subsequently, necessary pre-conditions for trust to emerge in relationships are presented. Furthermore, the relationship between trust and distrust is investigated, followed by discussing and conceptually distinguishing trust from similar theoretical constructs such as cooperation, hope, reliance or confidence. In addition, the dynamic nature of trust and its developmental stages are pointed out and discussed. After a presentation of the different stages of trust an interdisciplinary trust-typology is presented including generalized dispositional trust, impersonal trust and interpersonal trust.

Chapter three forms a comprehensive literature review on prior empirical studies on consumer trust in B2C electronic commerce. In a conceptual meta-analysis 24 empirical studies are reviewed and detailed information is provided on their conceptualization and operationalization of their theoretical constructs as well as on the results of these studies. Additionally, information is provided on the studies' samples, their underlying theoretical frameworks and their applied statistical techniques for instrument validation and hypotheses testing. Chapter three ends with a synthesis and discussion of the findings of the 24 reviewed studies.

In *chapter four* the theoretical framework developed in chapter two and the existing empirical findings presented in the literature review in chapter three are combined into a formal set of preliminary research hypotheses for the case of the formation of initial consumer trust in an unfamiliar online retail store. Furthermore, these research hypotheses are used to formulate a comprehensive preliminary research model, linking 14 theoretical constructs. In addition to this main research model also a preliminary rival research model is created and discussed.

Chapter five begins with a brief general introduction on focus group research. Afterwards, the preparation, methodology and the results of a qualitative focus group study are reported, including an overview of the applied analytical technique (qualitative content analyses). In addition, limitations of the focus group study are identified. Chapter five ends with an update and revision of the preliminary research models - based on the findings of the qualitative focus group study - leading to a final main research model consisting of 18 theoretical constructs and a final rival research model formed with 17 theoretical constructs.

Chapter six provides a detailed overview of the development of the measurement instrument for the quantitative survey, including initial item creation and selection, pre-tests and item-refinement techniques and the results of a quantitative pilot study. Furthermore, a description of the survey methodology is given, followed by a detailed analysis and presentation of the results of the final quantitative survey and the hypotheses testing. Chapter six finishes with a discussion of the limitations of the quantitative survey.

In *chapter seven* a summary and synthesis of the findings of this thesis is presented. Subsequently, a number of theoretical implications for the field of online trust research are identified and suggestions for future research, conceptual as well as empirical, are made. Building on the empirical findings reported in chapter five and six, managerial implications for practitioners in the field of online retailing are provided. Chapter seven ends this thesis with a general conclusion.

In addition, this doctoral thesis includes an *appendix section* which features all relevant background material for the reader, including the initial item pool, the scales used in the pilot study as well as the final instrument applied in the quantitative survey and the reliability values of all the employed questionnaires.

2. The Concept of Trust

“He who mistrusts most should be trusted least.”

Theognis (600 B.C.)

(quoted in Deutsch, 1973, p. 143)

In this chapter we will first start with an overview of the importance of trust for personal and business relationships, followed by a presentation of the state-of-the-art of trust definitions in several research fields within social science, including current definitional problems and a presentation of our working definition of trust. We will then outline the preconditions which are necessary for the establishment of trust. Afterwards, we will show how trust can be distinguished from similar theoretical constructs such as for example trustworthiness or confidence, followed by a discussion of the relationship between trust and distrust. Then we will move on to a discussion of the dynamic nature of trust and the different developmental stages of trust. Finally we will present different types and variants of trust drawing from several research disciplines and categorize them into a trust-typology.

2.1. The Importance of Trust

Did you ever think about sharing an important secret with another person, a secret which, if it became public could have caused you immense trouble and shame? Or did you ever want to go out with your partner to see a play and you needed to decide if you would leave your infant children at home with a babysitter? Or have you ever been ill and needed to see a doctor, and the doctor prescribed you some colored pills with some strange sounding name consisting of ingredients you had no clue about and he ordered you to take them several times a day? Or did you ever went to a new restaurant and wondered if the cook would use fresh, innocuous ingredients and would adhere to rules of hygiene before you ordered some dish? Or have you ever bought an expensive car - not being a mechanic or a skilled automobile expert yourself - just based on the car's looks and some technical facts the dealer provided you on some brochure, not really being able yourself to judge if the car would turn out to be a lemon? All these little scenarios are situations in which you would have to decide if you (the *trustor*), *trust* the other person (the *trustee*), to keep the secret, to watch your children with great care, to prescribe you the right medicine to cure your illness and not to do you harm, to only use

high-quality ingredients for the dishes prepared in a clean kitchen, and to only sell you a well-functioning quality car that performs according to the promises made in the brochures. Basically, the list of such situations in our daily lives is endless.⁸

In fact *trust* is a concept which has received considerable attention in a number of social science literatures, such as sociology, psychology, economics and business administration, political science, anthropology, history, and sociobiology (Lewicki and Bunker, 1996). Browsing through the scholarly literature it can be seen that scholars in many of these different research disciplines have recognized the importance of trust:

1. In *sociology* for example by Blau (1964, p. 99) who stated that “trust is essential for stable social relationships”, by Lewis and Weigert (1985, p. 968) who similarly claimed that “trust in general is indispensable in social relationships”, by Luhmann (1989) who declared trust to function as an important mechanism for the reduction of social complexity, or by Fukuyama (1995, p. 7) who went even further and argued that “a nation’s well being, as well as its ability to compete, is conditioned by a single, pervasive cultural characteristic: the level of trust inherent in the society”.
2. In *psychology* for example by Erikson (1968, p. 97) proposing that trust is “the cornerstone of a vital personality”, by Rotter (1980, p. 1) who pointed out that “interpersonal trust is an important variable affecting human relationships at all levels: relationships between governments, between minorities and majorities, buyers and sellers, patients and therapists, parents and children”, by Johnson-George and Swap (1982) who similarly argued that “[i]nterpersonal trust is a basic feature of all social situations that demand cooperation and interdependence”, or by Yamagishi and Yamagishi (1994) who considered trust “to provide a solution to the problems caused by social uncertainty”.
3. In the field of *philosophy and moral ethics* for example by Bok (1978, p. 31, quoted in Baier, 1986, p. 231) who suggested that “[whatever] matters to human beings, trust is the atmosphere in which it thrives”.
4. In *economics* for instance by Dasgupta (1988, p. 49, p. 64) who concluded that “trust is central to all transactions” and “a public good, a social lubricant which makes possible production and exchange”.

⁸ These examples show that in the vast majority of cases trust is a *three-part relationship*, which means that typically *A trusts B to do C* (Baier, 1986, p. 236; Flores and Solomon, 1998, p. 206; Hardin, 2002, p. 9).

5. In *organizational theory* for example by Ring and Van de Ven (1992, p. 488) who stated that “some element of trust will be required for any transaction in which simultaneous exchange is unavailable to the parties”, and by Lewicki and Bunker (1996, p. 117), who noted that “trust is a critical success element to most business, professional, and employment relationships.”
6. Or in *relationship marketing*, where trust is viewed as an essential ingredient for successful business relationships in distribution channels (Anderson and Narus, 1990), for relationships between buyer and seller/supplier companies (Ganesan, 1994; Morgan and Hunt, 1994; Plötner, 1995; Doney and Cannon, 1997; Eggs, 2001), market research companies and their customers (Moorman, Despondé and Zaltman, 1993), theater companies and their customers (Garbarino and Johnson, 1999), headquarters and their global subsidiaries (Hewett and Bearden, 2001) and consumers and offline retail stores (Kenning, 2002).

Although there is a strong consensus across academic research disciplines, business practitioners and consultants on the importance of trust in all forms of human conduct and business relationships, there is no agreement on a general definition of the concept, as we will show in the next section.

2.2. Definitions of Trust

As Williamson wisely pointed out “‘trust’ is a term with many meanings” (Williamson, 1993, p. 453; see also Barber, 1983, p. 7). While in recent years a number of researchers have devoted considerable time and effort to the definition and the conceptualization of trust, applying all kinds of different approaches and perspectives, the result can be described as “a confusing potpourri of definitions applied to a host of units and levels of analysis” (Shapiro, 1987, p. 625; see also Mayer, Davis and Schoorman, 1995, Misztal, 1996, Blomqvist, 1997, and Barber, 1983, p. 1, who termed the situation a “verbal and conceptual morass”). Zucker (1986, p. 56) also concluded: “Recognition of the importance of trust has led to concern with defining the concept, but the definitions proposed unfortunately have little in common other than the informal character of trust.” Consequently, to date there is no universally accepted scholarly definition of trust (Hosmer, 1995; Rousseau, Sitkin, Butt and Camerer, 1998).

To illustrate the status quo of trust definitions as well as the problems pointed out by Zucker (1986), Shapiro (1987), Hosmer (1995), or Mayer et al. (1995) we will use the following sections to introduce the reader to a few of the most prominent trust-definitions in the research disciplines of social psychology, sociology, organizational theory, philosophy and moral ethics, economics and relationship marketing:

2.2.1. Social Psychology

Morton Deutsch was among the very first psychologists to define trust and investigated it by using prisoner's dilemma simulations (cf. Deutsch, 1958, 1960a, 1960b, 1973). He defined trust in a quite operational manner: „An individual may be said to have trust in the occurrence of an event if he expects its occurrence and his expectation leads to behavior which he perceives to have greater negative motivational consequences if the expectation is not confirmed than positive motivational consequences if it is confirmed.” (Deutsch, 1958, p. 266). Also J.B. Rotter (1967, 1971, 1980), another prominent social psychologist, devoted research to the concept of interpersonal trust. He defined interpersonal trust as “a generalized expectancy held by an individual or a group that the word, promise, oral or written statement of another individual or group can be relied on” (Rotter, 1980, p. 444). Rotter believed interpersonal trust to be a personality trait, emerging from experiences with other people during the course of a lifetime (Rotter, 1980). Again, Knee and Knox (1970, p. 359) defined an individual's trust as the individual's “certainty or uncertainty about .. [the other party's] trustworthiness”.

Summarizing these definitions it may be concluded that generally social psychologists have viewed trust as an expectation of the individual trustor regarding the outcome of some future event or the trustworthiness of another party or as a personality trait of the individual (cf. Hosmer, 1995; Blomqvist, 1997). Yet, a number of trust researchers from the field of psychology, for example Scott (1980), Johnson-George and Swap (1982) or Butler and Cantrell (1984), also refrained from explicitly defining trust in their studies.

2.2.2. Sociology

Although sociologists often state that the concept of trust is hardly discussed within sociology (cf. in Lewis and Weigert, 1985; Luhmann, 1988; Misztal, 1996), many different definitions of trust can be found in sociological literature. In the following, only a brief overview of five quite influential definitions will be presented, namely, the ones by Barber (1983), Zucker (1986), Gambetta (1988a), Luhmann (1989) and Giddens (1990).⁹

Bernard Barber (1983) considered the construct of trust to include three different expectations: “The most general is expectation of the persistence and fulfillment of the natural and the moral social orders. Second is expectation of technically competent role performance from those involved with us in social relationships and systems. And third is expectation that partners in interaction will carry out their fiduciary obligations and responsibilities, that is, their duties in certain situations to place others’ interests before their own.” (Barber, 1983, p. 9). Hence, Barber’s concept of trust rather tends to target both, the social system as a whole in which the individual trustor is embedded and specific interaction partners. Slightly similar Zucker (1986) defined and conceptualized trust as consisting of two types of expectations, namely, background expectations and constitutive expectations. “Background expectations are not specific to any situation, but serve as a general framework for behavior” while constitutive expectations “are more specific to particular sectors, exchanges, or interactions” (Zucker, 1986, p. 58). Background expectations include “the ‘attitude of daily life’ created through use of a standardized set of signals and coding rules held in common” and “reciprocity of perspectives, with individuals (or organizations) mutually identified as members of the same community assuming that all would use the same interpretative frame ... by making use of pre-established social facts or ‘socially warranted knowledge’” (Zucker, 1986, p. 57). Constitutive expectations consist of independence from self-interest and inter-subjective meaning, which means that “an individual (or organization) knows what the expectations are, knows that the other(s) know the expectations, and knows that the other(s) know that the individual (or organization) knows the expectations, even when the content of the expectation varies by social position, individual attribute, and so on” (Zucker, 1986, p. 58). Hence, both, Barber and Zucker added the social system and social

⁹ We would like to refer the reader to additional trust-definitions of the sociologists Lewis and Weigert (1985), Shapiro (1987), Fukuyama (1995), and Sztompka (1999).

roles into their definitions of trust, a view of trust that is generally shared within the field of sociology.

However, there are also sociologists, like for example Gambetta, whose definition of trust closely resembles the ones used in social psychology. Gambetta (1988a, p. 217) defined trust as an expectation in a situation of vulnerability, namely as “a particular level of subjective probability with which an agent assesses that another agent or group of agents will perform a particular action both, before he can monitor such action (or independently of his capacity ever to be able to monitor it) and in a context in which it affects his own action”. This definition emphasizes the notion of dependence and lack of control of the trustor over the trusted party.

Luhmann (1988, p. 97), a very prominent and influential trust researcher within the field of sociology, refrained from an explicit definition of trust. Yet, he stated: “If you choose one action in preference to others in spite of the possibility of being disappointed by the actions of others, you define the situation as one of trust.” Luhmann (1989) considered trust to be an effective mechanism to reduce social complexity and recognized the existence of both, trust in people and trust in social systems (e.g., such as trust in the functioning of the monetary system).¹⁰ According to Giddens (1990, p. 34) trust should be defined as “confidence in the reliability of a person or system, regarding a given set of outcomes or events, where that confidence expresses a faith in the probity or love of another, or in the correctness of abstract principles (technical knowledge).” Hence, Giddens also extended trust onto both, people and abstract social and technical systems. But his definition is rather confusing and blurry because he defined trust by using the terms “confidence” and “faith” which are conceptually related to trust and often, wrongly, used interchangeably with trust.¹¹

Looking at this sample of prominent trust-definitions of sociologists, we can conclude that they generally tend to view trust as embedded in a social system (i.e., trust as “a property of collective units”, Lewis and Weigert, 1985, p. 968) and/or view trust as an expectation toward a specific person, group, social institution or abstract system.

¹⁰ Luhmann’s works were strongly influenced by Talcott Parsons’ research on the social system (e.g., Parsons, 1951) (see also Jalava, 2003, for a discussion on the link between the works of Luhmann and Parsons).

¹¹ In fact, such definitions fulfill the condition of *homonymy*, which means that one label contains more than one single construct (McKnight and Chervany, 1996, p. 10; see also MacKenzie, 2003).

2.2.3. Organizational Theory

In organizational theory, basically three streams of trust definitions can be found. Trust is commonly either defined as 1) a (positive) expectation of the trustor regarding the other (trusted) party, 2) as an intention or willingness to depend on the other party, or 3) a combination of beliefs about the other party and the intention to depend on the other party. Lewicki, McAllister and Bies (1998, p. 439) fall into the first category and defined trust as “confident positive expectations regarding another’s conduct” as well as Das and Teng (2001, p. 255) who defined trust as “positive expectations regarding the other in a risky situation”. Also Nooteboom (2002, p. 48) suggested that “‘Real’ trust, or trust in the strong sense, is an expectation that things or people will not fail us, or the neglect or lack of awareness of the possibility of failure, even if there are perceived opportunities and incentives for it.”¹²

One of the first scholars from the field of organizational theory researching trust, Dale E. Zand (1972, p. 230), defined trust as “the conscious regulation of one’s dependence on another that will vary with the task, the situation, and the other person.” Zand falls into the second stream of definitions, because the notion of a “conscious regulation of one’s dependence” represents a behavioral intention to depend on the other party.

The third stream of trust-definitions within the field of organizational theory was initiated by Mayer, Davis and Schoorman (1995, p. 712) who defined trust first as “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party”. Building on the definition provided by Mayer et al. (1995), Rousseau et al. (1998) and McKnight, Cummings and Chervany (1998) similarly defined trust as, as “a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another” (Rousseau et al., 1998, p. 395) and as a two-dimensional construct combining the trustor’s belief in the competence, honesty, benevolence, and predictability of the other party and the trustor’s willingness to depend on the other party (McKnight et al., 1998, p. 474) respectively. Hence, Mayer et al. (1995), Rousseau et al. (1998) and McKnight et al. (1998) all combined the element of beliefs (or

¹² However, note that Nooteboom’s view that trust may also be based upon ignorance (i.e., “neglect” or “lack of awareness”) is generally not shared by other scholars.

expectation) regarding the other, trusted party with the behavioral intention (or willingness) of the trusting party to depend on the trustee.

2.2.4. Philosophy and Moral Ethics

Interestingly, the classical ethicists like for example Socrates, Plato, Hobbes, Rousseau or Kant hardly mentioned the concept of trust in their works (Hosmer, 1995; Flores and Solomon, 1998). Therefore, Baier (1986) was among the very first scholars from the field of philosophy and moral ethics to explicitly investigate the nature of trust. She concluded that trust “is accepted vulnerability to another’s possible but not expected ill will (or lack of good will) toward one” (Baier, 1986, p. 235) and that trust is “reliance on another’s good will” (Baier, 1986, p. 234). Another example of a trust definitions from the field of ethics can be found in Jones and Bowie (1998, p. 276, following Barney and Hansen’s definition, 1994, p. 176) who defined trust from the perspective of all involved parties as “the mutual confidence that no party to an exchange will exploit another’s vulnerabilities”. While Baier viewed trust as a willingness or intention of the trustor, Jones and Bowie categorized it as a belief. However, Baier as well as Jones and Bowie used the terms “reliance” and “confidence” in order to define trust, which is problematic because these are independent concepts, conceptually closely related to trust.

Another view on trust is provided by Hosmer who proposed the following definition: “Trust is the expectation by one person, group, or firm of ethically justifiable behavior – that is, morally correct decisions and actions based upon ethical principles of analysis – on the part of the other person, group, or firm in a joint endeavor or economic exchange.” (Hosmer, 1995, p. 399). While Baier (1986) and Jones and Bowie (1998) did not add terms or concepts specific to the field of moral ethics into their trust-definitions, Hosmer explicitly included the notions of ethics and morals in his definition.

2.2.5. Economics

Within economic literature, very few formal definitions of trust can be found. One of the very few is provided by Dasgupta (1988, p. 53) who defined trust as “one’s expectation regarding

others' choice of actions that have a bearing on one's own choice of action". Once more, like in many other research disciplines Dasgupta views trust as an expectancy (i.e., a belief about some future event). Unfortunately other economists, although discussing trust in their works (e.g., in Williamson, 1993), often refrained from defining the construct. Generally, within economic literature trust is rather seen as a calculative, rational choice mechanism, such as in Williamson (1993) (cf. McKnight and Chervany, 1996).

2.2.6. Relationship Marketing

In marketing literature the concept of trust has received increasing attention within the relationship marketing paradigm (Dwyer, Schurr and Oh, 1987) since the 1990s. In the meantime several marketing scholars investigated trust, conceptualizing and defining it in a number of different ways. One of the earliest trust definitions in the field of relationship marketing is provided by Crosby, Evans and Cowles (1990, p. 70), who defined customer trust in B2B marketing relationships as "a confident belief that the salesperson can be relied upon to behave in such a manner that the long-term interest of the customer will be served". While Crosby et al. (1990) considered trust to be a belief, Moorman, Deshpandé and Zaltman (1993) again conceptualized it as a behavioral intention based upon a belief about the other party. Moorman et al. (1993, p. 82), who researched customer trust in the field of market research, defined trust as "a willingness to rely on an exchange partner in whom one has confidence" (very similar to the trust definition of Mayer et al., 1995, in the organizational theory literature; see section 2.2.3.). Once more, like in the other research disciplines mentioned above, the terms "confidence" and "to rely" are used by Crosby et al. (1990) and Moorman et al. (1993) to define trust. Quite similarly Morgan and Hunt (1994, p. 23) considered trust in ongoing B2B business relationships "as existing when one party has confidence in an exchange partner's reliability and integrity". While Morgan and Hunt (1994) also mixed the term "confidence" into their definition, they started an interesting new stream of trust definitions in the domain of marketing by including certain characteristics of the trustee in the trust definition. Such specific characteristics of the trustee's are also included in the trust definition of Ganesan (1994, p. 3) for the case of relationships between retail buyers and vendor representatives. He viewed trust as a two-dimensional construct and stated: "The definition of trust proposed here reflects two distinct components: (1) credibility, which is based on the extent to which the retailer believes that the vendor has the required expertise to

perform the job effectively and reliably and (2) benevolence, which is based on the extent to which the retailer believes that the vendor has intentions and motives beneficial to the retailer when new conditions arise, conditions for which a commitment was not made.” This view of trust was shared by Doney and Cannon (1997, p. 36), who defined trust in an industrial buying context also as “the perceived credibility and benevolence of a target of trust”. Again, other characteristics are included in the trust-definition of Garbarino and Johnson (1999, p. 71), defining customer trust in an organization as “customer confidence in the quality and reliability of the services offered”. A quite recent study on consumer trust in service providers by Sirdeshmukh, Singh and Sabol (2002, p. 17) once more used certain characteristics of the trustee in their definition of consumer trust. They defined the construct as “the expectation held by the consumer that the service provider is dependable and can be relied on to deliver on its promises.” Summarizing the different approaches toward the concept of trust in relationship marketing literature we can conclude that in this field trust has been either viewed as a one-dimensional belief in the exchange partner, or as a behavioral intention based on a belief in the exchange partner, or as a more-dimensional belief in specific characteristics of the trustee such as the trustee’s credibility, integrity, benevolence, dependability/reliability or the quality of the trustee’s products (see section 2.2.3. for very similar trust-definitions and findings within the research field of organizational theory).

2.2.7. Summary

Synthesizing all the different definitions of trust across the various research disciplines it can be concluded that trust is mostly defined as a belief (or expectancy/subjective probability) about the other (trusted) party, or as a behavioral intention (or willingness) to depend (or rely) on another party, or as a combination of beliefs in the other party and a resulting behavioral intention to depend on the party. In recent years several scholars, especially within the research disciplines of relationship marketing and organizational theory have started to define trust as a multi-dimensional construct¹³ and included specific characteristics of the trusted party in the definitions such as integrity, benevolence, credibility or dependability. A number of scholars also refrained from defining trust in their works, while another group of scholars rather casually defined trust with the usage of such terms as “confidence”, “reliance”, or

¹³ Lewis and Weigert (1985, p. 969), two sociologists, represent an exception and already proposed trust to be a multifaceted and multidimensional construct in the mid-1980s.

“faith”, which are all very closely related to trust and often (wrongly) used interchangeably with trust. Some recurring elements in the definitions of trust are the terms “uncertainty”, “risk”, “accepted vulnerability”, “inability to monitor or control the other party”, “dependence” as well as “belief”, “expectation” and “willingness”.

After presenting trust-definitions from various research disciplines and pointing out common elements, we will now formulate a working definition of interpersonal trust for this thesis, before we proceed to discuss the preconditions for trust to emerge and before distinguishing trust from conceptually related constructs. Following the definitions of Moorman et al. (1993) in relationship marketing, Mayer et al. (1995) and McKnight et al. (1998) in organizational research, as well as the multidimensional conceptualizations of trust, proposed by such scholars like Lewis and Weigert (1985), McKnight and Chervany (2001-2002), or within marketing literature by Ganesan (1994), we define interpersonal trust between two exchange parties (i.e., dyadic trust) at this point as a two-dimensional construct, namely, as *the willingness of the trustor to be vulnerable to the actions of the trustee, based on beliefs about the trustee’s competence, integrity, and benevolence, irrespective of the ability to monitor or control the trustee in a situation of risk* (see also section 4.1.). This definition includes the elements of intentionally chosen risk and vulnerability by the trustor and it indicates a situation of dependence of the trustor on the trustee, as well as a certain amount of independence and freedom of will of the trustee and a resulting lack of control of the trustor over the trustee. In addition, this definition is multidimensional. It includes two dimensions, namely the dimension of perceived trustworthiness of the trustee from the point of view of the trustor (i.e., the trustee’s perceived competence, integrity and benevolence; see also sections 2.4.1 and 2.7.3.1.) and the resulting willingness/intention of the trustor to depend on the trustee as the second dimension (see section 2.7.3.2.).

2.3. Preconditions for Trust to Emerge

In order to further unravel the nature of trust it is also important to recognize and analyze the factors that are relevant for the emergence of trust (Grabner-Kräuter, 2002a). In the literature several factors can be identified which either directly or indirectly contribute to the formation of trust, namely, (social) complexity, uncertainty, risk, dependence, information asymmetry

and potential opportunism (cf. e.g., Luhmann, 1989; Mayer et al., 1995; Reaumeau et al., 1998; Ripperger, 1998; Bosshardt, 2001).

2.3.1. Complexity of the World – Social Complexity

The world in which the individual is embedded is highly complex. It generally enables an infinite number of future contingencies, more than actually become present and true (Luhmann, 1989, p. 5; Ripperger, 1998). While the complexity of the world applies not only to humans but to any physical and biological entity (e.g., animals, plants) it is only man who becomes aware of this complexity, selectivity and the need to make decisions for self-preservation. In response to these future contingencies the individual will make decisions and try to anticipate certain future contingencies and their probabilities (Luhmann, 1989; Ripperger, 1998). However, it is impossible for the individual to develop plans of action for all possible future contingencies. If one would try to plan for all possible future events, assuming equal probability of these events to come true, the individual would be shattered by the enormous amount of complexity (Lewis and Weigert, 1985). The complexity for the individual is further extended by an additional dimension due to the existence of other human beings. Confronted with other humans the individual recognizes that they are independent actors, also having “original access to the world” and are possibly experiencing and interpreting the world differently (Luhmann, 1989, p. 5; Bosshardt, 2001). In addition to the general complexity of the world, recognizing the potential unpredictability of these other social actors, social complexity is caused for the individual. In the light of this extended complexity and double contingency the individual faces the need for efficient ways to reduce complexity (Luhmann, 1989; Bosshardt, 2001). A very effective mechanism for the reduction of these complexities and the uncertainty of outcomes is trust (Luhmann, 1989; Yamagishi and Yamagishi, 1994). If an individual trusts she or he acts as if the future would be certain, as if of all the numerous possible future contingencies only some could become reality (Luhmann, 1989, p. 8 and p. 20; yet, there are also other alternative mechanisms for the reduction of complexity such as information, Grabner-Kräuter, 2002b, or formal contracts, Ripperger, 1998). The view that social complexity is a prerequisite of trust is especially emphasized by scholars from the field of sociology.

2.3.2. Uncertainty of Future Events

Strongly interrelated with complexity is the uncertainty of future events by which the individual is troubled. Generally, several forms of uncertainty can be identified and distinguished based on the sources of uncertainty and the amount of information available to the individual, namely, objective uncertainty, subjective uncertainty, exogenous uncertainty, endogenous uncertainty (cf. Ripperger, 1998; Bosshardt, 2001). However, only subjective uncertainty and endogenous uncertainty may in fact become pre-conditions for the emergence of trust, while the other two forms may trigger feelings of hope or confidence within the individual.

Objective uncertainty is not caused by lack of information but simply by the fact that some future event is only determined by chance although the individual is informed about the probabilities of the events to happen (Ripperger, 1998). An illustrative example is provided by Ripperger (1998, p. 15) in order to explain objective uncertainty: She uses the example of an individual who is confronted with a bowl containing three red and seven white balls and who needs to pick one ball out of the bowl with closed eyes, knowing the exact amount of red and white balls a priori. In that case the outcome would be uncertain but the probability of picking a red ball is 30 percent. While the individual is more or less in a situation of complete information regarding the balls and the probability of picking a red one it is still a matter of chance which ball she or he might pick blindfolded. In this case we may speak of objective uncertainty. Yet, situations of objective uncertainty are not likely to occur often and probabilities typically remain unclear. Furthermore the probability of the occurrence of the events in a situation of objective uncertainty may not be influenced by the individual but may simply be a given fact. Therefore, the individual is generally rather in a situation of hope when facing objective uncertainty (cf. Ripperger, 1998, p. 15). Contrary, if the individual is in a situation of subjective uncertainty she or he lacks information or is not able to mentally process the available information (e.g., using the example of the bowl with the ten balls again; if the individual would not know the amount of red and white balls and would subsequently be uncertain about the probability of picking a red one, the person would be in a situation of subjective uncertainty; cf. Ripperger, 1998, p. 15). Such a situation may also be termed as state of “insecurity” (Ripperger, 1998, p. 16). Basically, subjective uncertainty is facilitated by the high complexity of modern societies and limited cognitive resources of the individual

(Bosshardt, 2001; Grabner-Kräuter, 2002b). Therefore, situations in which the individual faces subjective uncertainty may become situations of trust (Bosshardt, 2001).

The second form of uncertainty which may form a pre-condition for trust to emerge is endogenous uncertainty. Endogenous uncertainty results from exchange relationships between parties in which the benefits of the individual decision maker depend on certain actions of the other party. In that case endogenous uncertainty is caused by decisions and actions of the other party to the relationship (Ripperger, 1998). The two major facets of endogenous uncertainty are “problems of coordination” and “problems of motivation” (Ripperger, 1998, p. 17). While the first refers to the distribution of tasks between the parties to the relationship and especially the technical competence of the other party to perform, the second refers to the willingness of the other party to fulfill its commitments. Contrary, exogenous uncertainty, which is caused by factors not controllable, by or attributable to any of the parties to the exchange relationship may not form a pre-condition for trust (e.g., forces of nature, price development, strike, etc.). The individual may react to exogenous uncertainty with the formation of hope (Ripperger, 1998, p. 17; Bosshardt, 2001). Just like in the case of social complexity, uncertainty has been also strongly discussed as prerequisite of trust in the field of sociology.

2.3.3. Risk

However, uncertainty may only indirectly become a precondition of trust because uncertainty within an exchange relationship may not necessarily lead to negative consequences and the term uncertainty itself is neutral. But what is more important to the individual rather than the level of uncertainty of the occurrence of some future event are the economic consequences of that event for the individual’s benefit. This notion of potential negative consequences is included in the term “risk”, whereby uncertainty forms a pre-condition for risk (Ripperger, 1998; Sitkin and Pablo, 1992; Rousseau et al., 1998).

Across research disciplines there is general agreement that (perceived) risk is a necessary pre-condition for trust to emerge (Rousseau et al., 1998). Only a risky situation provides the individual with the opportunity to employ trust to cope with the situation. Subsequently, if

trust is formed it will lead to risk-taking behavior by the trustor (Mayer et al., 1995; Rousseau et al., 1998).

Following Ripperger (1998, p. 19), risk may be characterized as referring to the possibility of loss in a given situation, resulting from the individual's choice of a certain behavioral alternative, in case of the occurrence or non-occurrence of uncertain events outside the control of the individual. Hence, risk emerges only in a situation where the individual has several behavioral alternatives and has the opportunity to consciously choose one alternative. If the individual decision maker is aware of the potential risk she or he "perceives risk" (e.g., Mitra, Reiss and Capella, 1999). Rousseau et al. (1998, p. 395) characterize perceived risk as "the perceived probability of loss, as interpreted by a decision maker" or in the words of Lim (2003, p. 218) "[i]f individuals perceive risk, they expect some kinds of loss". However, it is noteworthy that a situation of risk also includes the possibility of gains resulting from the chosen behavioral alternative (Das and Teng, 2001; Ripperger, 1998).

Building on the concepts of endogenous and exogenous uncertainty (see section 2.3.2.), risk can be divided into endogenous and exogenous risks, too. Endogenous risks are risks which are caused by decisions and actions of the other party/parties to the exchange relationship (e.g., competency of the other party to perform what needs to be done, the willingness of the other party to cooperate, etc.) (Ripperger, 1998; Mayer et al., 1995). Exogenous risks on the other hand are caused by external factors, not being caused by any of the parties to the exchange relationship. Only endogenous risks, caused by the other involved parties in the relationship constitute a pre-condition for trust to emerge while exogenous risks may be only dealt with by the individual by feelings of hope (Ripperger, 1998).

2.3.4. Dependence

Dependence constitutes another necessary pre-condition for trust (Rousseau et al., 1998; Wicks et al., 1999). Dependence can be defined as "the extent to which outcomes are controlled by, or contingent upon, the action of another party" (Wicks et al., 1999, p. 104; these are also the constituting characteristics of a *principal-agent relationship*, cf. Ripperger, 1998, p. 64) or as a situation "where the interest of one party cannot be achieved without reliance upon another" (Rousseau et al., 1998, p. 395). If the individual decision maker is in

the position to reach a desired goal independently, without the help of another party she or he does not need to trust another party. To reach mutual trust between two parties (instead of unidirectional trust) interdependence is one necessary pre-condition.¹⁴ If the level of (inter)dependence changes within a relationship, also the nature of trust is expected to change (Rousseau et al., 1998; Sheppard and Sherman, 1998; Wicks et al., 1999; see also section 2.6. on the stages of trust development). Dependence is especially often discussed as important precondition for trust in organizational theory literature.

2.3.5. Information Asymmetry

Exchange relationships very often resemble principal-agent relationships. If the relationship between the individual decision maker and the other party is characterized by dependency of the individual on the other party and the relationship is viewed as an implicit contractual agreement, then the trust relationship may be considered a principal-agent relationship (Jensen and Meckling, 1976; Shapiro, 1987; Williamson, 1990). In a principal-agent relationship the agent has to perform a certain act on behalf of the principal (Ripperger, 1998). One crucial element of principal-agent relationships are information asymmetries between the principal and the agent. The agent is always in a position of having more information at hand than the principal because the agent is free to act and may choose to act on behalf of the principal or he may choose to defect. Furthermore, the vast majority of exchange situations are non-simultaneous which additionally contributes to information asymmetries.¹⁵

Some information asymmetries may be reduced before engaging in an interaction by “screening activities” of the principal to identify an untrustworthy agent, or by “signaling activities” of the agent to provide the principal with additional information and to show the principal that he is trustworthy (Ripperger, 1998; Bosshardt, 2001; see also chapter three for

¹⁴ On the other hand, if only the individual decision maker is overwhelmingly dependent on the other party, to an extent that she or he may lose freedom of choice, then it may not become a trust-relationship anymore but rather a situation in which the individual may develop *hope* (see 2.4.5.).

¹⁵ In fact, non-simultaneous exchange is another crucial pre-condition for trust as well. Luhmann (1989, p. 98) argued that without trust only simultaneous exchange and cooperation would be possible, and by granting trust a time-lag is accepted by the trusting party/parties (see also similarly, Misztal, 1996, p. 79; Ring and Van de Ven, 1992, p. 488).

more information on Signaling Theory). However, both screening and signaling result in higher transaction costs (Williamson, 1990) for the parties and not all information asymmetries can be excluded after all. As a result, a certain amount of information asymmetry and endogenous risk remains which the principal may cope with by trusting the agent. The element of information asymmetry as prerequisite for trust in exchange relationships is predominantly discussed within the field of economics.

2.3.6. Potential Opportunism

Strongly interrelated with dependency and information asymmetries in exchange relationships is potential opportunism of agents in such a relationship. Following Williamson's (e.g., 1990,1993) new institutional economics, economic actors may be opportunistic. Opportunism, as included in the new institutional economics, is "a self-interest seeking assumption" (Williamson, 1993, p. 458). Williamson argued that there are opportunistic agents on the market which are "self-interest seeking with guile" (Williamson, 1993, p. 458). Hence, such an opportunistic agent will potentially lie and use deceit to reach his goals at the other party's expense. However, not all economic actors may act opportunistic when transacting with others, yet, the simple threat that some of them may be opportunistic causes significant danger to the individual decision maker (i.e., the principal in a principal-agent relationship) (Williamson, 1990). Furthermore, it may not be clearly identifiable for the individual decision maker (i.e., the principal) if an agent is likely to be and act opportunistic before entering in an exchange relationship with that specific agent.

As a result of dependency and information asymmetries the principal may run the risk of selecting an opportunistic agent who misuses the fact that he is in possession of more information than the principal. While potential opportunism may pose risks to the individual this facet also provides a fruitful ground for the development of trust to cope with the risk that some agents might be opportunistic. Another alternative would be to employ complex contracts and to perform costly screening and monitoring of the agent.¹⁶ Like information

¹⁶ Another pre-condition for the emergence of trust is communication, an assumption which was empirically supported in a number of studies (cf. e.g., Loomis, 1959; Anderson and Narus, 1990; Morgan and Hunt, 1994; Selnes, 1998). While we recognize communication as another important pre-condition, it seems to be

asymmetry also the element of potential opportunism is predominantly discussed by scholars within the field of economics as prerequisite for trust to emerge in exchange relationships.

2.4. Trust Versus Similar Concepts

Aside from everyday language in which trust is often used interchangeably with a number of related terms that actually have a different meaning, also in many prior scholarly papers – see the trust definitions above in section 2.2. – trust has been casually mixed-up or confused with such terms as trustworthiness, confidence, reliance, familiarity, hope, cooperation or gullibility. Yet, these habits are counterproductive and “muddy the water” for other scholars trying to create a clear and unequivocal conceptualization of trust. In the following we will show why and how the constructs trustworthiness, confidence, reliance, familiarity, cooperation, hope and gullibility differ from the concept of trust.

2.4.1. Trustworthiness

Trust and trustworthiness are two notions which have been mixed-up and confused by a large number of scholars (Mayer, Davis and Schorman, 1995). Essentially, while trust is something inherent in the trustor, trustworthiness is a feature of the trustee and forms a basis for trust (Blau, 1964; Hardin, 2002; Corritore et al., 2003), or as Flores and Solomon (1998, p. 209) describe it: “trustworthiness is a virtue [of the trustee],-the compound virtue of being dependable, capable, responsive and responsible”. The relationship between trust and trustworthiness might become clear with another illustrative statement made by Hardin (2002, p. 28): “If my trust in you is well placed, that is because you are likely to have the motivation to do what I trust you to do. That is to say, you are likely to be trustworthy.” Being trustworthy may be triggered by internal motivation due to character, morals or habit, by external motivation due to societal and institutional conventions (e.g., laws backed by sanctions) or by a mix of internal and external motivators such as in the case of internalized norms one voluntarily obeys too (Hardin, 2002).

superfluous to discuss it further since some form of communication is a necessary antecedent for any kind of human relationship.

Based on a review of prior literature on factors contributing to trust Mayer et al. (1995) proposed a parsimonious set of three specific characteristics which may be used to grasp the trustworthiness of a person: 1) *ability*, 2) *benevolence*, 3) *integrity*. Ability is domain specific and refers to the sum of skills and (technical) competencies that put the trusted party into the position to reach some goal in the specific domain relevant to the trustor. Benevolence labels the extent to which the trusted party is assumed to keep the interest of the trustor in mind and the extent to which the trustee wants to benefit the trustor aside from selfish motives (i.e., including notions of good will, responsiveness, caring attitude). In other words, benevolence is the amount of positive orientation of the trusted party towards the trustor. Integrity on the other hand refers to the degree by which the trustee follows a set of certain moral principles (e.g., credibility in communication, a strong sense of justice, sticking to promises) (cf. Mayer et al., 1995, pp. 717-720). In a similar review of prior trust literature McKnight and Chervanny (1996, p. 33) independently almost ended up with the same result. They proposed four specific characteristics of trustworthiness of a person: 1) *competence*, 2) *benevolence*, 3) *honesty*, and 4) *predictability*. In essence, the first three of McKnight and Chervanny's (1996) characteristics of trustworthiness are identical with the ones of Mayer et al. (1995) only with "ability" being labeled as "competence" and "integrity" being labeled as "honesty". McKnight and Chervanny (1996, pp. 33-34) defined competence as "the ability to do for the other person what the other person needs to have done", honesty as the making of good faith agreements, telling the truth and fulfilling promises made, benevolence as caring "about the welfare of the other person", and predictability as the consistency of the party's actions in order to enable other (trusting) parties to forecast what the party will do in a given situation. This latter facet of trustworthiness was not included by Mayer et al. (1995, p. 714) who considered predictability not to form an element of trustworthiness. In fact, in a later paper McKnight and his colleagues recognized that contrary to the other three facets of trustworthiness predictability may not be an element of trustworthiness in all trust relationships (McKnight et al., 2002, p. 303).¹⁷ Overall, a person possessing all three of these traits (i.e., ability/competence, integrity/honesty and benevolence) is a very desirable exchange partner (Yousafzai, Pallister and Foxall, 2003, p. 854).

¹⁷ Especially in initial, newly formed relationships predictability may not be used as determinant of trustworthiness because the predictability of a party is generally an extrapolation of the party's past behavior in past interactions into the future (i.e., a tendency for consistent behavior over time) (cf. also Shapiro et al., 1992; Ratnasingham, 1998).

2.4.2. Confidence

Probably the distinction between trust and confidence is the hardest to make because how one perceives a situation makes the only difference (Luhmann, 1988; Misztal, 1996). Indeed, many scholars have not clearly drawn the distinction between trust and confidence (Mayer et al., 1995). Luhmann (1988, p. 97) provided a very good example which may help to grasp the distinction. He stated that both, trust and confidence, may lead to disappointment but: “If you do not consider alternatives (every morning you leave the house without a weapon!), you are in a situation of confidence. If you choose one action in preference to others in spite of the possibility of being disappointed by the actions of others, you define the situation as one of trust.” This view is also shared by Blomqvist (1997, p. 279) who argued that confidence does not involve the conscious consideration of alternatives. In other words, confidence is a passive concept while trust requires some active decision by the individual, or as Luhmann (1988, p. 98) noted, the difference is made by whether or not “the possibility of disappointment depends on your own previous behavior.” While confidence may be regarded as a general response to uncertainties and dangers in everyday life, trust is a response to recognized and actively assumed, specific risks, resulting from the trustor’s own decisions in the face of alternatives (cf. Mayer et al., 1995; Ripperger, 1998; Grabner-Kräuter, 2002b).

2.4.3. Reliance

According to Blomqvist (1997) reliance is a narrower concept than trust because in the case of reliance one merely relies on certain aspects or characteristics of another person or a system, while trust is a more holistic and inclusive construct. Ripperger (1998) explained that reliance focuses on technical competence of the other party (i.e., to rely on the other party *to be able to do something*) but excludes the question if the other party is willing and motivated to do so. Hence, reliance excludes the elements of potential opportunism and free will, integrity, honesty and benevolence which are generally brought up when talking about trust and its prerequisites. In fact, scholars often use the term “reliance” in connection with machines or technical systems (e.g. in Nass, Fogg and Moon, 1996, Giddens, 1990; Sztompka, 1999). Following these arguments, one may be said “to rely” on his car but it would be wrong to state that he “trusts” his car, because a car cannot be honest or willingly fulfill its commitments or behave benevolent towards its owner; the car may just work and function and

prove to be reliable (i.e., a car or any other technical system is not a “moral agent”, Corritore et al., 2003; see also Gefen and Straub, 2003; Shneiderman, 2000; Gefen et al., 2003, p. 55). Corritore et al. (2003) provide another perspective for distinguishing trust and reliance by noting that it is possible to rely on a person but at the same time not to trust the person.

2.4.4. Familiarity

Furthermore, trust must not be confused with “familiarity” because “[f]amiliarity is an unavoidable fact of life; trust is a solution for specific problems of risk” (Luhmann, 1988, p. 95). Additionally, in terms of temporal perspective, familiarity is directed toward the past while trust is oriented toward the future (Luhmann, 1989; Ripperger, 1998). However, Luhmann believes that trust is only possible in a familiar world, because familiarity is an important basis for trust to emerge (Luhmann, 1989; Bosshardt, 2001; but familiarity is not the only basis for trust especially in modern complex societies, cf. Strasser and Voswinkel, 1997). Apart from that trust is also an active concept, meaning that trust requires a decision or behavior by the trustor, whereas familiarity on the other hand is a passive concept (Ripperger, 1998). Familiarity emerges in our lives simply as a result of experience. For example one may get the feeling of familiarity when returning to one’s well-known hometown after a long journey (Schottländer, 1957). Familiarity is not only a basis for trust, just like trust it may also function as a mechanism for the reduction of complexity itself. If a certain situation is familiar, compared to others experienced in the past, the individual is likely to perceive less complexity and uncertainty in the situation (Luhmann, 1989). Another argument which can be used to distinguish trust from familiarity is that familiarity is relatively neutral in regard to the range of past experiences. In other words, familiarity – contrary to trust - may not only be based on positive experiences but can also be based on negative experiences made in the past. Yet, in the latter case it is likely to lead to distrust (Bosshardt, 2001).

2.4.5. Hope

Gambetta (1988a, p. 221) argued that trust differs from hope in terms of freedom of choice. If the individual has no freedom of choice in a situation and has to depend on the other party in any case, while the other party has freedom of choice, this would be no situation of trust but

one of hope. The individual would only be able to hope that the other party or parties would not exploit the (vulnerable) situation of the individual.

Also Luhmann (1989) and Ripperger (1998) considered trust and hope to be distinct concepts, yet, they used slightly different arguments than Gambetta (1988a). Ripperger (1998, p. 38) stated that in a situation of hope, risk and uncertainty are caused by exogenous factors not attributable to any party involved in the exchange situation and therefore not controllable by contracts, etc. Luhmann (1989, pp. 24-25) on the other hand mentioned that in a situation of trust the individual willingly chooses some risky alternative which could potentially lead to higher losses than possible gains, while a person showing hope has confidence despite the given uncertainty. Additionally, Deutsch (1958, pp. 265-266) suggested that contrary to trust the concept of hope does not mean that the individual will suffer negative consequences if things go wrong. However, while their arguments differ Gambetta, Ripperger, Deutsch and Luhmann all agree that trust and hope are conceptually distinct constructs.

2.4.6. Cooperation

In the literature trust and cooperation have also been confused at times or were not clearly distinguished from each other, like for example by Gambetta (1988a, on p. 217). In order to resolve this confusion Mayer, Davis and Schoorman (1995) provided a straightforward explanation on how trust and cooperation differ. They concluded that “[a]lthough trust can frequently lead to cooperative behavior, trust is not a necessary condition for cooperation to occur, because *cooperation does not necessarily put a party at risk.*” Mayer et al. (1995) used an example of two people cooperating who do not trust each other but are simply assured due to the external control mechanisms which would punish betrayal and opportunism and therefore minimize or even fully exclude risk and vulnerability. Also Knee and Knox (1970, p. 359) brought up the critique that cooperative behavior may not be fully attributable to trust but can be also subject to other interpretations (they used the example of cooperation in prisoner’s dilemma games for their critique).

An additional clarifying example for distinguishing between trust and cooperation is provided by Good (1988, p. 33) who stated that: “If A trusts B to take some future action C, then at one simple level it is A who is trusting B, in that the satisfaction of A’s goal requires B to do C,

and not something else which would be detrimental to A's interest. As such, it is not A who is being cooperative, but B in performing the action C, and by the same token B is not displaying trust." Also Corritore et al. (2003) considered trust and cooperation to be distinct constructs and pointed out that sometimes cooperation may lead to trust (i.e., be an antecedent of trust) but that trust may also lead to cooperation (i.e., cooperation being a consequence of trust).

2.4.7. Gullibility

In the past the question has also been raised if trusting equals being gullible. Deutsch (1958, p. 278) for example stated that trusting sometimes may be "pathological trust" or "gullibility", and "reflect a compulsive, incorrigible tendency to act in a trusting manner without regard to the characteristics of the situation in which the behavior is to take place", as well as Flores and Solomon (1998, p. 206) who claimed that "there is such a thing as too much trust, and then there is 'blind trust,' trust without warrant, foolish trust".

However, Rotter (1980, p. 4), who researched generalized interpersonal trust and gullibility, concluded that by viewing gullibility as "naiveté" or "foolishness", and by defining it "as believing another person when there was some clear-cut evidence that the person should not be believed", the two constructs, trust and gullibility, become separable from each other. Rotter used the following example to further clarify the distinction: "To trust a stranger who has not lied to you before would not be gullibility; to believe a politician who has lied to you many times before is gullibility" (Rotter, 1980, p. 4). This view is shared by Yamagishi et al. (1999) who agreed that trust and gullibility are logically independent concepts. They argued that a person is gullible (or credulous) if she or he is insensitive to information/signals revealing untrustworthiness of another party.

2.5. Distrust

“Trust in God, but keep your powder dry.”

Old New England Proverb
(quoted in E.J. Webb, 1996)

Generally, fewer work has been published on research on the concept of distrust.¹⁸ Reviewing the existing literature basically three interrelated questions were raised by scholars on the nature of distrust. Firstly, are trust and distrust one dimension and only representing the extremes of a continuum? Secondly, is distrust the opposite of trust? Thirdly, are trust and distrust two separate constructs (cf. Knee and Knox, 1970; Mishra, 1996).

Just like trust also distrust has been defined in a number of different ways. For example Lewicki, McAllister and Bies (1998, p. 439) defined distrust as “confident negative expectations regarding another’s conduct” whereby “another’s conduct” referred to the word, decision or action of the other party.¹⁹ Again, Koehn (2003, p. 4) provided the following illustrative example to define distrust: “If I confidently believe you will do me wrong and refuse to co-operate with you, then my belief would seem to be *distrust*.”

Whereas in general, trust is viewed as something positive by scholars (e.g. by Fukuyama, 1995) and survey research on trust was found to be influenced by social desirability bias of respondents (Rotter, 1971; Koller, 1997; i.e., survey respondents seemed to believe that trusting is socially desirable), distrust is commonly viewed as something negative (Hardin, 2002). However, as Hardin (2002) pointed out, distrust may not generally be a bad thing but it simply depends on the circumstances. In a group or society in which people are generally untrustworthy one may be better of showing distrust toward others, while in a benign society where trust would be justified distrust may lead to losses because potential beneficial co-operations with others will be rejected a priori.²⁰ Typically, distrust will trigger interpersonal

¹⁸ In the literature the terms “distrust” and “mistrust” are sometimes used interchangeably. In this thesis, we consider “distrust” and “mistrust” to be two different labels for the same construct. While we propagate the term “distrust” throughout this thesis, the reader should not be confused by some quotes in this section which include the term “mistrust” instead.

¹⁹ In the majority of situations distrust is a three-part relation (i.e., A distrusts B in regard to C) (Hardin, 2002, p. 89).

²⁰ See Gambetta (1988b) for a description of a very rare situation in which certain parties benefit considerably from increasing distrust (i.e., the case of the Italian mafia and distrust in regional societies).

rejection, will lead to defensive behavior of the individual (Zand, 1972) and dictate “a course of action based on suspicion, monitoring, and activation of institutional safeguards” (Lewis and Weigert, 1985, p. 969).

Regarding the relationship between distrust and trust a number of different opinions can be found in the relevant literature. Rotter (1980) tended to view trust and distrust as opposite ends of a continuum. Giddens (1990) suggested that distrust - he termed the concept “mistrust” - may not be the opposite of trust because this term would be too weak. Instead Giddens (1990, p. 100) proposed the opposite of trust to be a “a state of mind which could best be summed up as existential *angst* or *dread*”. Luhmann (1989) and Hardin (2002) viewed distrust as the opposite or negative of trust²¹ and Sztompka (1999, p. 26) similarly considered distrust to be the “negative mirror-image” of trust while he termed the neutral stage in between trust and distrust as “mistrust”. Again, Zucker (1986), Sitkin and Roth (1993) and Lewicki et al. (1998) proposed that trust and distrust are two distinct but related constructs or dimensions.

Additionally, in a very comprehensive article on the concept of distrust, Lewicki et al. (1998) proposed a new view on trust and distrust contrary to the classical literature. Lewicki et al. (1998) argued that many relationships in our lives are “multifaceted”, “ambivalent” and “multiplex” and thus, in these relationships very often notions of trust and distrust may co-exist toward one party at the same time. They provided the following example: “For instance, I may get to know a professional colleague in my academic department fairly well. Over time, I may learn that this colleague is excellent as a theoretician, adequate but not exceptional as a methodologist, highly limited in skills as a classroom teacher, completely at odds with me in his political beliefs, outstanding as a golfer, tediously boring in committee meetings but periodically quite insightful, and terrible at keeping appointments on time ... I can come to understand and appreciate those domains where it is appropriate for me to trust him (and in what respects) and those domains where trusting him is inappropriate” (Lewicki et al., 1998, p. 442). While one may disagree that the statement “trusting him is inappropriate” already represents distrust, Lewicki et al. (1998) also provided a more striking example from the field of inter-organizational relationships, namely a joint-venture between Boeing and a Japanese

²¹ Luhmann (1989) considered distrust to be the opposite of trust and a functional equivalent mechanism to trust. Hence, Luhmann generally assumed distrust to be able to reduce social complexity, too.

company. In the course of this joint venture the companies were interdependent and had shared objectives, they needed to exchange considerable amounts of technical knowledge and valuable proprietary information with each other. Yet, Boeing protected itself against potential spying attempts by Japanese technicians by limiting the access of the Japanese to certain secure areas within their compound. Another example for a relationship in which trust and distrust co-existed at the same time is given by McKnight and Chervany (2001). They used the example of Franklin D. Roosevelt and Joseph Stalin, who cooperated with each other during World War II to fight Adolf Hitler. During this relationship Roosevelt and Stalin needed to trust each other regarding their mutual support but they also distrusted each other, knowing that the other had his own goals (McKnight and Chervany, 2001, p. 27).

In a recently conducted review on past scholarly literature on distrust McKnight and Chervany (2001) summarized that the current understanding of the relationship between trust and distrust is that 1) they are two distinct constructs, 2) that they are the opposite of each other, 3) that in some relationships they may co-exist, and 4) that trust and distrust have different antecedents and consequences (see also Lewicki et al., 1998; Hardin, 2002).

2.6. The Dynamic Nature of Trust

*„there is no stable friendship [philia] without trust [pistis],
and there is no trust without time“*
Aristotle, Eudemian Ethics
(quoted in Hardin, 2002, p. 203)

*“Since the process of trust building and withdrawing is a very dynamic one – it can be killed in some minutes –
trust must be seen as an infant to be protected rather than an independent self.”*
Jean-Claude Usunier (1996, p. 500)

In early trust research, during the 20th century, scholars often had assumed that trust would be a static, “all-or-nothing” phenomenon (Rousseau et al., 1998). However, in the last fifteen years this view of trust has changed and scholars consider it now more and more to be a

dynamic concept which evolves over time²² and which can be divided into different developmental stages or phases, each with specific characteristics (Lewicki and Bunker, 1996; Flores and Solomon, 1998; McKnight et al., 1998; Chen and Dhillon, 2003; for an exceptional early work on the dynamic nature of trust see Zand, 1972).

Rousseau et al. (1998) suggested three major phases of trust development, namely, 1) *trust building*, during which trust is either first established or restored, 2) *stability*, when trust already exists and is maintained, and 3) *dissolution of trust*, during which trust erodes and declines.²³ The first phase, trust building, may be further extended by including the phase of *initial trust formation* (McKnight et al., 1998), which covers a relatively short but important sub-phase in the course of trust building. Initial trust formation refers to the very first interaction between the trustor and the trustee and is - due to the lack of personal experience with the trustee - mainly driven by personality traits of the trustor, by external institutional cues and by cognitive processes within the trustor (e.g., stereotyping and categorization) (cf. McKnight et al., 1998).²⁴ However, it is noteworthy to mention that not all trust relationships may pass through all these phases. Some trust relationships may already collapse after the first interactions while others may remain in the phase of stability or continuously grow and not reach the phase of dissolution (for a schematic illustration of the phases of a sample trust relationship see figure 5 below).

While Rousseau et al.'s (1998) categorization of the development of trust is based on the magnitude of trust over time (i.e., increase, stability, decrease) other authors have also discussed the dynamic nature of trust, yet, focusing on the different grounds of trust during its

²² Actually, stating that "trust evolves over time" in the context of trust-development is a simplification because the correct form would be to state that "trust evolves based on interactions between the parties over time", because without interactions occurring large amounts of time may pass without trust developing at all (see also Flores and Solomon, 1998, and Thibaut and Kelley, 1969).

²³ Generally, researchers tend to focus on the phase of trust building and re-building (e.g., Shapiro, Sheppard and Cheraskin, 1992; Sitkin and Roth, 1993; Lewicki and Bunker, 1996; Doney, Cannon and Mullen, 1998; McKnight et al., 1998, 2002; Koufaris and Hampton-Sosa, 2004), while fewer works can be found on the phase of stability (e.g., Sheppard and Sherman, 1998) and on the phase of trust dissolution (e.g., Bies and Tripp, 1996; Lewicki and Bunker, 1996; Sitkin and Stickel, 1996).

²⁴ Initial trust may be regarded as "a person-specific investment" of the trustor which pays off if repeating transactions between the trustor and the trustee result from it (Ripperger, 1989, p. 193; see also Blau, 1964, p. 98).

developmental stages. Shapiro, Sheppard and Cheraskin (1992), Lewicki and Bunker (1996) and Ratnasingham, (1998) proposed a dynamic view of trust, splitting trust development into three hierarchical developmental stages, categorized by the different cues and notions of trust which take effect during each of these stages.

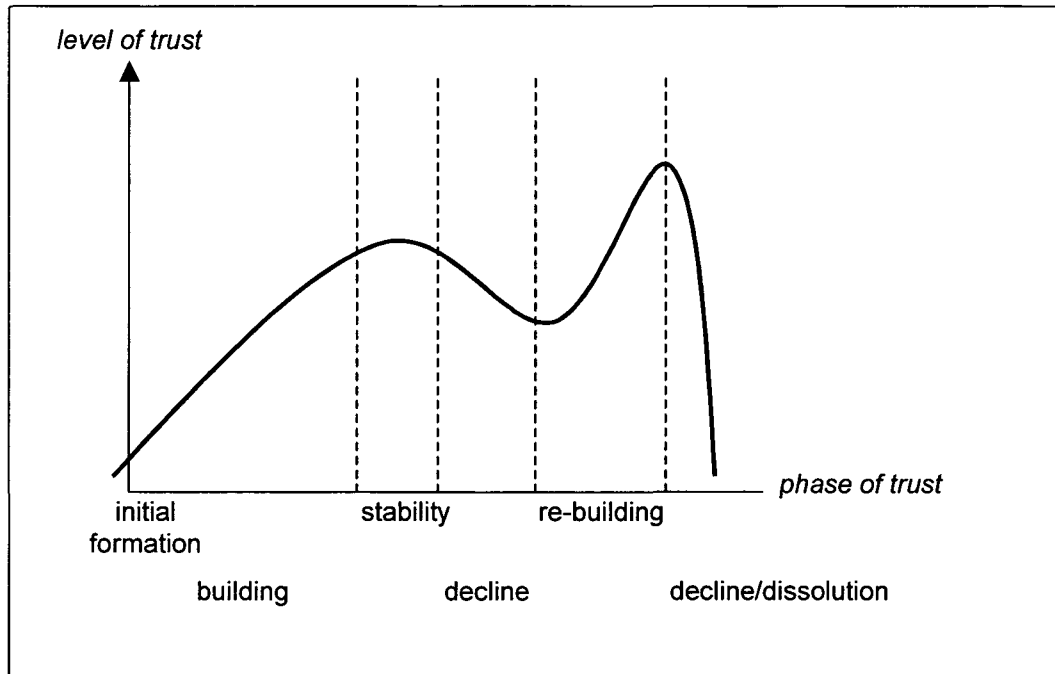


Figure 5. Phases of Trust.

Source: Based on Rousseau et al. (1998) and McKnight et al. (1998)

Shapiro et al. (1992) argued that the earliest stage of trust development is dominated by trust based on deterrence (i.e., *deterrence-based* trust stage). They assumed that during this first developmental stage behavioral consistency of the trustee is assured by threat of punishment of opportunism. According to Shapiro et al. (1992) deterrence may be caused either by repeated interactions between the parties because in that case the perspective of potential loss of future benefits will act as a deterrent for the trustee, deterrence may also be resulting from multiple simultaneous interactions between the parties because then the trusted party may refrain from opportunism in one single interaction because otherwise it would lose more than it would gain as a result of the termination of the many other interactions/transactions, and finally deterrence may be caused by potential loss of good reputation within the market caused by negative word-of-mouth (i.e., “reputational hostage taking”, Shapiro et al., 1992, p. 368) or due to external factors like courts or credit bureaus which would punish opportunism and betrayal. However, Sitkin and Roth (1993), Rousseau et al. (1998), and Solomon and

Flores (1998) pointed out that trust based on such strong deterrent mechanisms like institutional sanctions and external constraints may not be “trust” any more because risk is minimized. An alternative was proposed by Lewicki and Bunker (1996) who slightly adapted Shapiro et al.’s (1992) concept of the three developmental stages of trust. In the opinion of Lewicki and Bunker (1996) the first developmental stage of trust is not solely dominated by deterrence but as well by the motivation of potential rewards to be derived from sustaining and fulfilling the trust relationship. Therefore, they renamed the first stage of Shapiro et al. (1992) in their model into the stage of *calculus-based* trust, because from their point of view it is dominated by rational calculation of potential costs and benefits.

After some time and continuous interactions a trust-relationship may enter the second stage of trust development which is dominated by trust based on the perception of predictability of the trustee’s behavior, whereby predictability is derived from the trustor’s knowledge and understanding about the trustee resulting from all their past interactions (*knowledge-based* trust stage). Understanding and predictability of the trustee are especially facilitated by regular communication between the parties and “courtship” (i.e., the assessment of the trustee’s conduct and performance in different situations by the trustor and the evaluation of the “interpersonal-fit” between the parties) (cf. Shapiro et al., 1992; Lewicki and Bunker, 1996; Ratnasingham, 1998; partly also Nooteboom, 2002, p. 8).

The third developmental stage of trust is dominated by internalization of the other’s preferences, mutual empathy, and identification with each other (stage of *identification-based* trust). This stage represents the highest, most mature and solid level of trust which may be reached by the parties to the trust relationship. In this third stage of trust development, trust is mainly formed and influenced by joint values, tasks and goals, by creating a collective identity (e.g., by creating a common logo or a common team-name, etc.), and by physical proximity (cf. Shapiro et al., 1992; Lewicki and Bunker, 1996; Ratnasingham, 1998). The third stage of trust builds on the other two stages and also results from a longer history of interactions (i.e., “the more frequently persons interact with one another, the stronger their sentiments of friendship for one another are apt to be”, Homans, 1950, p. 133, quoted in Granovetter, 1973, p. 1362).²⁵

²⁵ Note that also other researchers, like Zucker (1986), Newell and Swan (2000) or Koehn (2003) proposed quite similar notions and stages of trust, yet with slightly different labels.

However, not all trust relationships may pass through all the stages and may fully develop, especially in business relationships which do not require more than just sporadic, infrequent transactions or if trust is betrayed. Reasons for trust relationships not to proceed to the highest, identification-based stage of trust may also be the lack of will to enter such a close relationship or simply lack of time to invest more effort into the relationship beyond the second stage (Lewicki and Bunker, 1996). Generally most trust relationships will surpass the first, calculus-driven stage of trust and reach the second, knowledge-based stage, while only a few relationships may go beyond that and become grounded in identification and empathy (Lewicki and Bunker, 1996; Ratnasingham, 1998) (for a graphical illustration see figure 6).

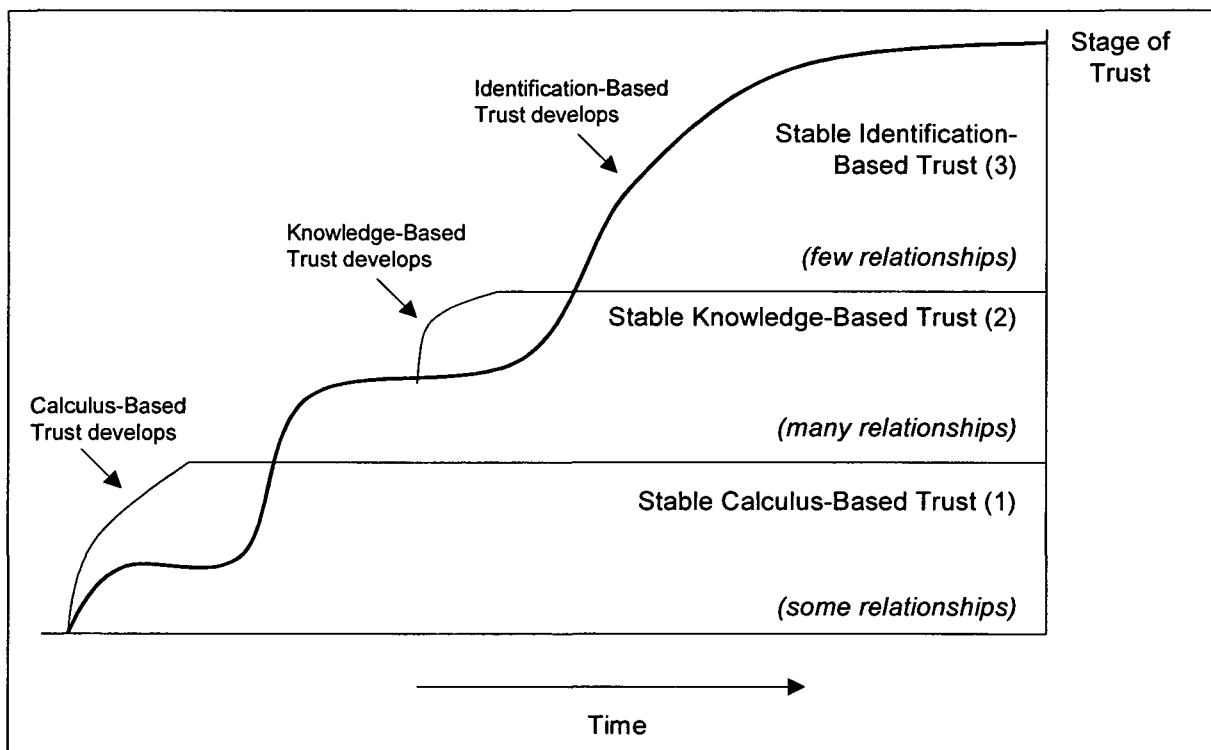


Figure 6. Stages of Trust-Development.

Source: Adapted from Lewicki and Bunker (1996, p. 124) and Ratnasingham (1998, p. 163)

Essentially decline or dissolution of trust is possible at all times of a trust relationships. A decline of trust may be triggered by one single incident resulting in a total collapse of trust or by a slow, continuous erosion of trust due to a number of smaller incidents (Lewicki and Bunker, 1996). Luhmann (1989) assumed that there are certain threshold values or stimuli in a

trust relationship. If a certain act of the other (trusted) party does exceed this threshold, trust may collapse and abruptly become distrust while below this threshold negative acts may go unnoticed or may not be interpreted as betrayal. In the earliest stage of trust development (i.e., calculus-based stage), where past experience is fully or mostly lacking, trust is most fragile and may easily be destroyed. Generally, in this first stage the trusting parties will tend to protect themselves from potential opportunism and employ safety mechanisms, therefore potential losses in case of deceit will be rather limited. During the second, knowledge-based stage of trust development, trust may erode if acts of the trustee become unpredictable in the eyes of the trustor and question the underlying predictability assumption. In other words, if a violation of trust occurs which can not be understood by the trustor on the grounds of their past history or which may not be excusable due to an unforeseen situational event, then the trustee's behavior will be regarded as randomly and trust is likely to collapse. Trust relationships which reached the third stage (i.e., identification-based trust stage) will be quite robust in regard to violations which would potentially destroy calculus-based or knowledge-based trust relationships. However, any trust violation on the third level of trust which targets the common goals, values and morals of the parties may be fatal to the trust relationship and cause it to collapse (cf. Lewicki and Bunker, 1996).²⁶

²⁶ While the three hierarchical stages of trust development may apply to the majority of trust relationships there are also a few exceptional situations in which they may not be able to explain the nature of trust development. One exception is created by *temporary groups*. Temporary groups are characterized by a finite life span, consisting of a set of participants with diverse skills and fields of expertise which are assembled by a lead organizer/contractor, usually the participants have no prior history of working together but are often part of a small labor pool or professional network, the task the participants work on has a fixed deadline and is typically non-routine and quite complex requiring continuous interdependent work (e.g., in the case of film crews, election campaign organizations, or auditing teams) (Meyerson, Weick and Kramer, 1996, p. 169). Researchers have found that in such temporary groups trust is surprisingly quickly formed (termed "swift trust") without the stages and antecedents of trust that usually apply in regular relationships (i.e., such as familiarity, a common history and shared experiences, etc.) but that trust in such groups is based on the participants' belief in the reputation of the contractor in regard to successful group selection, network-based threats to the reputation of opportunistic participants (due to the small labor pool and inter-network communication), because interaction tends to be based on roles (i.e., fields of expertise) and role expectations rather than on persons within the group, and due to the great time pressure which facilitates the use of mental shortcuts (such as trust) (cf. Meyerson et al., 1996).

2.7. Types of Trust

In the following section different types of trust, grounded in several different research disciplines, will be introduced and discussed. Contrary to the three notions of trust during the developmental stages of trust (see section 2.6.), the types of trust presented in the following are themselves independent from the element of time and not directly related to the stages of a trust relationship but are general typological trust-categories. The major element in this categorization is the *object* of trust (i.e., general others, specific others, social/institutional structures, etc.). Furthermore, the discussed forms of trust can be separated from each other by their relative stability across situations (situation specific versus cross-situational) and by their relative stability across persons (person specific versus cross-personal) (cf. McKnight and Chervany, 2001-2002).

2.7.1. Dispositional Trust

One of the first fields of research in which scholars investigated the concept of trust was the discipline of social psychology, especially by Jason B. Rotter (1967, 1971, 1980; see also section 2.2.1). He researched generalized trust of individuals in other people, defining it as “a generalized expectancy held by an individual or a group that the word, promise, oral or written statement of another individual or group can be relied on” (Rotter, 1980, p. 1). According to Rotter this expectancy or generalized attitude – as he also called it - is learned from parents, peers, authorities and is generalized from one social object to another (i.e., it is cross-personal), forming a relatively stable personality trait of the individual (cf. Rotter, 1967, 1980). Rotter (1967, 1971) assumed this generalized form of trust to differ from the broad concept of “basic trust” discussed in developmental psychology by Erikson (1968, 1995).²⁷ However, although these two concepts might conceptually differ from each other, one might still expect that the generalized trust towards others, which Rotter was investigating, is based

²⁷ Erikson assumed that basic trust is developed by the newborn child through experiences in the very first year of development after birth, during the so-called “oral phase”. Basic trust is a result of the interaction between the mother (i.e., caregiver) and the child in which the mother needs to communicate to the child to trust (cf. Erikson, 1968, p. 96). The amount of trust the individual derives from these earliest infantile experiences depends on the quality of the maternal relationship. While Erikson (1968, 1995) was primarily a theoretician, empirical research on basic trust can be for example found in Ainsworth (1967; see also Ainsworth, 1969, for a conceptual paper).

on the level of basic trust developed by the individual through early childhood (see also Luhmann, 1989, p. 29 and Giddens, 1990, p. 95).

Partly adopting Rotter's concepts, partly based on independent theories, several other researchers have also argued that there is something like an individual's general "propensity" or "disposition" to trust other people. This type of trust is for example discussed in Johnson-George and Swap (1982), Yamagishi and Yamagishi (1994), Mayer et al. (1995), McKnight et al. (1998), McKnight and Chervany (1996, 2001, 2001-2002), Ripperger (1998), Yamagishi et al. (1999), Gefen (2000), Cheung and Lee (2000), Hardin (2002) or Koufaris and Hampton-Sosa (2002a). Yamagishi and Yamagishi for instance draw from Rotter with their concept of "general trust" toward organizations and people, which they consider to be "a positive cognitive bias" and define it as "a belief in the benevolence of human nature in general and thus not limited to particular objects" (Yamagishi and Yamagishi, 1994, p. 139). Yamagishi et al., in a later study, changed this definition slightly and propose general trust to be the "default expectations of other people's trustworthiness" and that people with higher levels of generalized trust tend to assume a priori that other people are trustworthy unless proven otherwise (Yamagishi et al., 1999, p. 149). Also based on the works of Rotter, Mayer et al. (1995, p. 715) proposed the existence of a certain amount of dispositional trust within the individual and defined it as "a stable within-party factor that will affect the likelihood the party will trust" and as "the general willingness to trust others". Yet, Mayer et al. (1995) used the term "propensity to trust" for this construct instead. They also assumed that the strength of this general trust propensity varies among individuals due to different "developmental experiences, personality types, and cultural backgrounds" (Mayer et al., 1995, p. 715). Furthermore, Giddens (1990) agreed that there is a general form of trust towards others and termed it "elementary trust", which he assumed to be related to Erikson's notion of basic trust. Giddens considered this general trust to contribute to a "practical consciousness" (Giddens, 1990, p. 99) and to form "a continuing protective device ... against the anxieties which even the most casual encounter with others can potentially provoke" (Giddens, 1990, p. 99; see also Miztal, 1996). Again, McKnight et al. (1998) used the term "disposition to trust" for this type of trust and conceptualized it as the degree to which an individual shows a consistent tendency to be willing to depend on other people across persons and situations. McKnight et al. (1998) divided the construct "disposition to trust" further into the two dimensions "faith in humanity" and "trusting stance". While faith in humanity refers to the belief that others are generally reliable and benevolent, trusting stance is the belief that, even if others may not

always be dependable, one will still gain better interpersonal outcomes by dealing with others as if they would be benevolent and reliable, in other words it is a general personal strategy to trust others unless they prove to be untrustworthy (cf. McKnight et al., 1998). Ripperger (1998), on the other hand, similar to Yamagishi and Yamagishi (1994), used the term “generalized trust” and considered this type of trust to be a general attitude resulting from prior positive experiences in life. Ripperger (1998, pp.101-104) theorized that this construct represents a generalized attitude and becomes stable towards certain groups of people based on categorizing certain of their characteristics and attributes (see also Schottländer, 1957, p. 16). Again, Hardin (2002) characterized this type of trust as a “generalized optimism” about the trustworthiness of others (cf. Hardin, 2002, pp. 61-62) and assumed that generalized trust toward others would increase the willingness of the individual to take small risks in dealing with specific others with whom one is not yet familiar (Hardin, 2002, p. 62).

While the labels for this generalized form of trust slightly vary among researchers (e.g., “disposition to trust”, “propensity to trust”, “general trust”, “generalized trust”) there is clearly a widespread agreement among scholars that such a general disposition to trust others exists and varies across individuals.²⁸

²⁸ The concept of “dispositional trust” is one of the few areas of trust being quite extensively empirically measured by scholars in the past. The first and most popular scale for measuring generalized interpersonal trust was developed by Rotter (1967), well known as “The Interpersonal Trust Scale” (ITS), consisting of 25 trust items covering a wide range of social objects and areas of behavior. Rotter’s additive scale used items like “In dealing with strangers one is better off to be cautious until they have provided evidence that they are trustworthy.”, “Parents usually can be relied upon to keep their promises.” or “Most elected public officials are really sincere in their campaign promises.” to measure people’s generalized trust (cf. Rotter, 1967). Subsequently, Rotter’s original scale was used in many other studies (e.g. in Rotter, 1971, 1980 or in Kaplan, 1973, as well as in Amelang, Gold and Külbel, 1984) and just experienced a recent “renaissance” in the field of MIS research with studies using parts or adaptations of the original ITS or newly developed scales based upon Rotter’s background (e.g. in Gefen, 2000; Lee and Turban, 2001, or Koufaris and Hampton-Sosa, 2002a). However, scholars using dispositional trust constructs in their research have gathered relatively mixed results regarding its significance (McKnight et al., 1998). There has also been criticism of the ITS. One of the critics of Rotter’s approach was Kaplan (1973), who tested the scale with a new sample and analyzed it via a factor analysis finding evidence that the ITS is not one-dimensional but that it rather measures three different factors or dimensions, namely “sincerity of others”, “caution of others”, and “trust in institutions” (cf. Kaplan, 1973; see also Petermann, 1992). Kaplan also criticized the loose wording of Rotter’s ITS which often started items with the phrase “most people” (cf. Kaplan, 1973), a critique supported by Hardin (2002) who states that such

Fukuyama (1995) also discussed cultural differences of generalized/dispositional trust, yet, mainly on the societal/macro-level of analysis. Fukuyama hypothesized that generalized social trust will be relatively higher in group-oriented countries (he uses Germany and Japan as examples) and in individualistic countries in which there is an absence of a strong state and the existence of many voluntary, intermediary associations (e.g. in the USA), while he assumed it to be relatively lower in countries with a strong state (e.g. in France) or in countries in which the family holds a central role in life (Confucian societies or Italy) (cf. Fukuyama, 1995). Empirical findings of Yamagishi and Yamagishi (1994) on Japanese and US-Americans further suggest that this general trust may be relatively higher among US-citizens than among Japanese citizens, providing additional support for the assumption that there might be different levels of general trust across countries (see also Zak, 2003, for more current empirical evidence²⁹).

Another, relatively new question which has been raised regarding the psychological concept of generalized/dispositional trust is if only people may be the object of this type of trust or if the concept is extendable towards expert or technical systems (e.g. discussed in Giddens, 1990, and Sztompka, 1999). Some scholars argue that the steady increase of automated systems, personal computers and computer networks in the industrialized world during the 20th century might have led to something like a learned disposition of individuals toward technical systems they encounter in their daily lives. Kuhlen (1999, p. 89) is one of the proponents of such an extension of the concept of dispositional trust. In a conceptual paper Kuhlen (1999) argued that in western societies, during primary socialization and primary and secondary education people receive a certain level of trust in technology (he draws from Giddens, who claimed that the modern educational system teaches us “respect for technical knowledge”, cf. Giddens, 1990, p. 89). Kuhlen hypothesized that additional to the impact of

ambiguous questions may cause vague answers which should not be interpreted as generalized trust toward others based upon childhood experiences.

²⁹ Zak (2003) reports a cross-cultural survey, carried out in the year 1996, measuring generalized trust with items very similar to the ones used by Rotter (1967). The findings suggest that there are extreme differences regarding the answers given by respondents among more than three dozen countries included in the survey. The countries reporting the highest levels of trust were Norway (65% of respondents said they generally trusted most people) and Sweden (60%). The USA ranged in the upper-third with 36% of respondents generally trusting most people, below China (more than 50%) or Germany and Japan (both more than 40%). The countries holding positions at the very end of this comparison were found to be mainly from South America (e.g., Brazil with only 3% of respondents and Peru with 5% of respondents stating that they generally trust most people) and Africa.

socialization and education a positive trusting disposition toward technology is formed by one's own experiences with technical systems and by influences from the media. He suggested that this disposition is quite stable but needs to be constantly enforced (cf. Kuhlen, 1999). Indeed there are a handful of initial empirical findings providing slight support for the idea of a generalized tendency or disposition to trust technical systems. For example Dzindolet et al. (2003), conducting three experiments analyzing user trust in a "Contrast Detector" (a mock-up of a computer program said to detect camouflaged soldiers in a natural environment presented in electronic pictures), gathered several interesting results. One of their major findings was that generally the subjects in their studies had a priori positive expectations (i.e., a positive bias) toward the unfamiliar automated decision aid system. Interestingly, de Vries et al. (2003), reporting an experiment of user trust in a computer-based route planning system (users could choose between manual route planning and automatic route planning by the system while the error rate was manipulated by the researchers) found that the participants in their study generally and throughout the experiment showed a tendency to select the manual route planning mode even in cases where the system manipulated by the researchers was functioning very reliable, quite contrary to the initial positive tendency of users reported in Dzindolet et al. (2003). Hence, de Vries et al.'s (2003) finding may rather suggest a disposition to distrust technical systems.

Building on all these prior works, we will adopt the term *dispositional trust* for this thesis to refer to an individual's trust towards other people in general. Although we acknowledge that the newly proposed concept of dispositional trust in sophisticated automated technical systems of Kuhlen (1999) is an interesting new facet of generalized trust and found this new trend to be noteworthy, we do not include dispositional trust in technical systems or technology in our conceptualizations of trust in the subsequent sections of this thesis because we consider trust to be a social concept that is reserved for the case of relationships between people, groups of people (e.g., organizations) or social institutions backed up by people.

2.7.2. Impersonal Trust

According to Luhmann (1989), impersonal forms of trust are closely linked with the development of modern societies (see also Barber, 1983; Lewis and Weigert, 1985; Giddens, 1990; Misztal, 1996). While in primitive societies security of life was only based on

interpersonal trust in specific, familiar others or religious beliefs etc., and order was considered to be something normative, modern societies would not be able to cope with the increasing social complexity of the world without new modes of problem solving. Hence, with the increasing size of a highly differentiated society, new, impersonal forms of trust are employed (Luhmann, 1989). A general characterization of impersonal trust is provided by Shapiro, who stated that “[i]mpersonal trust arises when social-control mechanisms derived from social ties and direct contact between principal [trustor] and agent [trustee] are unavailable, when faceless and readily interchangeable individual or organizational agents exercise considerable delegated power and privilege on behalf of principals who can neither specify, scrutinize, evaluate, nor constrain their performance” (Shapiro, 1987, p. 634).

Analyzing the relevant literature, two different forms of impersonal trust can be identified, namely the relatively well established concept of *institutional-based trust* and trust in technical systems (i.e., *technological trust*), a new and quite disputed potential variant of impersonal trust. While the first type emerged primarily within the research discipline of sociology, the latter type, although with some of its origins in the sociological literature as well, is mostly discussed within the field of human-computer interaction and management information systems research.

2.7.2.1. Institutional-based Trust

One of the first sociologists devoting his research to the investigation of trust in modern societies was Niklas Luhmann (cf. e.g., Luhmann, 1988, 1989). He used the term “system trust” to refer to people’s trust in social institutions, because the power of interpersonal trust is more and more reduced in highly complex, modern societies (Luhmann, 1989) and “abstract systems” enable us to emancipate from the dependency of personal relations (Luhmann, 1989; see also Giddens, 1990).

Luhmann introduced the term “generalized communication media” (also referred to as “symbolic media of exchange” by Lewis and Weigert, 1985, p. 974) which, according to him, are for example power or money, enabling inter-subjective transference of selection services through long lines of subjects (Luhmann, 1989, p. 51). Luhmann especially stressed the example of money, which he considered to be a medium representing unlimited freedom of

limited choice of commodities, and the monetary system to explain his concept of system trust (Luhmann, 1989, p. 52). For the system to function, the individual needs to trust in money itself and in the monetary system, in other words one trusts in the functioning of a social system and not in familiar people. The individual needs to be able to entrust the bill, a mere symbol and piece of paper in his hand, to provide him with the opportunity to exchange goods and services with others. This type of trust is built up and self-enforced by continuous positive feedback and experience with money (Luhmann, 1989). While on one hand this system trust or institutional trust³⁰ is comparatively easier to learn than interpersonal trust in varying people, on the other hand this impersonal type of trust is harder to control by the individuals because of their lack of expert knowledge about the system (cf. Luhmann, 1989, pp. 53-54). Hence, the individual has to trust in a highly complex social system (and the people creating this system) which she or he personally may not be able to evaluate or completely understand, although it might be generally, objectively understandable (Luhmann, 1989; Shapiro, 1987; Giddens, 1990). As a consequence, although this new form of trust reduces complexity of social life, it creates new forms of risk as well, due to the loss of security based upon personal relations and personal familiarity and the lack of technical competence of the trustor (to evaluate the system). Therefore, in order to build up and sustain system/institutional trust the individual needs to place trust in certain controlling mechanisms, e.g. experts constantly monitoring the correct functioning of the system (Luhmann, 1989; see

³⁰ In fact, both terms, “system” and “institution” may be used interchangeably. Various trust-researchers have used these two terms interchangeably and referred with them to more or less the same idea and domain: Luhmann (1989) used the term “system” and the example of trust in the monetary system (i.e., a social institution). Very similarly, Lewis and Weigert (1985, p. 973) stated “...system trust (i.e., trust in the functioning of bureaucratic sanctions and safeguards, especially the legal system)”, whereby these examples are considered to be social institutions by many other scholars. Another example for the interchangeable usage of system and institution is Barber (1983, p. 18) who explained: “... trust as existing not only between individual actors but also between individuals and systems - indeed, even between and among systems. An individual actor is often concerned to get competent performance or fiduciary responsibility not just from a particular lawyer or teacher or doctor but from some legal or educational or medical organization or from these systems as a whole. That is why national samples of Americans feel able to respond when social science survey researchers ask them about their confidence in various American institutions”. Another example are McKnight and Chervany (1996, pp. 36-37), who used the construct “system trust” to refer to an individual’s belief in “structural assurances” such as contracts, regulations and guarantees and “situational normality” (i.e., the feeling that a certain situation is familiar, common and customary and that one’s own social role and those of others in this situation is also familiar and customary) and re-worded this construct into “institution-based trust” in their later publications (e.g., McKnight and Chervany, 2001-2002, p. 41).

also Shapiro, 1987). Despite introducing these new risks, for Luhmann, individuals in modern societies practically can not refrain from trusting in the powerful social institutions in their daily lives, thus, this impersonal form of trust, contrary to interpersonal trust, should not be considered to be a subjective act which might be consciously granted or denied to another person (cf. Luhmann, 1989, p. 64).

Aside from Luhmann's works several other sociologists have recognized this specific impersonal type of trust, too. For example Barber (1983) acknowledged that trust can have different forms, not only among individuals but also between individuals and institutions, such as trust in educational organizations (cf. Barber, 1983, p. 18). Institutional-based trust, e.g. "trust in the functioning of bureaucratic sanctions and safeguards" such as "the legal system" is also recognized by Lewis and Weigert (1985, p. 973), who stated that this type of trust is not based upon an emotional bond between the parties but that it rests on the trustor's perception that "everything seems to be in order" (Lewis and Weigert, 1985, pp. 973-974). Also Zucker (1986) discussed institutional-based trust, which for her is either linked with "formal societal structures" or "intermediary mechanisms" (Zucker, 1986, p. 53). According to Zucker institutional-based trust may be established based on membership of the person or company in a certain subculture governed by specific role-expectations and professionalization (e.g. membership in a professional association or professional certification) or institutional-based trust may be grounded in formal intermediary mechanisms included in the exchange process, such as escrow companies or other trusted-third parties (Zucker, 1986). Zucker (1986) also suggested that both variants of institutional-based trust are signals for others (see section 3.3.5. for an overview of signaling mechanisms) and may facilitate the establishment of an exchange relationship. Giddens (1990) acknowledged the existence of institutional-based trust as well and distinguished between trust in individuals and trust in abstract systems which, according to Giddens, may take different forms. One form of abstract systems are "symbolic tokens", such as money (Giddens, 1990; Shapiro, 1987, pp. 628-629, similarly mentioned "symbolic forms of wealth and property" such as licenses, contracts, stocks, bonds or credit cards). For Giddens such abstract systems are mechanisms of "social disembedding", i.e. "they remove social relations from the immediacies of the context" and they provide "guarantees of expectations" across distanced time and space (Giddens, 1990, p. 28; see also Mizralski, 1996, pp. 20-21). Another proponent of institutional-based trust is Sztompka (1999, pp. 42-46), who recognized a number of potential "social objects" of trust aside from interpersonal objects. He considered the overall social system and

social order, social institutions and organizations, institutionalized procedures such as the process of law, certain social roles such as medical doctors or teachers, and members of a certain social groups, all to be objects of institutional-based trust in our daily lives. Hence, sociologist (e.g., Barber, 1983; Lewis and Weigert, 1985; Zucker, 1986; Shapiro, 1987; Luhmann, 1988, 1989; Giddens, 1990; Misztal, 1996; Sztomka, 1999) generally agree on the existence of impersonal institutional-based trust and its importance in modern societies, although sometimes the terminologies employed by the researchers vary (e.g. “system trust”, “institutional trust”, “social trust”).

Also economist Williamson (1993, p. 486) recognized the existence of “institutional trust” targeting “the social and organizational context within which contracts are embedded” in his works. Recently discussions on institutional-based trust were further extended to the organizational theory literature (e.g., McKnight et al. 1998) and the management information systems literature (e.g., McKnight and Chervany, 1996, 2001, 2001-2002). McKnight and his colleagues, being probably the first to adopt these ideas in these new fields, consider institutional-based trust to be a belief of the individual trustor “that the necessary impersonal structures are in place to enable one to act in anticipation of a successful future endeavor” (McKnight et al., 1998, p. 478). These impersonal structures per se do not constitute a trust construct but the trustor’s beliefs about them do (cf. McKnight and Chervany, 1996). McKnight et al. proposed that institutional-based trust exists in two distinct forms or dimensions, namely “structural assurances” and “situational normality”. Structural assurances comprise such safety nets as regulations, guarantees, contracts and legal recourse or assurance procedures (cf. McKnight and Chervany, 1996; McKnight et al. 1998; Shapiro, 1987; see also Williamson, 1993, p. 476, similarly talking about “transaction-specific safeguards”). Situational normality on the other hand is situation specific and the belief that the outcome of a situation will be beneficial because the situation is perceived as being normal and that “everything seems in proper order” based on past experience (McKnight et al., 1998; Lewis and Weigert, 1985, p. 974; see also Baier, 1986, p. 245). In the latter case trust formation is facilitated because people tend to feel more comfortable in situations which are familiar to them and because in a familiar situation one feels secure about one’s own role and about the role of the other person (McKnight and Chervany, 1996; McKnight et al., 1998).

2.7.2.2. Technological trust

Up until recently sociologists, when writing about “systems” usually only meant social institutions, such as the above mentioned examples of the monetary system (Luhmann, 1989; Lewis and Weigert, 1985), the legitimacy of political leadership and authority (Luhmann, 1989; Lewis and Weigert, 1985), the judicial system (Lewis and Weigert, 1985), the pension system (Shapiro, 1987), educational institutions (Barber, 1983) or religious institutions (Lewis and Weigert, 1985).³¹ However, since the 1990s, possibly due to the heavy increase of technology in our everyday lives (e.g. personal computers, Internet, mobile phones, ubiquitous computing, etc.), this view seems to have changed and the term “abstract systems” has been recently extended toward additional objects, namely, expert systems or technical systems (cf. Giddens, 1990, and Sztompka, 1999). One of the first sociologists discussing new objects of impersonal trust and extending the existing terminology was Giddens (1990). He stated that “the nature of modern institutions is deeply bound up with the mechanisms of trust in abstract systems, especially trust in expert systems” (Giddens, 1990, p. 83). For him expert systems are “systems of technical accomplishment or professional expertise that organise large areas of the material and social environments in which we live today” (Giddens, 1990, p. 27). In other words, Giddens’ term “expert systems” refers to both, “classic” social institutions (e.g., such as judicial system or educational institutions), but additionally also to technical systems such as means of transportation (e.g. cars or planes) (cf. Giddens, 1990). Although Giddens proposed the idea of impersonal trust in expert systems, he emphasized the importance of so called “access points” of these expert systems, where the individual gets in contact with real people operating the system. These access points, which he considered to be a form of “social re-embedding”, are critical for the sustainability of people’s trust in these expert systems. Trust may be either increased or decreased, depending on the outcome of these contacts or via information from the mass media and other sources available for the lay person (cf. Giddens, 1990, pp. 90-91). Also Sztompka (1999) extended the classic sociological view of impersonal trust by adding trust in technological systems in his works, basing his assumptions partly on Giddens’ (1990). Sztompka brought up such examples as telecommunications, transportation systems or computer networks as objects of, what he calls, “technological trust”. He stated that the users of these systems do not understand their detailed

³¹ Note that Luhmann, applying a system-theory framework as basis for this conceptual works, also stated that the object of system trust may not be only social systems but also other persons, representing personal systems (Luhmann, 1989, p. 23).

functioning but “we have learned to rely on them” and “take them for granted” (Sztompka, 1999, p. 45), very similar to Giddens, who too emphasized the terms “reliability” and “to rely” in this context (cf. e.g. “trust in the reliability of nonhuman objects”, in Giddens, 1990, p. 97). Unfortunately, this is a very vague terminology because it uses the terms trust and reliability/reliance quite interchangeably, making it hard to determine if it is really trust Giddens and Sztompka talk about or if technological trust is nothing more than reliance which we consider conceptually distinct from trust in this thesis (see section 2.4.3.).

In recent years especially scholars from the fields of human-computer interaction (HCI) and management information systems (MIS) research have started to devote their thoughts to the idea of user trust in automated systems, information systems and computer-mediated networks such as the Internet.³² In the course of these research streams scholars mainly tried to adapt existing theories from social sciences, especially sociology, for their new contexts. Probably one of the very first HCI studies on trust between humans (i.e., users) and machines was carried out by Muir and Moray (e.g., Muir and Moray, 1996). They slightly adapted the conceptualization of trust by sociologist Bernard Barber (1983) and adapted it for the case of “non-human objects of trust”, assuming that technological trust in automation would consist of three expectations, namely, “the operator’s general expectation of the *persistence* of the natural order, .. a specific expectation of the *technical competence* of the automation and .. a specific expectation of the *fiduciary responsibility* of the automation” (Muir and Moray, 1996, p. 432). While the first two expectations align with the concepts of confidence and reliance, the third expectations regarding the fiduciary responsibility of the automation would suggest that in Muir and Moray’s study really trust was measured. They experimentally tested their model using a simulation of a pasteurizer plant and found support for their assumption regarding user trust in automated systems. However, while their definition suggested that it is trust they were investigating, the operationalization of the trust construct, although using the

³² Literature on this topic can even be found within anthropology. For example Claessens (1993), an anthropologist, claims that humans very early developed a relationship toward their tools in whose creation they had invested high amounts of time and with which the owner was very satisfied. According to him, such a relation could easily take a personal relationship kind of character. Claessens uses the example of humans being keen on not to borrow a highly valued tool to others and sometimes even talking or mumbling to their tools. He argues that using the tool in its own is a form of communication and that the tool also received a person like character in the eyes of the other members of the group the owner of the tool belonged to. For example others perceiving that the tool belongs to the owner and it “obeying” to his orders (Claessens, 1993, p. 304).

term “trust” rather focused on facets of technical reliability of the systems (they used rating-scales and requested the user/operator to rate such items like, e.g., “your degree of *trust* in the pump’s *display*” or “your degree of *trust* in the pump to *respond* accurately”, Muir and Moray, 1996, p. 435). Other HCI studies, also trying to investigate the construct of trust in the context of humans working with computer/software programs, were for example conducted by Nass et al. (1995), Nass et al. (1996), Fogg and Nass (1997), Cassell and Bickmore (2000), de Vries et al. (2003) or Dzindolet et al. (2003), with mixed results. Conceptual papers and empirical studies on user trust in technical systems can also be found within management information systems research. Examples are Lee and Turban (2001), Kim and Prabhakar (2002), Chellappa and Pavlou (2002) who generally tended to focus on “competence trust” and such facets as correctness, availability, reliability of a technical system (e.g., a computer network).

While Corritore et al. (2003) in a recent paper on online trust on the Internet propagate the idea of technological trust and technology being an object of trust, referring to the works of HCI researchers and arguing that “these technologies are social actors in the sense that they have a social presence” (Corritore et al., 2003, p. 740), this view is criticized by numerous scholars. For example Gefen et al. (2003) consider trust to be only a social construct of which one should only talk in regard to people and organizations. They stated, “[t]rust in a technology, while dealing with capability and reliability, lacks the essential elements of integrity and benevolence...” (Gefen et al., 2003, p. 55; see also Shneiderman, 2000). Other critiques are Friedman, Kahn and Howe (2000, p. 34), who stated that one can only trust in the system’s engineers or developers of a technology (i.e., people), using the example of technical failures and mentioning that because a system has no morals, the user can not equate technical failures with violations of trust (Friedman et al., 2000, p. 35). But the question of technological trust has not only been discussed within sociology, HCI and MIS research but also in the field of marketing and management (e.g., by Ripperger, 1998; Grabner-Kräuter, 2002b; Einwiller, 2002). Grabner-Kräuter (2002b), again using the Internet as example argued that when it comes to transactions on the Internet, due to the relative newness of this medium and many people perceiving it to be a risky environment, people still do not engage in passive confidence or reliance on the technological system. According to Grabner-Kräuter (2002b) transactions on the Internet are, for the time being, situations of very conscious active behavior because familiar offline alternatives are easy available. She argued that if the individual perceives alternatives of action and makes a conscious decision, e.g., to use the

Internet, a technological system, as transaction medium despite perception of risk and potential harm, Grabner-Kräuter (2002b) concluded that it may be a situation of trust. This view is shared by Ripperger (1998, p. 37) who stated that if one should talk of “trust” or “reliance” strongly depends on how the individual perceives a situation.

After presenting these manifold, often incommensurable views on the question of the existence technological trust and the obviously blurred line between the constructs of trust, reliance and confidence in this context, we draw following conclusions for this thesis: There is no interpersonal nor impersonal trust in a technological system per se but users trust in the (unfamiliar) people designing, operating, monitoring and using these systems. Hence, we generally agree with Friedman et al. (2000) and partly with Giddens (1990) when he emphasizes the social embeddedness of expert or technological systems and “access points”, and when Giddens (1990, p. 84) speaks about “[t]he reliance [sic!] placed by lay actors upon expert systems”, as well as with Shneiderman (2000) and Hardin (2002) who both stressed the fact that the other (trusted) party also needs to have freedom of choice in a trust relationship, which is not the case when the object of trust is a non-human technical system which has no will of its own nor intentionality. However, concluding that users trust either in the people “behind” the technological system or rely on the well-functioning, correctness, reliability and error-freeness of the technical system indicates that “technological trust” may be nothing else than either a facet of institutional-based trust or of reliance, depending on the given context, and not a new, separate and distinct theoretical trust-construct. In the subsequent sections of the thesis we will therefore not embrace the views of proponents of “technological trust” but will subsume this concept under the group of institutional-based beliefs (see also section 3.6.2.3.).

2.7.3. Interpersonal Trust

Interpersonal trust, the main construct of interest in this thesis, refers to a party’s trust in a specific person (or specific organization/company).³³ It is the type of trust which has been in the focus of the majority of empirical trust research in the field of social psychology (e.g. in Deutsch, 1960b; Zand, 1972; Scott, 1980; Johnson-George and Swap, 1982; Butler and

³³ Note that if we use the term “trust” without any prefix in the remainder of this thesis, we usually refer to interpersonal trust.

Cantrell, 1984; Schweer, 1997; see also Neubauer, 1997 and Schmidt-Rathjens and Amelang, 1997). McKnight et al. (1998) proposed interpersonal trust to consist of two distinct but related dimensions, namely, a belief dimension and a behavioral intention dimension. The first dimension is represented by the construct “trusting beliefs” about the other party, while the second dimension is termed “trusting intention to depend” on the other party in a specific situation of risk (McKnight and Chervany, 1996). This conceptual separation of beliefs and behavioral intentions is based upon the work of Fishbein and Ajzen (1975, see also the “Theory of Reasoned Action” in section 3.3.1. of this thesis).

2.7.3.1. Trusting Beliefs

The theoretical construct “trusting beliefs” is a cognitive-affective belief (i.e., a perception) of the individual about certain attributes or characteristics of the other party which are beneficial to the trusting party (McKnight and Chervany, 2001-2002). Essentially, these relevant characteristics are the other party’s perceived benevolence, perceived integrity and perceived competence. In other words, the other party’s *perceived trustworthiness*³⁴ in the given situation.³⁵

³⁴ Note that while in section 2.4.1. the actual trustworthiness of the trusted party (i.e., a virtue, characteristic or intentional behavior of a party consisting of competence, integrity and benevolence, and in some cases also predictability) was discussed and distinguished from the construct of trust, here, the trustor’s trusting beliefs about the other (trusted) party’s trustworthiness form a dimension of interpersonal trust. Or put in the words of Hardin (2002, p. 10): “The declarations ‘I believe you are trustworthy’ and ‘I trust you’ are equivalent”. At the initial stage of a trust relationship trusting beliefs refer to the *subjective perception* of the trustor about the other party’s competence, integrity and benevolence.

³⁵ While the construct trusting beliefs is clearly person-specific, McKnight and Chervany are quite contradictory in their works regarding the question if trusting beliefs is cross-situational (i.e., formed once for a specific party and remaining relatively stable across various encounters) or depending on the given situation (i.e., the perception of the three trusting beliefs facets of the other party is newly evaluated/up-dated from one situation to another). McKnight and Chervany (1996, p. 33) for example wrote “The Trusting Beliefs construct is shown as person- and situation-specific” whereas in McKnight and Chervany (2001, p. 36) they concluded that “trusting beliefs is defined to be person-specific but not situation-specific” and also in McKnight and Chervany (2001-2002, p. 44) where they considered trusting beliefs to be cross-situational. Given these unclear characterization of the trusting beliefs construct by McKnight and Chervany we conclude for this thesis that trusting beliefs are rather situation- or domain-specific than fully cross-situational. The perceived competence of a party is certainly depending on the situation or domain in question, and although the perceived benevolence and integrity of a

The first facet of trusting beliefs, perceived competence, can be defined as the trustor's believe that the other party has the ability and power and the necessary technical skills to do for the trustor what he needs to be done (cf. McKnight and Cervany, 2001, p. 36; Mayer et al., 1995, p. 717). Perceived benevolence may be defined as the trustor's believe that the other party cares about the trustor's welfare and is motivated to act in the trustor's best interest aside from egocentric profit motives (cf. McKnight and Cervany, 2001, p. 36; Mayer et al., 1995, p. 718). The third element of trusting beliefs, perceived integrity, may be defined as the trustor's believe that the other party adheres to a set of common moral principles (i.e., tells the truth, makes good faith agreements, fulfills promises) (cf. McKnight and Cervany, 2001, p. 36; Mayer et al., 1995, p. 719).

Hence, if all these three facets are combined and perceived to be high, the trustee is likely to be considered very trustworthy in the eyes of the trustor and trust-formation should be strongly facilitated (Mayer et al., 1995; McKnight and Chervany, 2001-2002). Yet, the degree to which each of the three trusting beliefs facets are perceived to be fulfilled may vary. In other words, a party may be for example perceived to be highly competent, acceptable regarding keeping its promises and communicating in a truthful manner (i.e., perceived integrity) and mediocre regarding its motivation to care about the other party and to act in an unselfish manner (i.e., perceived benevolence).³⁶ The relative importance of each of these three characteristics depends on the needs and expectations of the trustor in a given context (McKnight and Chervany, 2001).

2.7.3.2. Trusting Intention

The theoretical construct "trusting intention to depend" on the other party forms the second dimension of interpersonal trust. Trusting intention refers to the behavioral intention of the

party may be more stable through different situations their perception may still vary across different situations and domains.

³⁶ Whereas perceived competence forms a relatively independent facet of trusting beliefs, the perceived level of integrity and the perceived benevolence of the trusted party may be assumed to be stronger related to each other and less separable in the eyes of the trustor. Generally, a party who is perceived to be high on the integrity-dimension is likely to be perceived to be high on the benevolence-dimension as well because both characteristics cover the notion that the trustee will act positive toward the trustor (cf. McKnight and Chervany, 2001-2002, p. 50).

trustor to willingly depend on the other party (e.g., person, organization, company) in a certain, risky situation (in which the other party should do something on the trustor's behalf) with a feeling of relative security, even though the trustor cannot monitor or control the other party, which makes the trustor vulnerable and could potentially lead to negative consequences for the trustor (McKnight and Chervany, 1996, 2001, 2001-2002; Mayer et al., 1995).³⁷

Although the two constructs trusting beliefs and trusting intention, are both equally important dimensions of interpersonal trust toward the other (trusted) party, trusting beliefs are further assumed to be a direct antecedent and predictor of trusting intentions. Firstly, because strong beliefs that the other party is benevolent, honest (i.e., notion of integrity) and competent should clearly result in a stronger trusting intention to depend on the other party in a risky situation (cf. McKnight et al, 1998). Secondly, because the Theory of Reasoned Action (Fishbein and Ajzen, 1975; see chapter three) postulates that behavioral intentions are influenced by beliefs (McKnight and Chervany, 1996, 2001-2002).

³⁷ However, scholars are not completely clear if trusting intention should be regarded as a situation specific construct or as being cross-situational. Again McKnight and Chervany seem to be unsure on how to view their own construct (cf. e.g. McKnight and Chervany, 1996, p. 27 and p. 30, defining trusting intention as “the extent to which one party is willing to depend on the other party in a given situation...” and write “Trusting intention is *situation-specific*. One does not trust another person to do every task in one's behalf.”, and later in McKnight and Chervany, 2001, p. 34, where they state “Our definition refers to willingness or intention to depend on the other party generally – not in a specific situation, as some have proposed”, or in McKnight and Chervany, 2001-2002, p. 50, where they suggest that “*Willingness to depend* means that one is volitionally prepared to make oneself vulnerable to the other party in a situation by relying on the other party” and finally in McKnight et al., 2002, pp. 302-302, on a study on consumer trust in an e-commerce vendor where they state “Willingness to depend is general and non-committal” and “it is one thing to say one is willing in general to depend on a web vendor and a different thing to say one is willing to incur specific relationship risks through following vendor advice, sharing information, and purchasing). In the face of these mixed opinions we conclude for this thesis to view the construct trusting intention to depend as being rather situation- or domain-specific. However, we believe that both, trusting beliefs and trusting intention to depend may be initially more situation-specific but may gradually become domain-specific and later on even cross-situational if initial trust is fulfilled by the trustee and the trust-relationship between the parties is enforced (e.g., by trust-building initiatives of the trustee).

2.7.4. Trusting Behavior

In their early works McKnight and Chervany (1996, 2001) also suggested the construct “trusting behavior” to be another type of trust (cf. also Lewis and Weigert, 1985, who also shared this view). Using Fishbein and Ajzen’s Theory of Reasoned Action as underlying framework (see chapter three) they assumed that in addition to dispositional trust (i.e., a cognitive belief), institutional-based trust (i.e., a cognitive belief) and interpersonal trust (i.e., cognitive beliefs and behavioral intention) there would be a latent trust-construct covering overt trusting behavior of the trustor in a given situation as well, which should be measured via such manifest indicators like for example: providing information to the other party, cooperating, or placing resources in the other party’s hands (cf. McKnight and Chervany, 1996, p. 32). McKnight and Chervany (1996, p. 31) defined the trusting behavior construct as “the extent to which one person voluntarily ... depends on another person in a specific situation with a feeling of relative security, even though negative consequences are possible” and considered this construct to be person-specific (i.e., in a trust relationship with a specific party) and situation-specific. However, in a later paper McKnight and Chervany (2001-2002, p. 41) recognized that trusting behavior should not be regarded as a trust-construct or additional type of trust. Subsequently, they proposed to view “trusting-behavior” as a second order category for such behavioral constructs like cooperation, information sharing, entering agreements with the other party, risk taking, involvement with the other party, and to keep these overt behaviors separated and distinct from the actual trust constructs but integrally linked with them (McKnight and Chervany, 2001-2002). Similarly, Mayer et al. (1995, p. 724, p. 726) suggested actual risk-taking in the relationship is the behavioral manifestation of trust and a consequence of trusting the other party. Also Hardin (2002) argued that trust and acting from trust should be cleanly separated and that trust is cognitive and not behavioral and provided the following clarification: “I may act from my trust, and my action may give evidence of my trust, but my action is not itself the trust, although it may be compelling evidence of my trust.” (Hardin, 2002, p. 10). Essentially, we agree with Hardin (2002) that trusting behavior is not a form or type of trust. We consider trust to be cognitive and intentional but not behavioral. Behavioral manifestations on the basis of trust already represent such distinct constructs as cooperation, risk taking, information sharing or entering an agreement (cf. McKnight and Chervany, 2001-2002, p. 41).

2.7.5. Summary

Summarizing the different types of trust presented and discussed in the course of section 2.7. we conclude that generally three distinct but related major types of trust can be determined, namely: 1) dispositional trust, 2) impersonal trust (i.e., institutional-based trust in certain situations, social roles and structural assurances), 3) interpersonal trust (i.e., trusting beliefs about the other party, trusting intention to depend on the other party).

Dispositional trust is a generalized form of trust in other people (i.e., cross-personal) in different situations (i.e., cross-situational). It forms a relatively stable personality trait of an individual and is mainly formed during early childhood, yet we recognize that significant positive or negative incidents during adulthood of the individual may still have an impact on the person's level of dispositional trust. In this thesis we limit dispositional trust to the domain of people and do not embrace the idea of a general dispositional trust in technology or technological systems.

After discussing impersonal forms of trust we conclude that a person may form trust in social institutions, and situations. Generally, institution-based trust can take the form of trust in certain situations and social roles in these situations (i.e., the construct of situational normality) and trust in protective institutional structures (i.e., the construct of structural assurances) or in the functioning of certain social institutions. Institutional-based trust is not tied to specific, familiar persons (i.e., it is cross-personal) but is linked to certain social situations and social roles and to the availability of institutional safeguards protecting the individual in a certain situation (i.e., it is situation-specific). Although we also discussed impersonal technological trust, we reject the idea of trust in specific technological systems (e.g., an airplane, a computer system or the Internet) because it lacks essential attributes of trust and should therefore be regarded as either reliance or as a form of institutional-based trust depending on the specific situation.

Finally, interpersonal trust in a specific party (person or company) can be split into the interrelated constructs of trusting beliefs about the other party's benevolence, integrity and competence and into the trusting intention to depend on the other party based upon the trusting beliefs. Trusting beliefs and trusting intention to depend are both person-specific. While McKnight and Chervany are unclear if trusting beliefs and trusting intention should be

regarded as specific to a certain situation or as stable across situations, we conclude that in a newly formed trust relationship these two dimensions of interpersonal trust will be likely to be situation-specific while after initial trust is fulfilled and found to be justified and trust within the relationship develops and strengthens, trusting beliefs and trusting intentions will extend and become domain-specific and in certain personal relationships they may even become cross-situational.

Furthermore, we do not consider overt behavior based upon trust, which some scholars have termed "trusting behavior", to be a part of trust but regard it as a manifest consequence of trust which includes actual risk-taking of the trusting party. In the case of personal relationships overt behavior based upon trust may be for example sharing information or cooperation while in business relationships risk taking behavior based upon trust may be for example submitting personal and financial information to the other party or to transact business. (For a "grammatical overview" of the three types of trust and their objects of trust in the context of business relationships see figure 7.)

Regarding the nomological structure and relationships between these types of trust we assume trusting beliefs about the other party and trusting intention to depend on the other party (i.e., interpersonal trust) to be influenced by dispositional trust toward general others and by institutional-based trust in structural assurances and situations. Furthermore, we consider the construct trusting intention to depend on another party to be influenced by trusting beliefs about this party (McKnight and Chervany, 2001-2002).

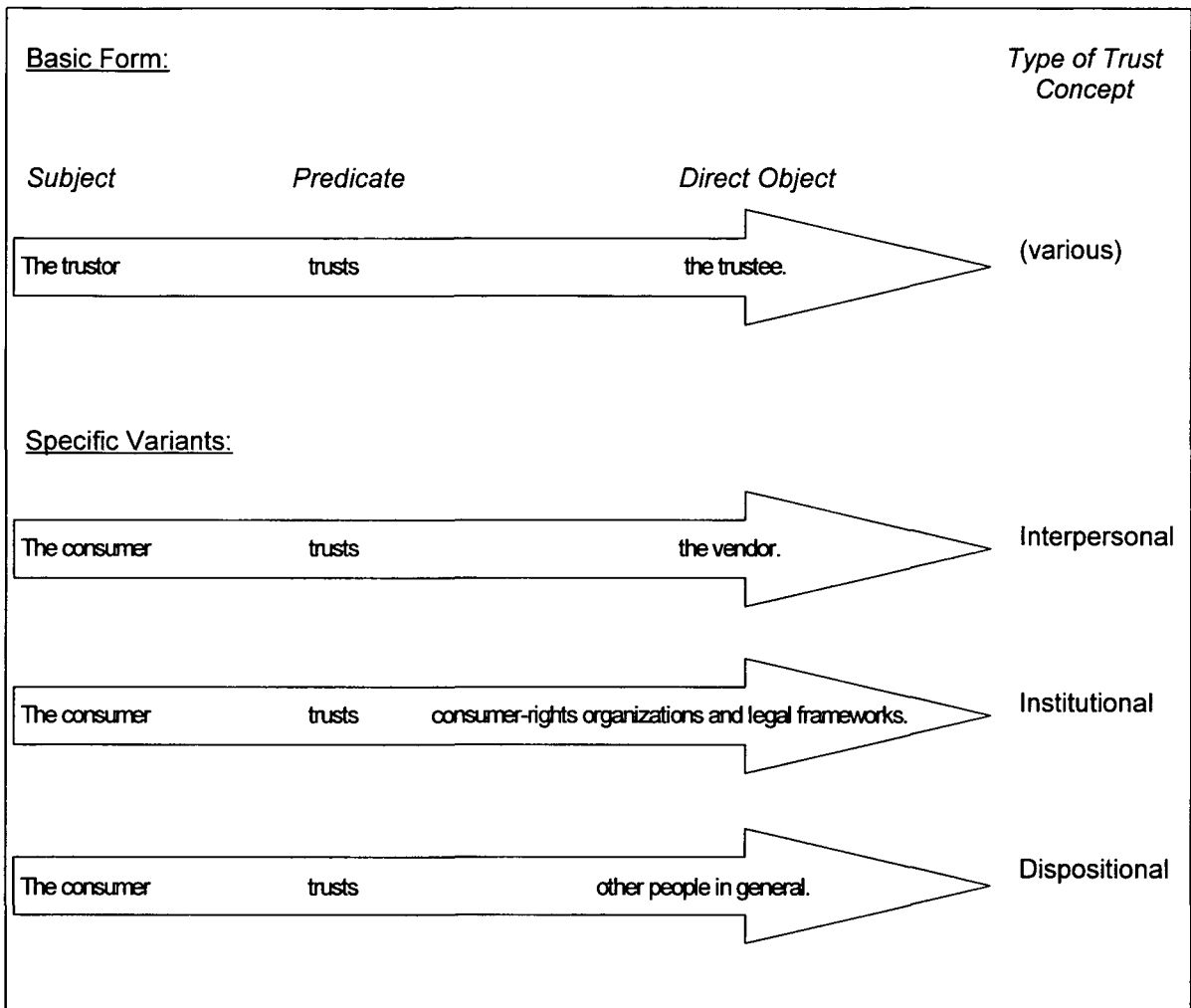


Figure 7. The Grammar of Trust.

Source: Adapted from McKnight and Chervany (2001-2002, p. 43)

3. Literature Review³⁸

This chapter aims at presenting the status quo of empirical research on consumer trust in the field of electronic commerce and provides an overview of the results of 24 published empirical studies ranging from the year 1999 to the year 2003.^{39 40} In order to increase the comparability of the examined studies a selection procedure had to be defined. To be included in the review the studies had to meet the following six selection criteria: 1) *focus on business-to-consumer e-commerce (e-retailing, e-banking and e-services)*, because business-to-business relationships significantly differ from relationships between consumers and online companies (e.g. when it comes to decision making and negotiations) and research on consumer-to-consumer (C2C) e-commerce is almost not existing – therefore, both latter aspects are outside of the scope of this research, 2) *use of primary data directly acquired from consumers*, to further reduce bias-effects which may add up if the data are processed by several parties, 3) *theory-guided research*, because serious empirical research has to be guided by theoretical frameworks, clearly defined constructs, formal research hypotheses and validated scales, 4) *trust being investigated as a dependent and/or independent variable in the research model*, to be able to distinguish between trust, its antecedents and outcomes and to avoid getting mixed-up by comparing studies on trust with research on similar constructs such as credibility, confidence or reliance etc., 5) *understandable operationalization of trust*, which is imperative for a critical analysis of the studies and, 6) *a quantitative research approach*, to further facilitate a comparison and critical assessment.

Several other empirical studies on online trust that did not meet the above mentioned criteria were not included in the following overview, mostly because the operationalization of trust

³⁸ This chapter is partly based on Grabner-Kräuter and Kaluscha (2003a, 2003d) but was largely modified and extended.

³⁹ Although an extensive search for prior theory-guided, empirical studies has been carried out, this overview is not claiming to incorporate all possible research results available to date. The studies were collected on the Internet using several search engines e.g. Google.com and through the available sources of the University of Klagenfurt's library e.g. Elsevier - ScienceDirect, Emerald, Kluwer Online, and Subito.

⁴⁰ The year 2003 as latest year of publication for empirical studies to be included in this review was willingly chosen by the author as an additional pre-defined "deadline" or selection criterion. However, one study, namely Koufaris and Hampton-Sosa (2004), was published after 2003 but was included in this review because it was already available on the Internet at Elsevier's ScienceDirect in December 2003.

was not understandable due to the fact that the employed measurement instruments were not included in the papers or because only constructs similar to trust, for example credibility, were measured (e.g., in Chircu, Davis and Kauffman, 2000; Krishnamurthy, 2001; Roy, Dewit and Aubert, 2001; Belanger, Hillier and Smith, 2002; Chai and Pavlou, 2002; Chellappa and Pavlou, 2002; Fogg, Kameda, Boyd, Marshall, Sethi, Sockol and Trowbridge, 2002; Park, 2002; Pavlou, 2002; Pavlou and Chai, 2002; Yoon, 2002; Suh and Han, 2003). However, for other purposes these studies may of course provide useful insights and will be even used in other sections of this thesis. Although each of the 24 selected and reviewed studies met the defined criteria, some of them still differ considerably in the profiles of their samples, their applied methodologies, and the conceptualization and operationalization of trust which should be kept in mind by the reader.

3.1. Context of the Reviewed Studies

Almost all of the 24 reviewed studies explored consumers' trust in relation to particular examples of online retailers, e.g. Amazon.com, or online service providers (also including particular online banks and one case of an Internet provider) (in Jarvenpaa, Tractinsky, Saarinen and Vitale, 1999; Jarvenpaa, Tractinsky and Vitale, 2000; Gefen, 2000; Gefen and Straub, 2003; de Ruyter, Wetzels and Kleijnen, 2001; Pavlou and Chellappa, 2001; Bhattacharjee, 2002; Einwiller, 2002; Gefen, 2002a; Gefen, 2002b; Koufaris and Hampton-Sosa, 2002a; Koufaris and Hampton-Sosa, 2002b; McKnight, Choudhury and Kacmar, 2002; Suh and Han, 2002; Teo and Liu, 2002; Chiou, 2003; Gefen, Karahanna and Straub, 2003; Lui and Jamieson, 2003; Koufaris and Hampton-Sosa, 2004; and partly in Pavlou, 2003). Only four of the 24 investigated papers examined antecedents and/or consequences of consumers' trust in electronic commerce in a rather general form, not linking the study to any particular Internet vendor (Lee and Turban, 2001; Kim and Prabhakar, 2002; Cheung and Lee, 2003; Das, Echambadi, McCardle and Luckett, 2003). Three of the studies were conducted in the context of online banking (Bhattacharjee, 2002, for the confirmatory study only; Kim and Prabhakar, 2002; Suh and Han, 2002).

3.2. Samples and Methodologies of the Reviewed Studies

The majority of the 24 reviewed studies used non-representative convenience samples consisting of undergraduate, graduate or MBA students who were administered questionnaires by the researchers or pointed to self-administered online questionnaire forms (in Jarvenpaa et al., 2000; Gefen, 2000; Gefen and Straub, 2003; Lee and Turban, 2001; Pavlou and Chellappa, 2001; Gefen, 2002a; Gefen, 2002b; Koufaris and Hampton-Sosa, 2002a, 2002b; McKnight et al., 2002; Cheung and Lee, 2003; Gefen et al., 2003; Koufaris and Hampton-Sosa, 2004; Lui and Jamieson, 2003). Three studies included both, students, for a first exploratory study, and non-student Internet users/consumers for a confirmatory study in their samples (in Jarvenpaa et al., 1999; Bhattacharjee, 2002; Pavlou, 2003). Only six of the studies (in Einwiller, 2002; Kim and Prabhakar, 2002; Suh and Han, 2002; Teo and Liu, 2002; Chiou, 2003; Das et al., 2003) exclusively used samples of non-student Internet users/consumers for their purpose. In one study (in de Ruyter et al., 2001) subjects were referred to only as “participants” making it impossible to determine further characteristics.

Concerning the applied methodologies, the approaches used by the researchers can be assigned to three categories. In the majority of studies a quantitative, “experiential survey approach” (Jarvenpaa et al., 2000) was employed, in other words, field-studies in which participants were asked to navigate to a specified or self-selected Internet company and to perform several predefined tasks (e.g., to surf through the website and to carry out a product search) and afterwards report on their impressions by filling out a questionnaire (in Jarvenpaa et al., 2000; Gefen, 2000; Gefen, 2002b and Gefen and Straub, 2003, employing a free simulation experiment⁴¹; Koufaris and Hampton-Sosa, 2002a; Koufaris and Hampton-Sosa, 2002b; Teo and Liu, 2002; Pavlou, 2003; Koufaris and Hampton-Sosa, 2004).

A second group of studies applied a “basic” quantitative survey approach, in other words, subjects were administered a questionnaire or they were pointed to an online-questionnaire form without previously visiting any particular e-commerce website as stimulus (in Lee and

⁴¹ A free simulation experiment is “a form of experimentation in which the IVs [independent variables] are not manipulated in order to examine [the] independent variables – dependent variables relationship, but are allowed to move freely over their natural range. Subjects are all presented with identical experimental tasks [i.e., treatments] and respond to these tasks with freely chosen choices.” (Gefen, Straub and Bourdieu, 2000, p. 75; see also Gefen and Straub, 2000, and Gefen, 2002b).

Turban, 2001; Einwiller, 2002; Gefen, 2002a; Kim and Prabhakar, 2002; Chiou, 2003; Cheung and Lee, 2003).

The third category represents five studies that do not clearly fit into either one of the other mentioned categories. Jarvenpaa et al. (1999) mixed the results of the two experiential surveys with a regular offline survey. Bhattacharjee (2002) conducted an experiential survey for his exploratory study and a regular online survey for his confirmatory study. Again, Pavlou and Chellappa (2001) used a mix of two surveys, one of them experiential, one offline, and one experimental study, whereas de Ruyter et al. (2001) conducted an experiment only using offline role-playing scenarios. Das et al. (2003) employed a “snowball survey” to collect their data (i.e., the survey respondents are collected via referrals) (for an overview of the 24 reviewed studies see table 1, presenting the studies’ contexts, samples, additional underlying theoretical frameworks, methodologies and applied analytical techniques for hypotheses testing).

Study	Context	Sample (usable responses)	Particular theoretical framework	Methodology	Analytic techniques (hypotheses testing)
Jarvenpaa et al. (1999, 2000)	exploring initial trust in an Internet store and cross-cultural investigation, using online bookstores and travel-sites	184 students (Australia), 198 students (Israel), 115 subjects of an offline panel (Finland)	Social Exchange Theory, Balance Theory, Theory of Reasoned Action, Theory Planned Behavior	experiential survey approach (Australia and Israel), participants performed four shopping activities at online bookstores and online travel-sites; offline panel survey (Finland); cross-cultural validation of the study	Structural Equation Modeling with AMOS and Linear Regression Analyses
Gefen (2000)	exploring trust in an e-commerce vendor, using an online bookstore	217 students (USA)	-	experiential survey approach, participants performed product search at an online bookstore	Structural Equation Modeling with LISREL
Gefen and Straub (2003)	exploring trust in an e-commerce vendor, using an online travel agency	161 students (USA)	Technology Acceptance Model, Theory of Reasoned Action	experiential survey (free simulation experiment), participants performed search for round trip at an online travel agency	Structural Equation Modeling with PLS-Graph
de Ruyter et al. (2001)	exploring the antecedents of trust, relative advantage and perceived risk in the adoption of e-services	202 participants (Netherlands)	Diffusion Theory, Signaling Theory	experimental study, participants were presented with offline role-playing scenarios	ANOVAs and MANOVA (analyses of variance)
Lee and Turban (2001)	exploring the antecedents of consumer trust in Internet shopping	405 students (China)	-	offline survey	Multiple Linear Regression Analysis
Pavlou and Chellappa (2001)	exploring the antecedents of trust in electronic commerce transactions	276 students (three studies) (USA)	-	online survey, offline survey, experimental study using manipulated websites	Multiple Linear Regression Analysis
Bhattacharjee (2002)	developing a new scale for measuring trust and testing it for the antecedents of willingness to transact with an e-commerce company, using a bookstore	147 students (USA), 122 online banking users (USA)	Theory of Reasoned Action	experiential online survey, online survey	Structural Equation Modeling with EQS
Einwiller (2002)	Investigating reputation, self confidence, system trust and vendor trust in e-commerce	473 consumers from an online panel	-	online survey	Structural Equation Modeling with AMOS
Gefen (2002a)	exploring consumer trust and loyalty in e-commerce using an online bookstore	160 students (all online shoppers) (USA)	-	offline survey	Structural Equation Modeling with PLS-Graph
Gefen (2002b)	developing a new scale for measuring three dimensions of trust and testing its predictive validity, using an online bookstore	217 students (USA) 289 students (USA)	-	experiential online surveys (free simulation experiment)	Structural Equation Modeling with LISREL

Table 1. Overview of Reviewed Articles.

Study	Context	Sample (usable responses)	Particular theoretical framework	Methodology	Analytic techniques (hypotheses testing)
Kim and Prabhakar (2002)	exploring initial trust in the adoption of online banking	266 Internet users (196 used online banking) (USA)	Social Network Theory	online survey	Multiple Logistic Regression Analysis
Koufaris and Hampton-Sosa (2002a)	exploring the antecedents of initial trust in an online company, using several e-vendors	111 students (USA)	Technology Acceptance Model, Theory of Planned Behavior	experiential survey with online questionnaire, participants visited an unfamiliar website and performed a product search	Structural Equation Modeling with AMOS
Koufaris and Hampton-Sosa (2002b)	testing a model for consumers' initial trust in an e-commerce vendor using online travel-sites and computer stores	212 students (USA)	Technology Acceptance Model, Theory of Planned Behavior	experiential survey with online questionnaire (treatments like in Koufaris and Hampton-Sosa 2002a)	Structural Equation Modeling with AMOS
McKnight et al. (2002)	testing a model for consumers' initial trust in an e-commerce vendor using an online legal advice service	1403 students (USA)	-	experimental survey (subjects were presented with a scenario, then taken to a mock-up of an online legal advisor, followed by an online questionnaire)	Structural Equation Modeling with LISREL
Suh and Han (2002)	exploring the effect of consumer trust and TAM in Internet banking	845 Internet users (South Korea)	Technology Acceptance Model, Theory of Reasoned Action	online survey among Internet users being customers of five banks	Structural Equation Modeling with LISREL
Teo and Liu (2002)	cross-cultural investigation of consumer trust in an e-commerce vendor	1532 Internet users (544 USA and 988 China)	Theory of Reasoned Action	online survey	Structural Equation Modeling with AMOS
Chiou (2003)	investigating the antecedents of consumer loyalty in an Internet provider	209 Internet users (Taiwan)	-	online survey	Structural Equation Modeling with LISREL
Cheung and Lee (2003)	exploring the antecedents of consumer trust in Internet shopping	405 students (China)	-	offline survey	Multiple Linear Regression Analysis
Das et al. (2003)	investigating the effect of several personality traits on consumers' purchasing, surfing and information-seeking behavior	372 consumers (USA)	-	offline "snowball survey"	Structural Equation Modeling with PLS-Graph
Gefen et al. (2003)	integrating consumer trust and TAM in a study on online shopping	213 students (experienced online shoppers) (USA)	Technology Acceptance Model, Social Exchange Theory	offline survey (respondents were requested to answer questions regarding their last online book or CD vendor they had made a purchase with)	Structural Equation Modeling with LISREL

Table 1. Overview of Reviewed Articles (continued).

Study	Context	Sample (usable responses)	Particular theoretical framework	Methodology	Analytic techniques (hypotheses testing)
Lui and Jamieson (2003)	integrating TAM, several dimensions of trust and risk for the case of the adoption of an e- vendor's transaction system	133 students (Australia)	Technology Acceptance Model	experiential online survey (free simulation experiment)	Structural Equation Modeling with PLS-Graph
Pavlou (2003)	exploring the effect of trust in e-commerce on several factors including consumers' intention to transact	102 students (USA), 155 Internet users	Theory of Planned Behavior, Theory of Reasoned Action, Technology Acceptance Model	three exploratory offline surveys (1 st on predefined online book-store, 2 nd on self-selected familiar online vendor, 3 rd on online companies in general), one online survey with random subjects/ e-mail addresses	Structural Equation Modeling with PLS-Graph
Koufaris and Hampton-Sosa (2004)	testing a model for consumers' initial trust in an e-commerce vendor using online travel-sites and computer stores	210 students (USA)	Technology Acceptance Model	experiential survey with online questionnaire (treatments like in Koufaris and Hampton- Sosa 2002a)	Multiple Linear Regression Analysis

Table 1. Overview of Reviewed Articles (continued).

3.3. Excursus: Theoretical Frameworks of the Reviewed Studies

Several of the reviewed studies placed their research models within particular, existing theoretical frameworks or at least in accordance to them (cf. table 1). Overall, eight specific theories were found to be incorporated to some extent in the studies, namely, the *Theory of Reasoned Action* (in Jarvenpaa et al. 1999,2000; Bhattacharjee, 2002; Suh and Han, 2002; Teo and Liu, 2002; Gefen and Straub, 2003; Pavlou, 2003), the *Theory of Planned Behavior* (in Jarvenpaa et al. 1999,2000; Koufaris and Hampton-Sosa, 2002a,2002b; Pavlou, 2003), the *Technology Acceptance Model* (in Koufaris and Hampton-Sosa, 2002a, 2002b, 2004; Suh and Han, 2002; Gefen and Straub, 2003; Gefen et al., 2003; Lui and Jamieson, 2003; Pavlou, 2003), *Balance Theory* (in Jarvenpaa et al., 2000), *Social Exchange Theory* (in Jarvenpaa et al. 1999,2000; Gefen et al., 2003), *Signaling Theory* (in de Ruyter et al., 2001), *Diffusion Theory - Theory of Perceived Attributes* (in de Ruyter et al., 2001) and *Social Network Theory* (in Kim and Prabhakar, 2002). In the following sections, each of these eight theories will be shortly summarized and their key elements will be pointed out. The aim of this approach is not to fully explain these theories but to help the reader to better evaluate the research reported in the in the 24 reviewed trust studies.

3.3.1. Theory of Reasoned Action

The Theory of Reasoned Action (TRA), a well established model for the prediction of specific human behaviors, was developed by the social psychologists Fishbein and Ajzen (see Fishbein and Ajzen, 1975). They argued for a distinction of the, however, systematically related variables beliefs, attitudes, intentions, and behaviors.⁴² In their model Fishbein and Ajzen posited that actual, overt *behavior* of a person is predicted by the person's intentions

⁴² Fishbein and Ajzen (1975, p. 12; p. 13) argued that beliefs "represent the information [the individual] has about the object ... a belief links an object to some attribute", while they conceptualized attitude "a person's favorable or unfavorable evaluation of an object", behavioral intention as "a special case of beliefs, in which the object is always the person himself and the attribute is always a behavior" and behavior as "observable acts of the subject". They also compared their categorization with the concept of affect, cognition and conation. According to Fishbein and Ajzen (cf. 1975, p. 12) affect refers to attitude (i.e., feelings or evaluations), cognition covers beliefs (closely related to opinions, thoughts and knowledge about the object), and conation which refers to the individual's behavioral intention. The object of an attitude or a belief may be a person, a group of people, an object, an institution, an event, an issue, a behavior, etc. (Fishbein and Ajzen, 1975).

toward the performance of this behavior, while the *behavioral intention* is a function of both, the *attitude* toward the behavior, and *subjective norms* regarding the execution of the behavior. The person's attitude toward the given behavior is determined by beliefs that the execution of the behavior will result in certain consequences and the evaluation of these consequences. Additionally, normative beliefs about the behavior in question, i.e., beliefs about what other people (peers) think about the individual performing the behavior, have an impact on the individual. Fishbein and Ajzen called the totality of these normative pressures "subjective norms". Subjective norms are assumed to influence the behavioral intention of the individual toward the behavior in question. Fishbein and Ajzen also included a feedback loop in their model, as "a person can form new beliefs only by performing some behavior ... he may read books, observe events, interact with other people, watch television, etc., and these activities provide the basis for the formation of descriptive and inferential beliefs." (Fishbein and Ajzen, 1975, p. 511) (for a graphical illustration of the model see figure 8). With their theory Fishbein and Ajzen abandoned the, until then, common assumption that an individual's attitude toward a specific object may best be the way to anticipate the person's behavior with respect to the given object but instead, they posited that it's the person's attitude toward the behavior that impacts the actual performance of it (Fishbein and Ajzen, 1975, pp. 15-16).

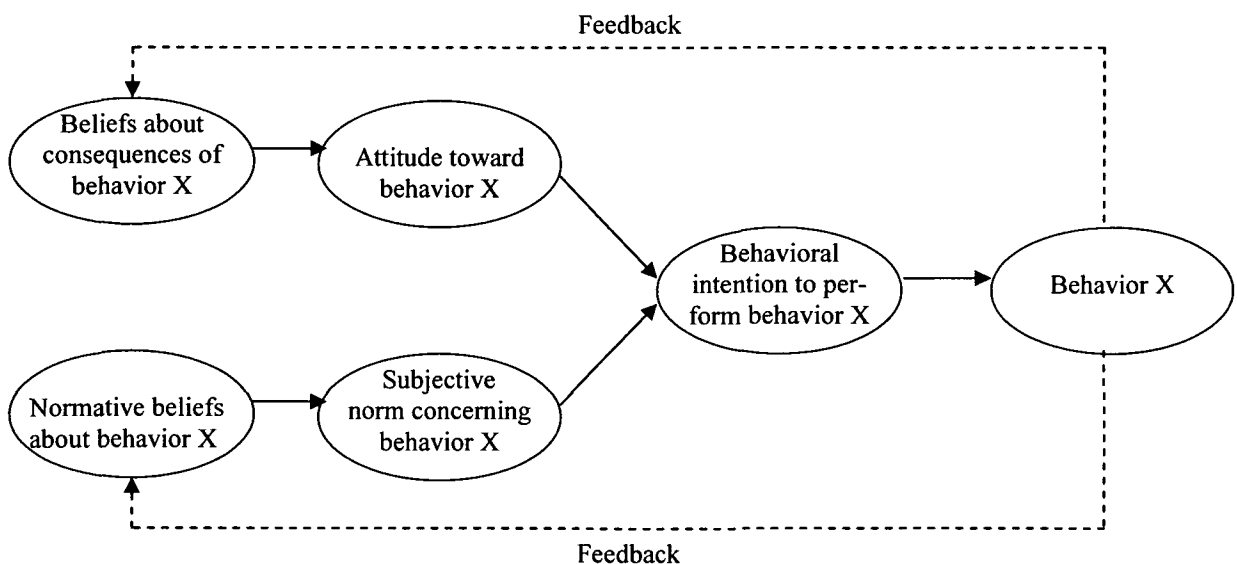


Figure 8. The Theory of Reasoned Action.

Source: Slightly adapted from Fishbein and Ajzen (1975, p. 16).

3.3.2. The Theory of Planned Behavior

The Theory of Planned Behavior (TPB) of Ajzen (1991, see also 2002a, 2002b, 2002c) is an expansion of the TRA, trying to overcome a limitation of the original TRA, namely to account for the case of behaviors that are not completely under the volitional control of the individual. Ajzen additionally included the exogenous variable of *perceived behavioral control*, which subsumizes beliefs about the possession of requisite resources and opportunities for executing the specific behavior, for example skills, time, financial resources, cooperation of others, etc. (“... perceived behavioral control refers to people’s perceptions of the ease or difficulty of performing the behavior of interest”, Ajzen, 1991, p. 183; this conceptualization is very similar to Bandura’s concept of “self-efficacy”, see for example Bandura, 1994). In the model perceived behavioral control is assumed to, both, directly impact the overt behavior of the individual and to indirectly affect the given behavior in form of a motivational implication through the factor of behavioral intentions. In other words, if an individual perceives weak control over the behavior, because of a lack of requisite resources, then the individual is less likely to perform the behavior, even if her or his attitude and subjective norms may be positive toward the behavior (Madden, Scholder Ellen and Ajzen, 1992) (for a graphical overview of the model see figure 9).

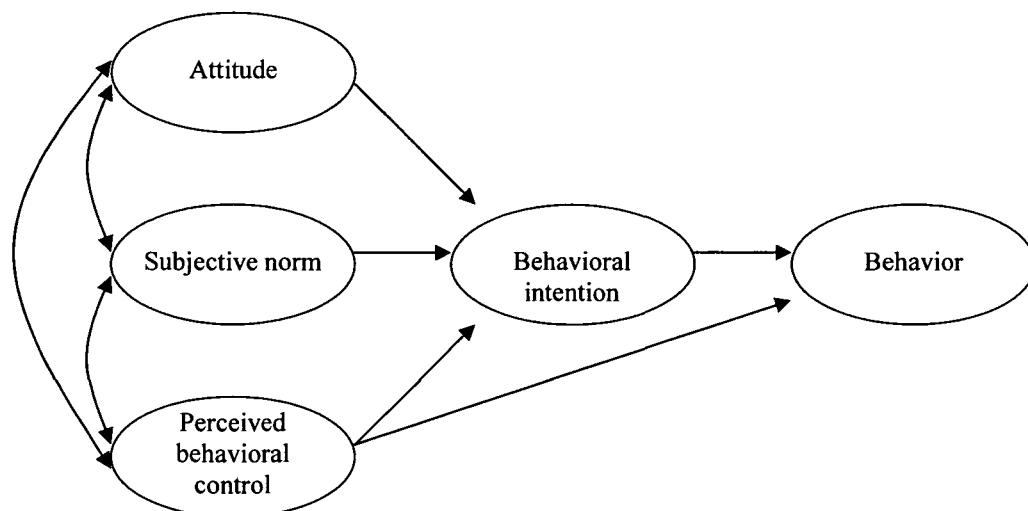


Figure 9. The Theory of Planned Behavior.

Source: Slightly adapted from Ajzen (1991, p. 182).

In a comparative test of TRA and TPB Madden et al. (1992) were able to show that TPB explained more variation in behavioral control than TRA. They also found that TPB is

superior to TRA in cases in which the given behavior is not under volitional control of the person.

3.3.3. The Technology Acceptance Model

The most common theory adopted by scholars in the 24 reviewed studies was the Technology Acceptance Model (TAM) (Davis, 1989; Davis, Bagozzi and Warshaw, 1989). TAM is an adaptation of the TRA, originally developed by Davis for the prediction of user acceptance of information systems. Contrary to TRA, which is a general model, applicable to all kinds of human behavior, TAM was specially designed for the case of users' acceptance or adoption of new information systems. Based on a review of prior MIS literature and non-MIS literature, among many factors, Davis identified two key elements central to acceptance or rejection of information technology. These two key constructs in TAM, distinct but related, are the user's *perceived usefulness* of the information system ("the degree to which a person believes that using a particular system would enhance his or her job performance", Davis, 1989, p. 320) and the *perceived ease of use* of the information system ("the degree to which a person believes that using a particular system would be free of effort", Davis, 1989, p. 320). These two constructs are supposed to be generally applicable determinants of user acceptance and are thus formulated a priori.⁴³ This is a departure from the original TRA, because instruments

⁴³ In the course of two studies Davis (1989) developed and refined scales for perceived usefulness and perceived ease of use until he reached a final set of 12 items for these two constructs with very high reliability measures. He stated: "Cronbach alpha reliability for perceived usefulness was .97 in Study 1 and .98 in Study 2. Reliability for ease of use was .91 in Study 1 and .94 in Study 2. These findings mutually confirm the psychometric strength of the new measurement scales." (Davis, 1989, p. 333). However, taking a closer look at the final measurement scales (in Davis, 1989, p. 340) reveals that the items are extremely similar to each other, expressed by the high reliability. For example the six items for the construct perceived usefulness are: "Using Chart-Master [a software program] in my job would enable me to accomplish tasks more quickly.", "Using Chart-Master would improve my job performance.", "Using Chart-Master in my job would increase my productivity.", "Using Chart-Master would enhance my effectiveness on the job.", "Using Chart-Master would make it easier to do my job.", "I would find Chart-Master useful in my job.". Although TAM is widely accepted and used by many scholars in the field of MIS research, it seems to be noteworthy that by striving for a very high reliability of his instrument Davis disregarded an important aspect of validity, namely content validity. In other words, TAM seems to have fallen a "victim" to *the Attenuation Paradox*, which appears in the context of item selection and test construction (Loevinger, 1954). The Attenuation Paradox treats the problem that both, reliability and validity of a scale can

based on TRA always need to be adapted to the specific context and suitable salient beliefs for the new context need to be specified (Davis et al., 1989). Another deviation from TRA is that Davis' TAM does not include the construct of subjective norms, as it is theorized by TRA, because computer usage is typically assumed to be voluntary and because the element of subjective norms is difficult to unravel from effects of attitude on behavioral intention (Davis et al., 1989). The main assumption of TAM is that actual usage of the system (i.e., overt behavior) is jointly determined by the user's perceptions regarding the ease of use of the system and the perceived usefulness for the individual. Additionally, the factor perceived ease of use is hypothesized to influence perceived usefulness. External variables which additionally may affect ease of use and perceived usefulness may be for example objective design characteristics of the system such as menus, icons, etc. (Davis et al., 1989) (see figure 10 for an illustration of the complete TAM model).

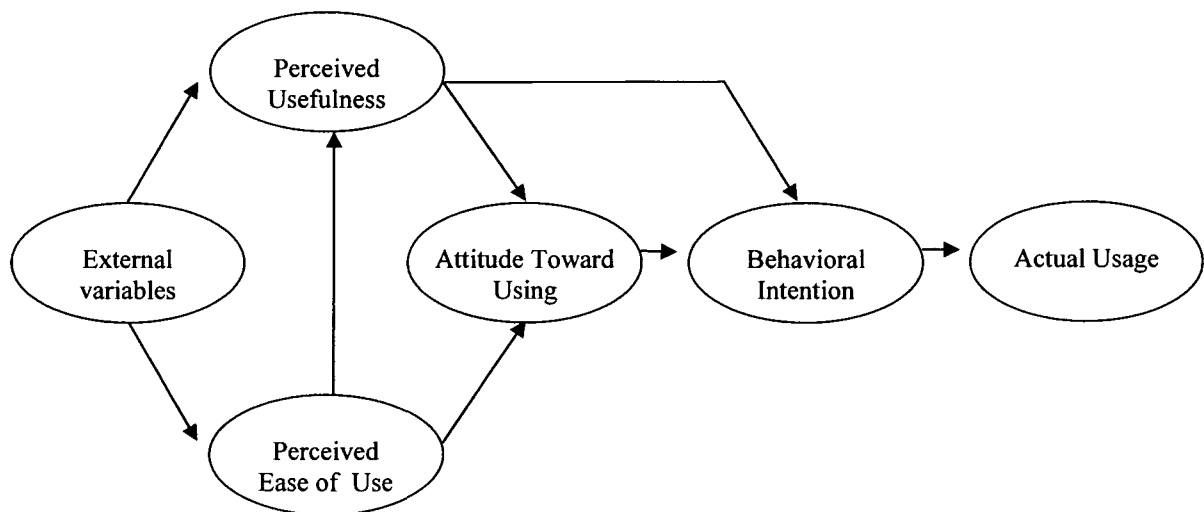


Figure 10. The Technology Acceptance Model.

Source: Slightly adapted from Davis, Bagozzi and Warshaw (1989, p. 985).

only be increased up to a certain level after which though any further increase of reliability leads to a decrease of validity. In other words, maximizing reliability may easily lead to one-dimensional items which are redundant and measure identical content (Loevinger, 1954; see also Engelhard, 1992 and Rost, 1996; cf. also Bhattacharjee, 2002, p. 224).

Since its development in the late 1980s TAM has been used by many MIS scholars in research models for the investigation of user acceptance of software programs and e-commerce websites (for an extensive overview of empirical studies using TAM see Gefen and Straub, 2000). However, in most of the reviewed studies on consumer trust in e-commerce (e.g. in Koufaris and Hampton-Sosa, 2002a, 2002b, 2004; Gefen et al., 2003; Pavlou, 2003) not the full TAM was used, as depicted in figure 10, but often a reduced form as shown in figure 11 below.

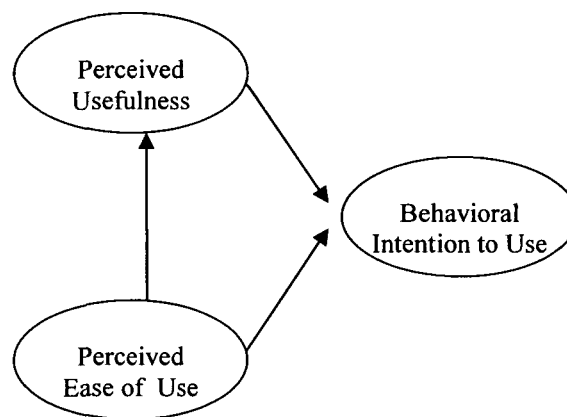


Figure 11. Reduced Form of the Technology Acceptance Model.

Source: Gefen, Straub and Boudreau (2000, p. 11).

3.3.4. Balance Theory

Balance Theory was developed in the 1940s by Heider, a social psychologist, for the case of sentiments in interpersonal relations (Heider, 1958). According to Heider, a “sentiment refers to the way a person *p* feels about or evaluates something. The ‘something’ may be another person, *o*, or an impersonal entity *x*. Sentiments may be roughly classified as positive or negative.” (Heider, 1958, p. 174). In his research Heider explored relations between two (i.e., dyads) or three entities (i.e., triads, typically between the individual and his perceptions of another person and a specific object). A state of balance refers to a situation in which the persons and the sentiments they undergo co-exist without stress. The theory assumes that a balanced, harmonious cognitive state is favored by individuals in a given situation over a state

of disharmony and tension. Furthermore, an individual is expected to show a tendency toward keeping his relationships balanced.

Another important aspect in Balance Theory is the concept of “unit”. The entities (i.e., people, objects, etc.) compose a unit if they are perceived as belonging together. Factors which may influence sentiments and which relate the entities are perceived similarity (e.g. in regard to attitudes and beliefs), proximity and interaction, familiarity and (in case of impersonal entities) ownership. A dyadic relationship is supposed to be balanced when the relations between the entities are all positive or all negative. In the triad, the situation is balanced if all three relations are positive or two relations are positive and one is negative. Two examples for the case of a triad, one showing a balanced state and one depicting an unbalanced state, are represented below in figure 12:

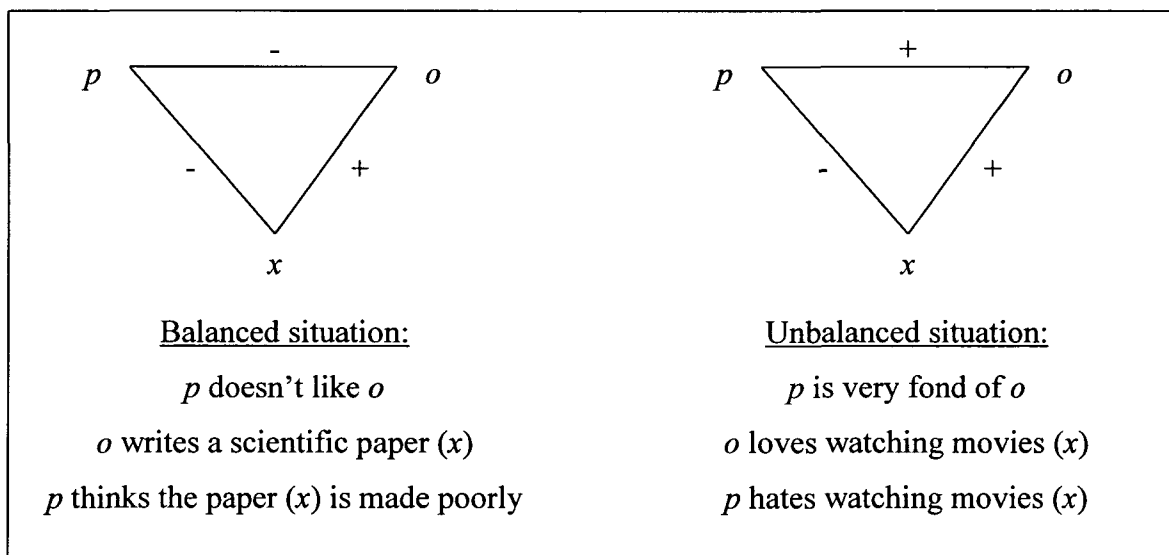


Figure 12. Applications of Balance Theory.

Source: Based upon Heider (1958).

The first example, the balanced situation describes a cognitive state comfortable and free of stress for the individual *p*. The individual does not like person *o* and therefore the perception that a given work *x* of *o* is of low quality fits well into the views of *p*. Contrary, in the second example, the unbalanced state, there is a very positive feeling of the individual *p* toward person *o*. However, there is the problem that person *o* likes to watch movies *x* very much while individual *p* doesn't like to watch movies at all for a certain reason. For *p* this situation is likely to cause a state of disharmony and dissonance and *p* will try to transform this

relationship into a balanced one. For example the individual p might change his opinion regarding watching movies x , for example, he might start to like watching them or there might occur a change in his feelings toward person o , for instance he may re-think his positive feelings toward o .

3.3.5. Signaling Theory

Signaling Theory was developed in the field of information economics for market conditions under which buyers and sellers hold asymmetric amounts of information before and during market interactions (Spence, 1974; Boulding and Kirmani, 1993). Before the purchase typically only the seller is certain about the quality of his goods or services while the potential buyer is not fully informed about the offered quality, and thus faces uncertainty.⁴⁴ Under these circumstances the buyer tries to gather information which will put him in the position to evaluate if a potential seller is offering high- or low-quality goods (Boulding and Kirmani, 1993; see also section 2.3.5. and 2.3.6. of this thesis). To help potential buyers to overcome their lack of information and the uncertainty, sellers may send signals to the buyers. Generally speaking, market signals “are activities or attributes of individuals in a market which, by design or accident, alter the beliefs of, or convey information to, other individuals in the market” (Spence, 1974, p. 1). Such signals are manipulable observable attributes and characteristics of the seller and may be for example prices, brand names, advertisements, warranties, personal appearance of the seller’s sales representatives, etc. The signals received are then interpreted by the buyer for probability assessments based on his general past experience in the market.

One problem though is the fact that not only good, trustworthy high-quality sellers will send signals but also bad, opportunistic low-quality sellers, which will try to fool prospective buyers with their signals and try to appear as favorable high-quality providers as well. However, the buyers are generally aware of this phenomenon and thus face the additional problem of evaluating which signals and sellers are credible and which are not (Spence, 1974; Boulding and Kirmani, 1993). Under the assumption that the sellers act rational, buyers will

⁴⁴ An exception is posed by goods with „search qualities“ (cf. Darby and Karni, 1973) which are product attributes easily accessible prior to the purchase, such as for example the price or physical attributes.

look for signals which would be favorable only for high-quality sellers to send and at the same time unfavorable for low-quality sellers (Boulding and Kirmani, 1993).

In Signaling Theory a “separating equilibrium” occurs when one type of seller, for example, the high-quality seller, is likely to use a different strategy than the low-quality seller because of given market incentives and potential buyers have the opportunity to distinguish among the sellers because of their different signaling strategy (Spence, 1974; Boulding and Kirmani, 1993). The opposite situation is a “pooling equilibrium”, which is a situation in which the market incentives encourage both type of sellers to choose the same strategy. The result is that both groups of sellers become undistinguishable for the buyer and their strategy is no signal any more (Spence, 1974; Boulding and Kirmani, 1993).

The crux of the separating equilibrium is the credibility of the signal, in other words, the signaling-reputation of the (credible) seller who needs to invest in this reputation which will result in long-term benefits (Spence, 1974, p. 90-91). Or as Boulding and Kirmani (1993, p. 112 stated “a credible signal should have a ‘bonding component’, such that the firm incurs a cost if the signal is false”) – this may be the loss of reputation or profits or a forfeited investment. Because if the perceived bond credibility is low, then for example even a comprehensive warranty offered by the short-run oriented, low-quality, opportunistic seller may be no signal because potential buyers will recognize the fact that the seller is not likely to compensate the buyer in case of negative events which might be covered by this warranty. Such a pledge by the untrustworthy seller is worthless for the buyer and may even result in distrust. If both type of sellers have a low bond credibility or reputation, a pooling equilibrium will occur. Thus, strictly speaking, also the seller’s reputation is a signal of quality (Boulding and Kirmani, 1993).

3.3.6. Social Network Theory

In his works Granovetter, a sociologist, has hypothesized that economic behavior is embedded in networks of interpersonal relations, contrary to the view of scholars from the schools of classical and neoclassical economics who propagated an atomized view of economic actions (Granovetter, 1973; 1985; 1992). In developing his theses, Granovetter investigated the

strength of interpersonal ties and their importance for behavior with the help of network analyses.

A key element in Granovetter's theory is the strength of relational ties between people. *Tie strength* is defined as a "combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize a [relational] tie" (1973, p. 1361). Granovetter posited that the stronger the tie between person A and person B, the larger will be the amount of people with whom both, A and B, will be tied. If person A has a tie with person B and another person C, and if B and C don't know each other, then most likely they will get into interaction through person A. This likelihood increases with the strength of the tie and decreases where the ties are weak (Granovetter's theory is based on the assumptions of Heider's balance theory, treated in the section above, which would posit that if the tie between A and B and A and C is strong, given that B and C know each other, a positive tie between B and C should result in order to create a state of cognitive balance; cf. Granovetter, 1973, p. 1362). Furthermore, Granovetter knowingly supposed that the situation where A is strongly tied with his friend B and strongly tied with his friend C, and there is no tie between B and C is a case which is not likely to occur and thus called it the "forbidden triad". As more people are tied with each other, a social network results. In such a network a "bridge" is a line, in other words, a relational tie, which provides the only path between two points (i.e., people). According to Granovetter no strong tie may be a bridge because this might only be possible if neither party to the bridge has no other strong ties and this circumstance is, according to Granovetter, very unlikely to occur in any social network (cf. Granovetter, 1973, pp. 1364-1366) (for an illustration see figure 13 below; the dotted line between A and B represents a bridge, i.e. a weak tie).

Granovetter argued that these bridges are of great importance in linking members of different groups with each other while strong ties rather facilitate local cohesion. Or in the words of Granovetter: "those to whom we are weakly tied are more likely to move in circles different from our own and will thus have access to information different from that which we receive." (1973, p. 1371).

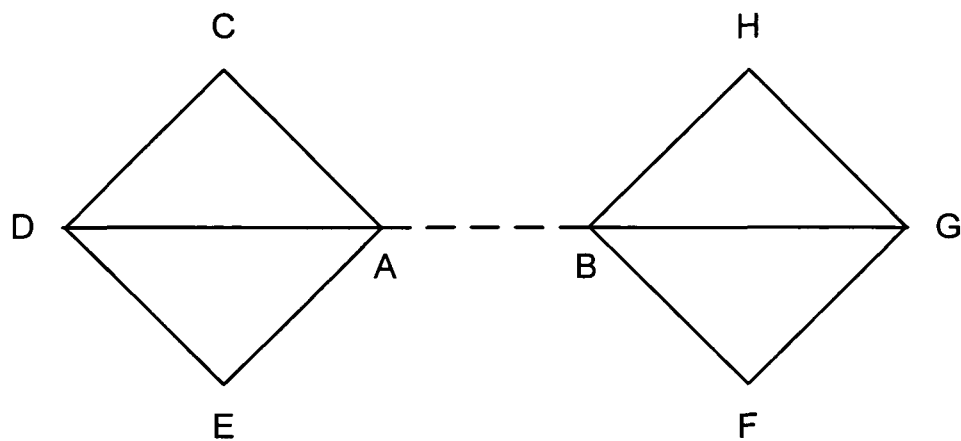


Figure 13. Bridges between Social Networks.

Source: Adapted from Granovetter (1973, p. 1365).

Therefore, weak ties or bridges can be for example of great importance in the process of diffusion of innovations because through such a weak tie (e.g. between two acquaintances) information can reach a higher amount of people than through strong ties only (e.g. between close friends) (Granovetter, 1973). Granovetter also theorized that generally, social embeddedness and social ties, help people in the course of economic action. For example when it comes to trust and the evaluation of a transaction party. He assumed that individuals rely less on the general reputation of (potential) transaction partners but rather rely on the knowledge of trusted informants who might have prior knowledge about this party or even experience with the party based on past dealings (Granovetter, 1985). He argued against the “undersocialized” views of reputation of many economists, who merely stated that a party’s incentive not to cheat on others is the cost of damage to the party’s reputation, which these scholars consider as a “generalized commodity” (cf. Granovetter, 1985, p. 490). Granovetter believed that “Better than the statement that someone is known to be reliable is information from a trusted informant that .. [who] has dealt with that individual and found him so”, hence, *word-of-mouth* (Granovetter, 1985, p. 490).

3.3.7. Social Exchange Theory

Social Exchange Theory was developed in the 1950s by the social psychologists Thibaut and Kelley forming a comprehensive and complex theory of (dyadic) interpersonal relations,

interdependency and group functioning (e.g. see Thibaut and Kelley, 1969). For Thibaut and Kelley the center piece of any interpersonal relationship is interaction, which they defined as a situation where the parties to the relationship “emit behavior in each other’s presence, they create products for each other, or they communicate with each other” and “there is at least the possibility that the actions of each person affect the other” (1969, p. 10). Their theory, which is rather functionalistic and intended to be generally applicable, employs an approach similar to economics and game theory, and is expressed by several basic elements of a relationship, namely: *outcome, rewards, costs, goodness of outcome, comparison level, comparison level for alternatives*.

The outcomes of interaction are divided by Thibaut and Kelley into positive ones (i.e., rewards), and negative ones (i.e., costs). Rewards, are defined as “the pleasures, satisfaction, and gratification the person enjoys” (Thibaut and Kelley, 1969, p. 12). Contrary costs represent “any factors that operate to inhibit or deter the performance of a sequence of behavior. The greater the deterrence to performing a given act ... the greater the cost of the act.” (Thibaut and Kelley, 1969, p. 12). Deterrence can be caused by physical or mental efforts, fears, conflicting forces, etc. The element “goodness of outcome” results if costs and rewards are combined into a single figure. All possible outcomes of interaction between two interdependent people and their behaviors can be expressed by a matrix, which is the major analytical technique Thibaut and Kelley employed in their works (for a sample illustration see figure 14).

The matrices used by Thibaut and Kelley are very similar to payoff matrices in game theory but with two major deviations. First, they do not assume that the outcomes in the matrix are fixed, based on the assumption that if a certain combination of behaviors (i.e., a certain cell in the matrix) is repeated several times, the resulting rewards are expected to decline (i.e., satiation effects) while the costs increase (i.e., fatigue). According to Thibaut and Kelley (1969) in an interaction it is therefore often the better solution to rather move from one cell to another. Second, they did not assume that the exchange parties have the knowledge of the whole matrix at the beginning of the relationship and that instead they step-by-step discover the payoffs in the matrix by exploration and prediction in the course of interaction (cf. Thibaut and Kelley, 1969, pp. 24-26).

		A's repertoire		
		a ₁	a ₂	...
B's repertoire	b ₁	2 / 6	0 / 1	...
	b ₂	4 / 1	5 / 2	...
	

Figure 14. Sample Matrix of Possible Outcomes of Social Exchange in a Dyad, Scaled According to the Overall Goodness of Outcome.

Source: Thibaut and Kelley (1969, p. 15)

The term “comparison level” (or CL) is for Thibaut and Kelley “the standard against which the member evaluates the ‘attractiveness’ of the relationship or how satisfactory it is.” (Thibaut and Kelley, 1969, p. 21; similar to the concept of switching costs, see e.g., Burnham et al., 2003). If the outcomes were to be represented in form of a scale CL would mark the zero. The degree to which the outcomes for a person in a specific relationship succeed the level of CL, to that degree the person will be satisfied and attracted to the relationship. Contrary, if the received outcomes are lower than CL, than the person will be dissatisfied with the given relationship. However, CL is not a fixed point but will adapt to the previous experienced levels of outcomes in the relationship, hence, it can shift upward or downward, according to the recently experienced outcomes (i.e., past experience). The “comparison level for alternatives” (or CL_{alt}) on the other hand “is the standard the member uses in deciding whether to remain in or to leave the relationship.” (Thibaut and Kelley, 1969, p. 21). CL_{alt} represents the lowest acceptable level of outcomes for the person in the light of available alternative opportunities to her or him (i.e., remain alone or form other relationships). If the level of outcomes drops below CL_{alt} the person will abandon the given relationship. In other words, to establish and continue a relationship between the parties, outcomes above CL_{alt} need to exist and outcomes below CL_{alt} need to be eliminated.

According to Thibaut and Kelley (1969) any (potential) relationship starts with some contact between the parties, which is facilitated by proximity in physical space. If the relationship is formed and continued depends on the calculative expectations and perceptions of the parties regarding their levels of possible outcomes in the relationship (see also section 2.6., and the notion of calculus-based trust). Each party will enter in the relationship which he expects to be the best alternative for her or him. Thus, the first interactions between the parties, the first behaviors perceived, are used to explore their potential matrix through experiencing samples of outcomes out of this matrix and based on that trying to forecast trends in the outcomes and especially their stability across time (see also section 2.6. of this thesis). In this first stage of the (potential) relationship two types of uncertainties are salient. First, uncertainty if the outcomes in the given relationship will be significantly higher than the best available alternatives or the state of unaffiliated independence. Second, uncertainty about the degree of stability of the outcomes in the future. The parties try to evaluate these uncertainties through these exploration in their first interactions. If they are perceived to be low, then the parties will become more attracted to the relationship and it is much more likely to be formed (Thibaut and Kelley, 1969; see also section 2.6. on different notions of trust during the development of a trust-relationship and section 2.3.). It is noteworthy that Thibaut and Kelley also discussed the case of so-called non-voluntary relationships. Such relationships are characterized by a situation in which the outcomes for the individual fall below his CL and the individual becomes unsatisfied with the relationship but remains restrained to it and/or excluded from other, better relationships due to high direct or indirect switching costs (an example for this case would be an unhappy marriage and the unpleasant, and often costly solution of divorce). Such a situation is likely to result in a state of frustration for the individual (Thibaut and Kelley, 1969).

Thibaut and Kelley's Social Exchange Theory covers a lot more aspects than can be discussed here. Therefore the interested reader is referred to Thibaut and Kelley (1969) for further details. It is also noteworthy that Thibaut and Kelley are not the only scholars writing about social exchange, yet the trust studies of Jarvenpaa et al. (1999,2000) referenced only these authors. Other works on Social Exchange Theory can be found e.g. in Blau (1964) and in Cook (1990).

3.3.8. Diffusion Theory - Theory of Perceived Attributes

What is sometimes termed “Theory of Perceived Attributes” is part of Rogers’ comprehensive “Diffusion Theory” (or “Adoption Theory”) (Rogers, 1995). Analyzing past research on the diffusion of innovations, which is defined as “the process by which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 1995, p. 5), Rogers, recognized that overall between 49 and 87 percent of the variance in the rate of adoption can be explained by only five major attributes, namely, the users’ perceptions regarding the *relative advantage*, *compatibility*, *complexity*, *trialability*, and *observability* of the innovation (Rogers, 1995, p. 206). Relative advantage “is the degree to which an innovation is perceived as being better than the idea it supersedes” and may be measured by economic factors, status aspects, etc. (Rogers, 1995, p. 212). Compatibility “is the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters” (Rogers, 1995, p. 224). Complexity refers to the extent “to which an innovation is perceived as relatively difficult to understand and use” (Rogers, 1995, p. 242), while trialability “is the degree to which an innovation may be experimented with on a limited basis” (Rogers, 1995, p. 243). Finally, observability is the amount “to which the results of an innovation are visible to others”, hence, perceptions of the degree to which the innovation might be observed by other people or and described to other people (Rogers, 1995, p. 244).

Although Diffusion Theory covers much more than presented here, we will not go into further detail because the specific online trust study using this theoretical framework (de Ruyter et al., 2001) did include it only in a broad and perfunctory way, making a more detailed discussion superfluous. For a detailed description of Diffusion Theory the interested reader is referred to Rogers (1995).

3.4. Conceptualization and Findings

Taking a closer look at the conceptualizations of the 24 studies revealed that 17 of them were conducted using research models including trust as well as its assumed antecedents and consequences (in Jarvenpaa et al., 1999 and 2000; Gefen, 2000; Gefen and Straub, 2003;

Bhattacharjee, 2002; Einwiller, 2002; Gefen, 2002a; Gefen, 2002b; Kim and Prabhakar, 2002; Koufaris and Hampton-Sosa, 2002a; Koufaris and Hampton-Sosa, 2002b; McKnight et al., 2002; Suh and Han, 2002; Teo and Liu, 2002; Gefen et al., 2003; Lui and Jamieson, 2003; and Pavlou, 2003, who in fact used a model in which he tested only trust and its consequences, but also controlled for two variables conceptualized as antecedents of trust). Five studies exclusively focused on consumer trust and its antecedents (de Ruyter, 2001; Lee and Turban, 2001; Pavlou and Chellappa, 2001; Cheung and Lee, 2003; Koufaris and Hampton-Sosa, 2004) while the residual two studies utilized research models only including trust and its hypothesized consequences (in Chiou, 2003; Das et al., 2003).

Jarvenpaa et al. (1999, 2000) developed a causal research model assuming that the two independent variables PERCEIVED SIZE⁴⁵ of an Internet store and its PERCEIVED REPUTATION are positively related to the formation of consumers' initial TRUST IN THE INTERNET STORE, and that both, perceived size and perceived reputation are correlated with each other.⁴⁶ They further posited that trust in the online store on the other hand would have a direct positive effect on the individual's ATTITUDE TOWARDS THE STORE and an indirect positive effect on attitude through the mediating variable PERCEIVED RISK associated with buying from the online store. Additionally, they assumed both latter constructs, risk and attitude, would have a direct effect (negative and positive respectively) on the consumers' WILLINGNESS TO BUY from the Internet store. Jarvenpaa et al. also included the control variables FREQUENCY OF INTERNET USAGE, SHOPPING ENJOYMENT in general, ATTITUDE TOWARDS COMPUTERS, past DIRECT SHOPPING EXPERIENCE (e.g., with catalogue shopping or TV shopping channels) and general WEB-RISK ATTITUDES. Drawing from a number of existing theories, from the field of social psychology, Jarvenpaa et al. concluded that their research model is consistent with the Theory of Reasoned Action (Ajzen and Fishbein, 1975), Theory of Planned Behavior (Ajzen, 1991),

⁴⁵ For the remainder of section 3.4. all research variables are emphasized with capital letters, e.g. PERCEIVED SIZE, (which represents an independent variable in Jarvenpaa et al.'s, 1999, 2000, research model) to help the reader to quickly identify the variables included in the given study.

⁴⁶ PERCEIVED SIZE and PERCEIVED REPUTATION were manipulated by Jarvenpaa and her colleagues by providing the Australian and Israeli participants with a short summary on sales, location, product range, countries to which products are being delivered, and the year of foundation of each online store, before the subjects accessed the pre-selected online bookstores (in Jarvenpaa et al. 2000: Amazon, Da Information Services, Gleebooks, The Internet Bookshop; in Jarvenpaa et al. 1999: Amazon, The Internet Bookshop, Opus, Barnes and Noble) and online travel-sites (in Jarvenpaa et al. 2000: Finnair, Flight Centre International, Qantas, Travel Web; in Jarvenpaa et al. 1999: El Al, British Airways, ISSTA, Travelocity).

Balance Theory (Heider, 1958) and Social Exchange Theory (Thibaut and Kelley, 1969). While in Jarvenpaa et al. (2000, p. 45) the construct trust in an Internet store was conceptualized as “a trustor’s expectations about the motives and behaviors of a trustee” and “consumer’s trust directly in the store, or as the store’s trustworthiness”, and knowingly used interchangeably with “store trustworthiness” (Jarvenpaa et al. 2000, p. 47), in Jarvenpaa et al. (1999), trust in the online store was defined as “a consumer’s willingness to rely on the seller and take action in circumstances where such action makes the consumer vulnerable to the seller” (cf. Jarvenpaa et al. 1999, p. 4). Selecting existing online bookstores and online travel-sites as their field of application and applying structural equation modeling, using AMOS⁴⁷ with maximum likelihood estimation method, Jarvenpaa et al. (2000) found that their model provided a good fit to the data for both the case of online travel-sites and of online bookstores. All path coefficients in their model were significant at the $p < 0.05$ level except for the path between perceived size and trust in bookstore sites. Overall, perceived reputation (unstandardized path coefficient 1.46 for bookstores, and 0.96 for travel-sites) had a much stronger effect on trust than perceived size (unstandardized path coefficient for bookstores non-significant, and 0.27 for travel-sites). In a cross-cultural validation of the same setting in Israel and a shortened setting in Finland (cf. Jarvenpaa et al., 1999) the results of the original study were confirmed. However, in contrast to additionally hypothesized cultural influences (based on Hofstede’s culture dimensions, cf. e.g., Hofstede, 1980) no significant cultural effects were found regarding the antecedents of trust, trust itself nor consumers’ risk perceptions.

Gefen (2000) developed a research model expecting FAMILIARITY WITH THE ONLINE VENDOR and an individual’s DISPOSITION TO TRUST to be predictors of TRUST IN THE ONLINE VENDOR, which he defined as “the confidence a person has in his or her favorable expectations of what other people will do, based, in many cases, on previous interactions” and as “the belief that the other will behave as one anticipates” (Gefen, 2000, p. 726). Gefen furthermore assumed

⁴⁷ Testing structural equation models (SEM) and performing confirmatory factor analyses may be conducted with the help of several statistical packages. The original and most common one is LISREL (Linear Structural RELationships) which was developed by Jöreskog and Sörbom. However, nowadays also AMOS, EQS or CALIS are alternative SEM software packages used by scholars. Furthermore, several of the studies reviewed in section 3.4. of this thesis applied Partial Least Squares (with the software program PLS-Graph), which is a statistical package similar to LISREL but is based on slightly different theoretical and mathematical assumptions. For a detailed comparison of LISREL and PLS see Fornell and Bookstein (1982).

that both, familiarity and trust, would positively affect the consumer's INTENTION TO INQUIRE for a product as well as the INTENTION TO PURCHASE a product from the e-commerce vendor (the online bookstore Amazon.com). Gefen tested the hypotheses with structural equation modeling, using LISREL, whereby all major hypothesized relationships were statistically supported, i.e., trust was indeed affected by familiarity (standardized path coefficient 0.17, $p < 0.05$), although to a much higher degree it was predicted by the individual's disposition to trust (standardized path coefficient 0.53, $p < 0.01$). Intended purchase (standardized path coefficient 0.43, $p < 0.01$) and intended inquiry (standardized path coefficient 0.27, $p < 0.01$) were also both significantly affected by trust in the e-commerce vendor. A posteriori Gefen also tested the model with correlations between familiarity and disposition to trust and between intended purchase and intended inquiry whereby only the latter relation received statistical support.

In their study, de Ruyter et al. (2001), investigated the impact of the independent variables ORGANIZATIONAL REPUTATION⁴⁸, RELATIVE ADVANTAGE and PERCEIVED RISK on the three dependent variables, TRUST IN THE E-SERVICE, PERCEIVED QUALITY and BEHAVIORAL INTENTION OF CUSTOMER TOWARDS ADOPTING E-SERVICES (the purchase of a travel from a fictitious online travel agency). Aside from these main effects de Ruyter et al. also hypothesized several two-way and three-way interactions between the predictors and each of the dependent variables and posited their model to be consistent with Signaling Theory (Spence, 1974) and with elements of Diffusion Theory (Rogers, 1995). In this study, trust was conceptualized as an attitudinal element but not further defined. Running variance analyses (MANOVA and ANOVAs) de Ruyter et al. found that the main effects on all three dependent variables were statistically significant, except the assumed effect of relative advantage on trust. Hence, a high organizational reputation significantly increased the consumers' trust in the e-service ($t\text{-value}=5.57$, $p < 0.001$) while a higher amount of perceived risk towards the e-service decreased the level of trust ($t\text{-value}=7.28$, $p < 0.001$). However, none of the above mentioned two-or three-way-interactions were found to be significant.

⁴⁸ de Ruyter et al. (2001) manipulated perceived reputation in the experiment by providing the subjects with hypothetical information about this factor. In other words, in the case of good reputation the subjects were informed that the fictitious service provider received high ratings in industry tests, that friends would have favourable impressions regarding the service provider, and that the company had been in business for a long period of time. Subjects in this study did not interact with any website but performed offline role-playing scenarios.

Lee and Turban (2001) presented a comprehensive model including four hypothesized second order antecedents of trust: firstly, the *trustworthiness of the Internet merchant*, subsuming the three dimensions of PERCEIVED ABILITY, PERCEIVED INTEGRITY and PERCEIVED BENEVOLENCE of the merchant, secondly, the *trustworthiness of the Internet shopping medium*, composed of TECHNICAL COMPETENCE OF THE MEDIUM, RELIABILITY OF THE MEDIUM and MEDIUM UNDERSTANDING OF THE CONSUMER, thirdly, *contextual factors*, divided into the dimensions PERCEIVED EFFECTIVENESS OF THIRD PARTY CERTIFICATION and PERCEIVED EFFECTIVENESS OF THE SECURITY INFRASTRUCTURE, and fourthly, OTHER FACTORS, not fitting the other three dimensions but possibly having an effect on trust.⁴⁹ The dependent variable in Lee and Turban's model was CONSUMER'S TRUST IN INTERNET SHOPPING. Additionally consumer's PROPENSITY TO TRUST was included as moderating variable in the model, expected to moderate all relationships between trust and its antecedents. Consumer trust in Internet shopping was defined as "the willingness of a consumer to be vulnerable to the actions of an Internet merchant in an Internet shopping transaction, based on the expectation that the Internet merchant will behave in certain agreeable ways, irrespective of the ability of the consumer to monitor or control the Internet merchant" (Lee and Turban, 2001, p. 79). Lee and Turban only tested six out of their 16 of their hypotheses, using multiple linear regression analysis, namely, the effect of perceived ability, perceived integrity, and perceived effectiveness of third-party recognition on trust and the moderating effect of trust propensity on perceived integrity, perceived competence and perceived effectiveness of third-party recognition. The results provided only support for two of these hypotheses, firstly, the moderating effect of trust propensity on perceived integrity (standardized coefficient 0.48, $p < 0.05$). Secondly, the results further indicated a direct effect of perceived integrity (one element of trustworthiness of the Internet merchant) on consumer trust in Internet shopping (standardized coefficient 0.35, $p < 0.05$). The four other hypotheses were found to be statistically insignificant.

Pavlou and Chellappa (2001) developed a research model investigating how PERCEIVED PRIVACY and PERCEIVED SECURITY of a transaction with a given vendor promote TRUST IN E-COMMERCE TRANSACTIONS with the vendor. In addition, the two control variables, perceived REPUTATION of the vendor and SATISFACTION WITH PREVIOUS TRANSACTIONS in e-commerce

⁴⁹ All items used in this study were taken from Cheung and Lee (2000), a study aimed at generating a reliable and valid measurement instrument for consumer trust in Internet shopping.

were added to the model, expected to affect trust. In this study, trust was defined as “the subjective probability with which consumers believe that a particular transaction will occur in a manner consistent with their confident expectation” (Pavlou and Chellappa, 2001, p. 11) The hypothesized relationships between perceived privacy and perceived security and the dependent variable consumer’s trust in the transaction with the online company received empirical support. The results of linear regression analysis and partial-correlation analyses (the latter for the test of the control variables effects) indicate that the influence of perceived security on trust was quite significant (coefficient 0.45, $p < 0.01$), whereas the effect of perceived privacy was marginally significant (coefficient 0.23, $p < 0.1$). Also a positive influence of perceived privacy on perceived security was observed by Pavlou and Chellappa (coefficient 0.35, $p < 0.01$). The effect of perceived privacy on trust was substantially reduced when other antecedents of trust, i.e. the control variables reputation and satisfaction with past outcomes of transactions on the Internet, were controlled for.

Bhattacharjee’s study (2002) aimed primarily at the theoretical conceptualization and empirical validation of a new scale to measure an individual’s trust in an online firm. The trust model, which he used to validate the trust-scale, postulated that FAMILIARITY WITH THE ONLINE FIRM is a predictor of consumer’s TRUST IN THE ONLINE FIRM and of the consumer’s WILLINGNESS TO TRANSACT with the online firm and secondly, that the individual’s trust in the online company positively affects the individual’s willingness to transact with the company. Bhattacharjee (2002, p. 222) conceptualized trust as the “trustor’s beliefs in the trustee’s ability, benevolence, and integrity” (i.e., trusting beliefs, see section 2.7.3.1. of this thesis). While Bhattacharjee recognized the dynamic nature of trust he stated that he did not wanted to research initial trust but ongoing trust. Bhattacharjee tested his hypotheses with data collected from an online survey⁵⁰ via structural equation modeling, using EQS. Both, trust (path coefficient 0.36, $p < 0.001$) and familiarity (path coefficient 0.42, $p < 0.001$) were significant predictors of the consumers’ willingness to transact with the online firm and furthermore, familiarity was found to be a significant predictor of trust (path coefficient 0.44, $p < 0.001$). However, the results left a large proportion of variance unexplained in both dependent variables, suggesting that other predictors should be included in the research model, too.

⁵⁰ Bhattacharjee’s (2002) confirmatory study was carried out using customers of an e-banking division of a large US-bank to fill out the questionnaire in regard to the e-banking division.

Einwiller (2002) investigated consumer trust in e-commerce developing a research model hypothesizing VENDOR REPUTATION to be an antecedent of TRUST IN THE VENDOR⁵¹, and SYSTEM REPUTATION (i.e., reputation of the Internet) a predictor of both, SYSTEM TRUST and SPECIFIC SELF CONFIDENCE of the person. Einwiller furthermore proposed trust in the vendor, system trust and specific self-confidence to positively influence the TRUSTING INTENTION TO PURCHASE from the online vendor. While system and vendor reputation were hypothesized to be correlated with each other, two additional moderating variables were included in the model, namely EXPERIENCE WITH THE VENDOR, moderating the effect between vendor reputation and trust in the vendor, and EXPERIENCE WITH THE SYSTEM, moderating the effects between system reputation and system trust and system reputation and specific self confidence. In her study Einwiller defined consumer trust in e-commerce as a multidimensional (three-dimensional) construct, namely as the willingness or intention of the consumer to rely on an online vendor in a purchasing situation, despite of potential negative consequences. The willingness is based upon a trusting opinion or attitude toward the vendor, toward oneself and toward the Internet system forming the environment of the transaction (Einwiller, 2002, p. 82, translated by the author). According to Einwiller, the three dimensions of consumer trust in e-commerce were, trust in the vendor, trust in the system (Internet) and self-confidence (i.e., trust in oneself). Vendor trust is viewed as a the trusting belief and attitude toward the vendor based upon an evaluation of the vendor's competence, benevolence, predictability, integrity and honesty (partly based upon McKnight and Chervany, 2001-2002). System trust was conceptualized as a trusting attitude toward the Internet as transaction environment, based upon beliefs, that the system is secure and free of risk (termed "structural assurance" by Einwiller, based upon McKnight and Chervany, 2001-2002; see also section 2.7.2.1.) and that this environment is normal and beneficial (termed "situational normality" by Einwiller, based upon McKnight and Chervany, 2001-2002; see also section 2.7.2.1.). Specific self confidence was conceptualized as a situation-specific attitude in one's own abilities to purchase on the Internet (related to Bandura's concept of self-efficacy, 1994, and the element of perceived behavioral control in Ajzen's Theory of Planned Behavior, 1991, cf. Einwiller, 2002, p. 79, or see section 3.3. of this thesis). With data gathered from 465 consumers of an existing German online panel Einwiller tested her

⁵¹ Einwiller's (2002) survey-participants were simply asked to base their evaluations on the last online vendor they had made a transaction with or, for non-online shoppers, to base it on an online vendor they were familiar with.

research model with structural equation modeling, using AMOS. As hypothesized, Einwiller found support for the positive influence of vendor reputation on vendor trust (standardized path coefficient 0.701, $p < 0.01$), between system reputation and system trust (standardized path coefficient 0.503, $p < 0.01$), and between system reputation and user self confidence (standardized path coefficient 0.295, $p < 0.01$). Vendor reputation and system reputation furthermore correlated with each other (correlation coefficient 0.314, $p < 0.01$). As hypothesized, trust in the vendor positively affected the consumer's intention to purchase (standardized path coefficient 0.510, $p < 0.01$) as well as self confidence did (standardized path coefficient 0.310, $p < 0.01$). However, the predefined structural path between system trust and the consumer's intention to purchase was not statistically supported and the related hypothesis rejected. Analyzing the statistical output and suggested modification indices provided by AMOS, Einwiller realized that two fit indices (RMSEA and p-close) were not in accordance with suggested guidelines and that these two indices could be satisfied if, additional to rejecting the above mentioned non-significant path, two new paths would be added, namely a positive influence of system trust on consumer's trust in the vendor and a positive path between self confidence and system trust. Einwiller also tested the hypothesized moderating effects. The assumed moderating effect of experience with the given vendor was statistically supported, meaning that the more consumers were experienced with the vendor, the lower was the impact of vendor reputation on trust in the online vendor. The proposed moderating effect of experience with the system was partially supported, i.e., while a lower experience with the system (i.e., the Internet) increased the effect of system reputation on system trust, there was no statistical support found for the moderating effect of system experience on the path between system reputation and self confidence.

Gefen (2002a) developed a research model incorporating the variable CONSUMER TRUST in the online vendor with Parasuraman, Zeithaml and Berry's *SERVQUAL* concept (cf. e.g., Zeithaml, Berry and Parasuraman, 1996), PERCEIVED RISK, COSTS TO SWITCH THE VENDOR and CUSTOMER LOYALTY. He proposed that the five dimensions of *SERVQUAL* (TANGIBLES, i.e., the customer's assessment of the store's physical environment, equipment, facilities, etc., EMPATHY, i.e., consumer's perception of being given individual attention by the vendor, RELIABILITY, i.e., the perception about the reliability of the vendor, RESPONSIVENESS, i.e., the perceived willingness of the vendor to help its customers, and ASSURANCE, i.e., a positive perception and confidence about the vendor's courtesy and ability), directly affect consumers' trust in the vendor, defined as "the willingness to make oneself vulnerable to actions taken by

the trusted party based on the feeling of confidence or assurance” (Gefen, 2002a, p. 30) and consumer’s loyalty towards an online vendor. Furthermore, Gefen assumed that trust would reduce perceived risk associated with the specific vendor and would positively affect customer loyalty. Additionally, customer’s loyalty was proposed to be negatively influenced by the construct of perceived risk and positively affected by the perceived cost to switch the vendor. Gefen also recognized the dynamic nature of trust in his study and stated that he was investigating ongoing trust instead of initial trust, with all respondents in his study all being experienced online shoppers and customers of the online vendor.⁵² The hypotheses were examined with structural equation modeling techniques, using PLS. However, in a principal component exploratory factor analysis conducted beforehand, the original five *SERVQUAL* dimensions collapsed into three dimensions, namely, tangibles, empathy and a mixed factor of reliability-responsiveness-assurance. From these three remaining *SERVQUAL* constructs however, only two dimensions showed statistically significant effects on other variables in the structural equation analysis, namely, tangibles on customer loyalty and reliability-responsiveness-assurance on customer trust (path coefficient 0.52, $p < 0.01$). Customer trust negatively affected perceived risk with the online vendor (path coefficient -0.24 , $p < 0.01$) and had a significant positive impact on customer loyalty (path coefficient 0.48, $p < 0.01$). In addition, the construct cost-to-switch vendor positively affected customer loyalty. Interestingly, perceived risk with the vendor had no significant effect on customer loyalty.

Similar to the research reported in Bhattacharjee’s study, Gefen (2002b) also tried to develop and validate a new, comprehensive scale for the measurement of consumer trust toward an online vendor⁵³. In his study Gefen proposed that consumer trust is a general belief about a specific trustee (OVERALL TRUST), with the specific beliefs of PERCEIVED ABILITY, PERCEIVED INTEGRITY and PERCEIVED BENEVOLENCE of the trustee (“the dimensions of trustworthiness”) to serve as antecedents of the general belief (Gefen, 2002b, p. 39). Hence, Gefen assumed overall trust to be the product of a set of three trustworthiness beliefs about the trustee (cf. Gefen, 2002b, p. 40). He also hypothesized that the three trustworthiness dimensions would be distinct but related constructs. He tested his measurement model with data of 217 subjects

⁵² Gefen (2002a) chose the online bookstore Amazon.com as the stimulus in his study. All participants in his study had previously bought from Amazon.com.

⁵³ Just like in Gefen (2002a) also Gefen (2002b) used the online bookstore Amazon.com as stimulus in his experiential surveys, with all respondents reported to be familiar with inquiring for and purchasing books as this particular online vendor.

with confirmatory factor analysis, using LISREL. In order to test the predictive validity (see also section 6.1. of this thesis) of the new scale, Gefen added three additional variables and formed two exploratory causal models.⁵⁴ He added the two dependent variables WINDOW-SHOPPING INTENTION (i.e., intended inquiry) and INTENDED PURCHASE plus a control variable measuring PAST PURCHASE experience with the online vendor. In the first model Gefen excluded the construct overall trust and hypothesized the three independent variables (i.e., the three trustworthiness dimensions) ability, integrity and benevolence to be the only predictors of the two dependent variables window shopping intention and purchase intention. He further assumed the control variable of past purchase to influence all three independent variables and both dependent variables. The second model included the additional variable overall trust. While the rest of the research model remained unchanged in the second model Gefen assumed the three trustworthiness dimensions also to predict overall trust, which on its side was expected to positively influence both dependent variables. With a new dataset, gathered from 289 subjects, Gefen estimated both models with structural equation modeling, using LISREL. Both models showed good model-fit indices. In the first model, excluding overall trust, all three trustworthiness dimensions were significantly correlated with each other (standardized correlation coefficients between 0.49 and 0.60, all at $p < 0.01$) and perceived vendor ability was found to positively influence consumers' window shopping intention (standardized path coefficient 0.42, $p < 0.01$) and perceived integrity was found to positively predict consumers' purchase intention (standardized path coefficient 0.50, $p < 0.01$). Additionally, purchase intention and window shopping intentions showed shared covariance with each other (0.23, $p < 0.01$) and the control variable, past purchase, was significantly correlated with all three trustworthiness dimension (coefficients between 0.24 and 0.25, all at $p < 0.01$) and positively predicted consumers' intended purchase (standardized path coefficient 0.38, $p < 0.01$). All other paths were reportedly insignificant, i.e. perceived benevolence had no significant impact on any of the dependent variables. The inclusion of overall trust in the second model resulted in a slightly different picture. In the second model all three trustworthiness dimensions were again correlated with each other with the same estimated magnitudes as in the first model. Yet, overall trust was positively predicted only by perceived integrity (standardized path coefficient 0.53, $p < 0.01$) and, to a lesser degree, by perceived benevolence (standardized path

⁵⁴ Gefen's (2002b) structural models should be considered to be of exploratory nature only because all paths between the independent variables and the dependent variables were freed and estimated by LISREL and no explicit theory-driven a priori hypotheses were formulated aside from simply adopting Gefen (2000) conceptualization.

coefficient 0.25, $p < 0.05$) while perceived ability had no effect on overall trust. Overall trust in the online vendor on its side predicted only consumers' purchase intention (standardized path coefficient 0.40, $p < 0.01$). Additional direct effects between the trustworthiness dimensions and the dependent variables were only found between perceived ability and window shopping intention (standardized path coefficient 0.42, $p < 0.01$) and between perceived integrity and purchase intention (standardized path coefficient 0.30, $p < 0.05$) in the second model. Furthermore, the control variable past purchase was again positively correlated with all three trustworthiness dimensions but not with overall trust while purchase intention and window shopping intention again showed the same shared covariance with each other.

Kim and Prabhakar (2002) placed their study in the field of Internet banking. They hypothesized the consumers' general PROPENSITY TO TRUST, STRUCTURAL ASSURANCES (guarantees and protection policies provided by the bank) and WORD-OF-MOUTH REFERRALS (divided into relational content regarding Internet banking and tie strength with the referents, based on Granovetter's Social Network Theory, 1973, 1985) to be antecedents of consumers' INITIAL TRUST IN THE ELECTRONIC CHANNEL as banking medium (i.e., the Internet) (hence, Kim and Prabhakar recognized the dynamic nature of trust in their study). On the other hand Kim and Prabhakar assumed that consumers' initial trust in the e-channel as banking medium would be positively related to the dependent variable of consumers' ADOPTION OF INTERNET BANKING. Additionally, they postulated that consumers' TRUST IN THE BANK may itself to be a second influencing factor on consumers' adoption of Internet banking, hence they proposed that in online banking consumers face two trustees, both, the Internet (electronic channel) and the bank. In their study Kim and Prabhakar (2002, pp. 11-12) used the trust definition of Mayer et al. (1995, p. 712) as starting point and defined initial trust in the electronic channel as "the willingness of a consumer to be vulnerable to the actions of the Internet based on the expectation that the Internet will perform what the consumer expects it to do – and not something else – despite the possibility of environmental disruption, human user and operator errors, and attacks by hostile parties" and consumer's trust in the bank, providing the service, as "the willingness of a consumer to be vulnerable to the actions of the bank based on the expectation that the bank will perform a particular action important to the consumer, irrespective of the ability to monitor or control that other party". Kim and Prabhakar performed a multiple logistic regression analysis to test their hypotheses. The results confirmed the hypotheses for the effect of propensity to trust (path coefficient 0.353, $p < 0.001$), structural assurances (path coefficient 0.261, $p < 0.001$) and word of mouth referrals

(only relational content proofed to be significant with a path coefficient of 0.299, $p < 0.001$) on the dependent variable initial trust in the electronic channel as banking medium. The expected positive relationship between initial trust in the e-channel and the use of Internet banking also was confirmed (path coefficient 0.533, $p < 0.001$). Contrary to the researchers' expectations, consumers' trust in the bank was found to have no statistically significant impact on the use/adoption of Internet banking.

The research model developed by Koufaris and Hampton-Sosa (2002a) hypothesized the Technology Acceptance Model variables PERCEIVED USEFULNESS and PERCEIVED EASE OF USE of the online vendor's website to be predictors for consumers' INITIAL TRUST IN THE ONLINE COMPANY at the first contact with its website (i.e. trust in an unfamiliar online store).⁵⁵ Initial consumer trust in the specific online company is not explicitly defined by Koufaris and Hampton-Sosa, instead, the trust definition of Mayer et al. (1995, p. 712) was simply adopted. Initial trust in the company was postulated to be an antecedent of both, consumers' INTENTION TO RETURN to the online company and consumers' INTENTION TO PURCHASE from the online company. Koufaris and Hampton-Sosa tested the fit of their research model with structural equation modeling, using AMOS. They found evidence for their assumptions that consumer trust was significantly affected by perceived usefulness of the vendor's website (standardized path coefficient 0.44, $p < 0.01$) and perceived ease of use of the website (standardized path coefficient 0.31, $p < 0.01$) and that on the other hand trust itself significantly affected consumers' intention to return (standardized path coefficient 0.51, $p < 0.01$) and intention to purchase from the online company (standardized path coefficient 0.52, $p < 0.01$). Contrary to their expectations, the construct PROPENSITY TO TRUST which was included as a control variable did not have a statistically significant effect on consumer trust.

⁵⁵ Koufaris and Hampton Sosa (2002a) furthermore assumed that perceived usefulness and perceived ease of use would both be positively influenced by the independent variables shopping enjoyment during the visit to the online vendor and perceived control (related to Bandura's (1994) concept of self-efficacy, cf. Koufaris and Hampton-Sosa, 2002a) during the visit to the vendor's website. As these two factors were not postulated to affect consumer trust they are not mentioned above. Yet, Koufaris and Hampton-Sosa (2002a) found them to be significant predictors of perceived usefulness and perceived ease of use, and also being significantly correlated with each other.

In a second study Koufaris and Hampton-Sosa (2002b) investigated consumer's initial trust towards an unfamiliar Internet retail store⁵⁶, which the authors consider to be a belief and conceptualized it as "INITIAL PERCEIVED COMPANY TRUSTWORTHINESS" (based on the conceptualization of Jarvenpaa et al., 2000), within a quite comprehensive research model. A first set of antecedents of consumer trust covered *company perceptions* and consisted of five constructs, namely, PERCEIVED SIZE of the online store, the store's PERCEIVED REPUTATION, its PERCEIVED WILLINGNESS TO CUSTOMIZE its products and services, PERCEIVED PRIVACY CONTROL and PERCEIVED INFORMATION SHARING with the customers. The second set of trust antecedents was summarized as *website perceptions* and included the constructs PERCEIVED SECURITY CONTROL on the website and the two Technology Acceptance Model elements PERCEIVED EASE OF USE and PERCEIVED USEFULNESS of the store's website. Perceived usefulness was also hypothesized to be affected by perceived privacy control (one of the company perceptions variables). While Koufaris and Hampton-Sosa expected all variables of the company perceptions set to directly predict consumer's initial trust, they assumed only perceived security control and perceived usefulness of the website to be direct antecedents of consumer's initial trust. Perceived ease of use on the other hand was proposed to only indirectly affect trust through perceived usefulness. The dependent variable INTENTION TO RETURN was thought to be predicted by initial consumer's trust (i.e., initial perceived company trustworthiness), by perceived ease of use and by perceived usefulness. Consumer's INTENTION TO PURCHASE, the second dependent variable in the model, was hypothesized to be positively influenced by initial trust, perceived ease of use and perceived usefulness. No interactions between intended return and purchase were included in the a priori path model. Applying structural equation modeling, using AMOS, the majority of Koufaris and Hampton-Sosa's hypotheses were supported (though as a result of the comprehensive model and the relatively small number of 212 cases, Koufaris and Hampton-Sosa had to split the model and estimate three separate, smaller versions of the model and used the average values of the scales for the overall model). Contrary to the researchers' expectations, the hypothesized trust predictors perceived size and perceived information sharing were found to have no statistically significant effect on initial trust. Furthermore, perceived ease of use proved to be not significant on customer's intention to purchase from the store and very interestingly,

⁵⁶ Koufaris and Hampton-Sosa (2002b) asked the survey-participants which online vendors out of a list of several stores (PCPricelist.com, BCD2000.com, Expedia.com, Trip.com) they were familiar with and then sent each respondent to a store with which they had no prior experiences. Then subjects had to perform a product search at the store before answering the questionnaire.

initial trust, as well as perceived usefulness of the store's website were also found not to have a significant effect on consumer's intention to return. The statistically significant direct predictors of company's initial perceived trustworthiness (i.e., consumer trust) were found to be perceived privacy control (path coefficient 0.35, $p < 0.01$), perceived usefulness of the vendor's website (path coefficient 0.22, $p < 0.01$) and perceived security control (path coefficient 0.18, $p < 0.01$), perceived willingness to customize (path coefficient 0.13, $p < 0.01$). The constructs perceived reputation and perceived information sharing showed only minimal effects on the company's initial perceived trustworthiness (perceived reputation with 0.10, at $p < 0.05$ level and perceived information sharing with 0.09, at $p < 0.1$ level). Initial perceived trustworthiness positively affected consumers' intention to purchase from the vendor (path coefficient 0.27, $p < 0.01$). Contrary to the original a priori model, an additional path from intention to purchase was added to predict customer's intention to return based on the modification indices. This path proved to be highly significant (path coefficient 0.62, $p < 0.01$), and contributed considerably to a better model fit. Strangely, initial trust perceptions of the company and perceived usefulness of the company's website had no significant effect on customers' intention to return while perceived ease of use of the website was found to be no significant predictor of customer's purchase intention.

McKnight, Choudhury and Kacmar (2002) developed and tested a comprehensive trust building model for the establishment of initial consumer trust in an unfamiliar online service provider⁵⁷, offering legal advice. Based on the Theory of Reasoned Action, McKnight et al. defined consumer trust as "a multi-dimensional construct with two inter-related components – *trusting beliefs* (perceptions of the competence, benevolence, and integrity of the vendor), and *trusting intentions – willingness to depend* (that is, a decision to make oneself vulnerable to the vendor)". PERCEIVED REPUTATION of the vendor and PERCEIVED WEB-SITE QUALITY were posited to be antecedents of consumers' INITIAL TRUST in the online company. Another antecedent factor in their model was the construct STRUCTURAL ASSURANCE OF THE WEB, which reflected the belief that there are protective legal or technological structures in place that facilitate the safety of online transactions (see also section 2.7.2. of this thesis). In the model all three antecedents were expected to affect consumer's trust in the online vendor which was conceptualized to consist of two sub-constructs, namely TRUSTING BELIEFS in the

⁵⁷ McKnight et al. (2002) used a mock-up website of a fictitious online company offering legal advice in their study.

Internet merchant (i.e., the individual's "perceptions of the trustworthiness of the object of trust" McKnight et al., 2002, p. 303) and TRUSTING INTENTION-WILLINGNESS TO DEPEND ON THE WEB VENDOR, conceptualized as the "general willingness" to depend on the vendor (cf. McKnight et al., 2002, pp. 302-303). Trusting beliefs in the vendor were furthermore expected to positively influence trusting intention of the consumers. Both aspects of trust, i.e., trusting beliefs and intention were considered to positively predict *behavioral intentions* of the consumers in regard to the vendor which they divided into three sub-aspects: the INTENTION TO FOLLOW THE VENDOR'S ADVICE, the INTENTION TO SHARE PERSONAL INFORMATION WITH THE VENDOR and the INTENTION TO PURCHASE FROM THE VENDOR'S SITE. An additional construct termed PERCEIVED WEB RISK, reflecting the extent to which the prospective customer believes that the Internet is unsafe to use. This variable was expected to correlate with structural assurance of the Web and to negatively affect all the three above mentioned behavioral intentions of consumers. For hypotheses testing, like in most of the other reviewed studies, the researchers employed a structural equation modeling, using LISREL. The results provided strong support for the proposed research model. To summarize McKnight et al.'s findings: trusting intention was significantly affected by perceived vendor reputation (path coefficient, 0.41, $p < 0.001$), by perceived website quality (path coefficient, 0.18, $p < 0.001$) and marginally by structural assurance of the Web (path coefficient, 0.05, $p < 0.01$) while trusting beliefs were found to be positively influenced by perceived vendor reputation (path coefficient, 0.39, $p < 0.001$), by perceived site quality (path coefficient, 0.51, $p < 0.001$) and by structural assurance of the Web (path coefficient, 0.10, $p < 0.001$). Trusting beliefs significantly affected trusting intention (path coefficient, 0.60, $p < 0.001$) as well as the consumer's intention to follow the vendor's advice (path coefficient, 0.27, $p < 0.001$), to share personal information with the vendor (path coefficient, 0.30, $p < 0.001$), and to purchase from the vendor (path coefficient, 0.13, $p < 0.01$). In addition, all the assumed consequents of trusting intention–willingness to depend on the online vendor (i.e., on consumer's intention to follow the vendor's advice, path coefficient, 0.60, $p < 0.001$, to share personal information, path coefficient, 0.25, $p < 0.001$, and to purchase from the vendor, path coefficient, 0.51, $p < 0.001$) were also found to be statistically significant. Only two of the hypothesized paths between perceived web risk and the three behavioral intentions of the consumer in regard to the online vendor were significant (path coefficient -0.28 on intended information sharing and -0.22 respectively on intended purchase, both at $p < 0.001$), while the one between perceived Web risk and the intention to follow the vendor's advice was found to be statistically

insignificant. A positive correlation was reported between structural assurance of the Web and perceived Web risk (correlation coefficient 0.62, $p < 0.001$).

Suh and Han (2002) explored consumers' trust in the context of Internet banking in South Korea. They adopted the original TAM conceptualization and added the construct of trust to it. In their model PERCEIVED EASE OF USE of the online banking site was supposed to positively influence PERCEIVED USEFULNESS of the site and customer's ATTITUDE TOWARDS USING it. Perceived usefulness was expected to predict attitude towards using the site and BEHAVIORAL INTENTIONS TO USE the site. Incorporating the construct of consumer TRUST, defined as "the belief that the promise of another can be relied upon and that, in unforeseen circumstances, the other will act in a spirit of goodwill and in a benign fashion toward the trustor" (p. 249), Suh and Han posited that perceived usefulness would also affect trust while trust on the other hand would be a predictor of consumers' attitude towards using online banking and of the behavioral usage intention. Furthermore, attitude towards using the site was expected to affect the intended behavior to use the site which subsequently affects ACTUAL USAGE of the online banking website, based on the Theory of Reasoned Action. The assumed hypotheses were tested by applying structural equation modeling techniques, using LISREL. Suh and Han found significant support for their model and all of their hypotheses, including the ones associated with consumers' trust. Perceived usefulness indeed strongly affected trust (path coefficient 0.687, $p < 0.01$) whereas trust had a positive, but smaller impact on the attitude towards using online banking (path coefficient 0.352, $p < 0.01$) and to an even lesser extent on the behavioral intention to use Internet banking (path coefficient 0.152, $p < 0.01$). Regarding the explained variance, almost seventy-five percent of the variance in the behavioral intention to use was explained by the predictors trust, perceived usefulness, perceived ease of use and by customer's attitude towards using. Due to the nature of Internet banking and by requesting existing Internet banking users to participate in this study, Suh and Han were able to measure actual usage of Internet banking (i.e., actual behavior).

A cross-cultural study on consumer trust in e-commerce in the United States and China was conducted by Teo and Liu (2002). Extending the research model developed and tested by Jarvenpaa et al. (1999, 2000), Teo and Liu proposed four perceived *characteristics of the*

*online vendor*⁵⁸, namely, PERCEIVED REPUTATION, PERCEIVED SIZE, INTEGRATION OF ONLINE AND OFFLINE INTERACTION CHANNELS and SYSTEM ASSURANCE (referring to perceptions about the reliability, stability, security and dependability of the transaction system) and one *characteristic of the consumer*, namely, the individual's PROPENSITY TO TRUST, to be the antecedents of CONSUMER TRUST in the online vendor, which was defined as "a consumer's willingness to rely on the vendor and take action in circumstances where such action makes the consumer vulnerable to the vendor". Furthermore, they expected that consumer trust would positively influence the construct ATTITUDE TOWARD USING THE INTERNET TO PURCHASE FROM THE ONLINE VENDOR and negatively affect PERCEIVED RISK. According to their path model perceived risk also was expected to have a negative effect on attitude and both, attitude and perceived risk were considered antecedents of consumers' WILLINGNESS TO BUY from the online shop. The research model, which Teo and Liu proposed to be consistent with the Theory of Reasoned Action (Fishbein and Ajzen, 1975), was analyzed by applying structural equation modeling techniques (basic and multiple-group analysis), using AMOS. The standardized parameter estimates of the structural model showed that only three of the five hypothesized antecedents of trust proved to be significant at $p < 0.01$ level for both the US and Chinese sample, namely, perceived reputation (path coefficient 0.288 for the US sample, and 0.292 for the Chinese sample), system assurance (path coefficient 0.661 for the US sample, and 0.590 for the Chinese sample) and to a small extent also propensity to trust (path coefficient 0.112 for the US sample, and almost equally 0.111 for the Chinese sample). The explained variance in consumers' trust was very high, resulting in 80 percent of variance explained for the US sample and 76 percent for the Chinese sample. Consumers' trust was found to significantly predict attitude (path coefficient 0.629 for the US sample, and significantly higher for the Chinese sample with 0.798, both at $p < 0.01$) and negatively affect perceived risk (path coefficient -0.663 for the US sample, and -0.447 for the Chinese sample, both at $p < 0.01$). Perceived risk on the other hand was found to have a negative affect on attitude, however, this effect was much stronger for the US-sample than for the Chinese sample. Furthermore, the hypothesized negative relationships between perceived risk and consumers' willingness to buy and the significantly positive relation between attitude and willingness to buy were statistically confirmed. The model showed very good fit indices for both samples. Overall, (analyzing the mean values) US respondents were found to have

⁵⁸ Teo and Liu's (2002) questionnaire asked participants to base their evaluations on a vendor of their own choice with whom they were familiar.

significantly higher levels of propensity to trust, of consumer trust, of attitude, willingness to buy than Chinese respondents had, and US-participants perceived lower risk.

Chiou (2003) investigated the formation of customers' loyalty toward an Internet provider (in the study referred to as "Internet Service Provider"). Chiou hypothesized that customer LOYALTY, the dependent variable in his model, would be positively affected by the independent variables customer's PERCEIVED TRUST in the provider, by customer's OVERALL SATISFACTION with the provider and by the PERCEIVED VALUE of the provider (i.e. the service being good value for the price).⁵⁹ Furthermore, perceived trust in the provider was expected to positively influence perceived value and overall satisfaction. Chiou did not explicitly define trust in his paper aside from claiming that trust is a very important element in e-commerce and stating that he investigated ongoing/accumulated trust instead of initial trust. With a sample of 209 Internet users, using the Internet with a private/household Internet account, employing structural equation modeling, using LISREL, Chiou found significant support for all of his trust-related hypotheses. In other words, customers' perceived trust in their Internet provider positively influenced customers' perceived value of the provider (standardized path coefficient 0.29, $p < 0.05$), as well as overall satisfaction with the provider (standardized path coefficient 0.28, $p < 0.05$) and loyalty toward their Internet provider (standardized path coefficient 0.27, $p < 0.05$).

The study reported in Cheung and Lee (2003) represents a follow-up study to Cheung and Lee (2000) and Lee and Turban (2001), again, investigating general consumer trust in Internet shopping without linking it to a specific vendor. It seems also to be noteworthy that as in Cheung and Lee (2000) and in Lee and Turban (2001) the authors again report a sample size of 405 MIS students, which might indicate that all three studies were drawn from one single data set, each reporting other facets of the results. In their paper Cheung and Lee (2003) supposed that CONSUMER TRUST IN INTERNET SHOPPING, which they defined as in Lee and Turban's study (2001) reported above, would be predicted by the three antecedents PERCEIVED RISK OF INTERNET SHOPPING, *perceived trustworthiness of an Internet vendor* and the *external environment* to the transaction. The latter two factors were further subdivided.

⁵⁹ Chiou (2003) included also two other factors in his model, namely "future Internet service provider expectancy" and "attributive service satisfaction". However, as they were not related to customer trust in the model, they are not described here. For a complete description see Chiou (2003).

Perceived trustworthiness of the vendor was proposed to consist of the four dimensions, PERCEIVED SECURITY CONTROL and PERCEIVED PRIVACY CONTROL, i.e., consumers' perceptions regarding the Internet vendors' ability in fulfilling security and privacy requirements, PERCEIVED INTEGRITY and PERCEIVED COMPETENCE of a given online vendor. The factor external environment consisted of the two dimensions PERCEIVED EFFECTIVENESS OF THIRD PARTY RECOGNITION and PERCEIVED EFFECTIVENESS OF LEGAL FRAMEWORK in the model. Perceived effectiveness of third party recognition subsumed consumers' general impressions of the effectiveness of third party organizations striving to assure the trustworthiness of Internet vendors. Perceived effectiveness of legal framework referred to consumers' perceptions of the effectiveness of laws and codes of practice in place to protect consumers' rights in Internet shopping. The research model of Cheung and Lee further assumed that the individual's PROPENSITY TO TRUST would moderate the effect between consumers' perceptions of the vendor's trustworthiness and perceptions about the external environment. As mentioned above, with data from a sample of 405 MIS students, Cheung and Lee, using multiple linear regression analysis found support for three of their hypotheses. Perceived integrity of the vendor was found to be a significant predictor of consumer trust in Internet shopping (standardized coefficient 0.35, $p < 0.05$) while perceived risk showed the expected negative relation with consumer's trust (standardized coefficient -0.68, $p < 0.01$). A moderating effect of propensity to trust was only found to affect the relationship between vendor's perceived integrity and consumer trust in Internet shopping (standardized coefficient 0.48, $p < 0.05$). All other hypotheses were not supported by the analysis.

Das, Echambadi, McCardle and Luckett (2003) examined the effect of three personal traits – (general) interpersonal trust, social loneliness and need for cognition - on the dependent variables consumer's online surfing, online information-seeking and online purchasing behavior. Das et al. formed three independent research models, each including only one trait and one kind of resulting behavior. They considered the trait general INTERPERSONAL TRUST (drawn from Rotter, 1967, 1971, and using Rotter's original definition of trust as basis to define this construct; see section 2.2.1.) to have an indirect effect on the dependent variable ONLINE PURCHASING BEHAVIOR through the mediating variable CONCERN WITH WEB SECURITY (conceptualized as an attitude). Applying structural equation modeling, using PLS, Das et al. tested the hypothesized structural relations of their three research models, finding support for their a priori hypotheses. In other words, the researchers found weak support for their assumption that general interpersonal trust (i.e., the individual's disposition to trust; see

section 2.7.1.) negatively affected the person's concern with security on the Internet (standardized path coefficient -0.14 , $p < 0.05$) and there was no direct impact of interpersonal trust on the likelihood of online purchases. On the other hand, as expected, concern with web security negatively affected online purchasing behavior (standardized path coefficient -0.23 , $p < 0.05$), and a very weak indirect influence of interpersonal trust through the mediating variable concern with web security was found (standardized path coefficient 0.03 , $p < 0.05$) indicating general support for the hypothesized mediating effect.

Gefen, Karahanna and Straub (2003) investigated trust and TAM in connection with online shopping activities of experienced users at an Internet bookstore all respondents were familiar with (Amazon.com). In their research model Gefen et al. posited five antecedents of experience-based trust in the online vendor, which was conceptualized as a set of specific beliefs about the other party based on past experience, including perceived integrity, benevolence, ability, and predictability (cf. Gefen et al., 2003, p. 55, p. 60). The first independent variable in their model were CALCULATIVE BELIEFS ABOUT THE ONLINE STORE, covering the notion that trust is formed upon a rational economic analysis and the believe that the trustee has nothing to gain by behaving in an opportunistic and untrustworthy manner (similar to Shapiro et al.'s, 1992, deterrence-based trust). The second antecedent of consumers' online trust were INSTITUTION-BASED STRUCTURAL ASSURANCES, which belong to the notion of impersonal, institution-based trust (based on McKnight and Chervany, 2001-2002; see also section 2.7.2.1.). According to Gefen et al., in the Web-environment, such assurances which according to them are built into the website may be seals of approval from trusted-third parties, affiliations with credible and respected organizations but also features like "Contact us" icons, 1-800 phone numbers, policy statements etc. SITUATIONAL NORMALITY, another type of institution-based trust, was posited to be a third predictor of trust (based on McKnight and Chervany, 2001-2002; see also section 2.7.2.1.). This concept referred to trust based on the assessment of a given situation and the perception of it as being customary in the model. Gefen et al. posited that on the Internet, situational normality is evaluated regarding on how the interface of the website represents what the consumers generally expect based on their past experience with similar websites. According to Gefen et al.'s model another antecedent of trust should be KNOWLEDGE-BASED FAMILIARITY, which they supposed to increase trust with an "a priori trustworthy" Internet merchant by creating knowledge for the decision to trust. According to Gefen et al., in e-commerce, this construct reflects the user's past experience with the specific online store. The fifth antecedent of trust

in their model, TAM's PERCEIVED EASE OF USE (PEOU) of the vendor's website, was supposed to predict consumer trust and is also assumed to positively affect PERCEIVED USEFULNESS of the website (PU). INTENDED USE, the final dependent variable in this study, is expected to be directly predicted by trust, PEOU and PU, with PU additionally mediating the effect of trust on intended usage. Personality-based trust, i.e., dispositional trust and cognition-based trust, i.e., trust formed upon categorization processes and illusions of control, were discussed by Gefen et al. but excluded from their model because they expected these constructs to be important only in the initial phase of an exchange relationship which was not in the focus of this particular study. Applying structural equation modeling, using LISREL, all hypotheses were significantly supported except the effect of knowledge-based familiarity on consumer trust which proved to be non-significant. Hence, calculative-based beliefs (path coefficient 0.18, $p < 0.01$), institution-based structural assurances (path coefficient 0.37, $p < 0.05$), institution-based situational normality (path coefficient 0.33, $p < 0.01$), and perceived ease of use of the website (path coefficient 0.28, $p < 0.01$) all positively affected consumer trust in the online vendor. Trust on the other hand positively influenced perceived usefulness of the website (path coefficient 0.26, $p < 0.01$) and consumers' intended use of the vendor (path coefficient 0.26, $p < 0.01$).

Gefen and Straub (2003) generated a research model in which they expected the predictor variable SOCIAL PRESENCE on the website ("the extent to which a medium allows a user to experience others as being present" Gefan and Straub, 2003, p. 11) to affect TRUST IN AN E-SERVICE PROVIDER which is broadly defined as "the belief that other people will react in predictable ways" (Gefen and Straub, 2003, p. 9). They further assumed that trust in the e-service provider (as stimulus the respondents in Gefen and Straub's study were exposed to the online travel-agency Travelocity.com) on the other hand would be positively related to the consumer's PURCHASE INTENTIONS. In addition, they hypothesized that PERCEIVED USEFULNESS of the website would positively affect the purchase intentions and that the perceived usefulness would be on its part influenced by both, the PERCEIVED EASE OF USE of the website and the social presence on the website. Data from the study, analyzed by structural equation modeling, using PLS-Graph, confirmed all hypotheses related to trust, hence, social presence affected consumers' trust in the electronic service provider (path coefficient 0.44, $p < 0.01$) and trust on the other hand positively affected the purchase intention (path coefficient 0.42, $p < 0.01$).

Lui and Jamieson (2003) investigated a research model which integrated different dimensions of consumer trust and perceived risk with the Technology Acceptance Model (a reduced model, cf. section 3.3.3, figure 11) for the case of consumers' intention to transact with an e-commerce system of a pre-selected "brick-and-click" music e-retailer. Lui and Jamieson hypothesized that consumer trust would be a multidimensional construct consisting of five dimensions, namely, 1) RETAILER-INTEGRITY TRUST, covering consumers' perceptions regarding the honesty and willingness to refrain from opportunistic behavior of a given online retailer, 2) RETAILER-ABILITY TRUST, representing perceptions of the seller's ability, competence and skills to handle the transaction, 3) TECHNOLOGY TRUST, referring to consumers' perception of the capability of the technology infrastructure used by the seller, 4) LEGAL FRAMEWORK TRUST, subsuming the individual's feelings about laws and legal entities for the protection of consumers in e-commerce, and 5) THIRD-PARTY RECOGNITION TRUST, which covered the consumers' trust in third-party organizations distributing e-commerce certificates and seals. Lui and Jamieson posited that these five dimensions or factors would form the second order factor EMERGENT TRUST TOWARDS ADOPTION. This second order factor was hypothesized to negatively affect the user's PERCEIVED RISK with transacting with the given system of the vendor. Additionally, they assumed that all five trust dimensions would be positively influenced by the individual's general PROPENSITY TO TRUST, all together forming the concept of consumer trust. The final dependent variable in their model was the consumer's INTENTION TO TRANSACT with the vendor's system which was supposed to be negatively influenced by the perceived risk and positively influenced by the PERCEIVED USEFULNESS and the PERCEIVED EASE OF USE of the vendor's transaction system. Lui and Jamieson tested their second order factor model with a sample of 133 Australian postgraduate information systems students and analyzed the gathered data with structural equation modeling techniques, using PLS-Graph. They found support for most of their research hypotheses. All five trust dimensions were found to be relatively equal strong predictors of emergent trust towards the adoption, with retailer-integrity trust (path coefficient 0.361, $p < 0.001$) being the relatively strongest predictor and third-party recognition trust (path coefficient 0.223, $p < 0.001$) being the weakest predicting trust dimension. The second order factor, emergent trust towards adoption, also significantly reduced perceived risk (path coefficient -0.457 , $p < 0.001$). Interestingly, the user's propensity to trust only showed minor effects on the factors legal framework trust (path coefficient 0.217, $p < 0.05$) and retailer-integrity trust (path coefficient 0.224, $p < 0.05$). Furthermore, the supposed structural path between perceived ease of use and intention to transact was found to be statistically

insignificant. The relatively strongest paths in Lui and Jamieson's model were the ones between emergent trust and perceived risk and perceived usefulness of the system on the user's intention to transact.

Also Pavlou (2003) integrated trust and risk with variables of the Technology Acceptance Model (see section 3.3.3.) into a research model which placed all variables under the nomological structure of Ajzen and Fishbein's (1975) Theory of Reasoned Action (see section 3.3.1). He posited that CONSUMER TRUST in the e-commerce retailer, defined as "the belief that allows consumers to willingly become vulnerable to Web retailers after having taken the retailers' characteristics into consideration" (Pavlou, 2003, p. 74), would affect consumers' PERCEIVED RISK of the transaction, the PERCEIVED EASE OF USE and PERCEIVED USEFULNESS of the vendor's website as well as the consumers' INTENTION TO TRANSACT. In addition, Pavlou expected a positive relationship between transaction intention and ACTUAL TRANSACTION. Furthermore the three control variables, namely, PERCEIVED REPUTATION of the retailer, SATISFACTION WITH PAST INTERNET TRANSACTIONS and WEB-SHOPPING FREQUENCY were included in the model as well, assuming that they also would have an effect on consumer's trust in the online company. In order to examine the proposed hypotheses Pavlou structural equation modeling, using PLS-Graph, to analyze data gathered from two studies. The results from both studies, the first using a student sample while the second used a regular consumer sample, confirmed the hypothesized effects of consumer trust in the electronic retailer on perceived risk (path coefficient -0.33 for the student sample and -0.63 for the consumer sample, both at $p < 0.01$), perceived usefulness (path coefficient 0.31 for the student sample and 0.41 for the consumer sample, both at $p < 0.01$) and perceived ease of use of the website (path coefficient 0.34 for the student sample and 0.64 for the consumer sample, both at $p < 0.01$) as well as on the consumers' intention to transact with the retailer (path coefficient 0.18 for the student sample and 0.35 for the consumer sample, both at $p < 0.01$). In the second, confirmatory study the hypothesized positive effect of transaction intention on actual transaction was included and significantly supported. The control variables reputation (path coefficient 0.24 for the student sample and 0.30 for the consumer sample, both at $p < 0.01$) and satisfaction with past Internet transactions (path coefficient 0.31 for the student sample and 0.60 for the consumer sample, both at $p < 0.01$) were found to have a significant effect on consumer trust while web-shopping frequency turned out to be statistically insignificant.

Although the study reported in Koufaris and Hampton-Sosa (2004) simply represents a variant of Koufaris and Hampton-Sosa (2002b), due to the obviously same dataset, we decided to include it in this review as an independent study due to a different research model, a different approach in statistically testing their hypotheses and slightly different findings. In this study, Koufaris and Hampton-Sosa (2004) investigated the impact of seven independent variables, namely, the company's PERCEIVED WILLINGNESS TO CUSTOMIZE the products for the customer, the PERCEIVED REPUTATION and PERCEIVED SIZE of the vendor, the PERCEIVED USEFULNESS and PERCEIVED EASE OF USE of the vendor's website, the PERCEIVED SECURITY CONTROL associated with transacting with the vendor's website, and consumer's PROPENSITY TO TRUST, on the dependent variable consumer's INITIAL TRUST IN THE ONLINE VENDOR. In this study initial trust was defined as "the willingness to rely on a third party after the first interaction with that party" (Koufaris and Hampton-Sosa, 2004, p. 378). Testing their instrument's validity with an exploratory factor analysis, Koufaris and Hampton-Sosa, found that the items of the perceived reputation and the perceived size scale surprisingly loaded on the same factor, resulting in the decision to drop the independent variable perceived size from the final structural equation modeling analysis. Subsequently, with a sample of 210 subjects (originally consisting of 212, as in Koufaris and Hampton-Sosa, 2002b, but adjusted of two outliers in the sample) they tested their hypotheses using multiple linear regression analysis. The results showed that perceived reputation of the online vendor had the strongest impact on consumer's initial trust in the company (beta 0.263, $p < 0.01$), followed by perceived security control (beta 0.262, $p < 0.01$) and perceived willingness to customize (beta 0.257, $p < 0.01$). The two TAM elements perceived ease of use and perceived usefulness of the website also had a significant, but smaller impact on consumer's initial trust in the online vendor (perceived usefulness, beta 0.134, $p < 0.05$; perceived ease of use, beta 0.126, $p < 0.05$). Surprisingly, and similar as in Koufaris and Hampton-Sosa (2002a), consumer's propensity to trust had no significant effect on consumer's initial trust in the company.

3.5. Operationalization of Trust Constructs and Data Analysis

In all of the 24 reviewed studies questionnaires were used to collect the required data, in most cases including demographic characteristics. In all but one study the trust-items were measured on seven-point Likert-type scales (only Chiou, 2003, used five-point Likert-type

scales) usually using “strongly agree” and “strongly disagree” as anchors. The research instruments were generated by reusing and adapting items of published scales previously developed and/or by creating new items based on the relevant literature. The researchers used existing scales deployed in the context of marketing (e.g., in Lee and Turban, 2001), psychology (in studies investigating the construct of dispositional trust, e.g., Gefen, 2000) or information systems literature (e.g., Koufaris and Hampton-Sosa, 2002a, 2002b; Pavlou, 2003).

In all 24 studies the reliability of the constructs was at least assessed by computing Cronbach’s Alpha (also referred to as Coefficient Alpha). Some of the researchers additionally calculated the composite factor reliability and the average variance extracted (AVE) as suggested by Fornell and Larcker (1981). This latter approach was for example followed by Gefen (2002b) and Lui and Jamieson (2003).

Discriminant and convergent validities⁶⁰ of the employed instruments were usually checked for by conducting a principal component analysis with rotations (typically orthogonal VARIMAX rotation, except in Lee and Turban, 2001, who used EQUAMAX rotation and Koufaris and Hampton-Sosa, 2004, who conducted an Direct Oblimin rotation expecting their factors to be correlated). In several of the more current studies (e.g., Suh and Han, 2002) the validity of the measurement instrument was tested and assured with the help of confirmatory factor analyses. In the majority of the studies structural equation modeling techniques (SEM) using LISREL, or an equivalent statistical package, were employed to evaluate the research models (i.e., the hypotheses testing). In six studies the researchers relied solely or additionally on linear regression analyses and in one study variance analyses (ANOVA, MANOVA) were used for hypotheses testing.

⁶⁰ The discriminant validity can be defined as the degree to which the measures of different constructs are distinct from each other, while the convergent validity refers to the degree to which multiple attempts to measure the same construct are in agreement with each other (cf. e.g., Suh and Han, 2002, p. 253; see also chapter six of this thesis).

Study	Object of Trust	Conceptualization of Trust	Significant Antecedents of Trust	Significant Consequences of Trust
Jarvenpaa et al. (1999, 2000)	online vendor	“a trustor’s expectations about the motives and behaviors of a trustee” and “consumer’s trust directly in the store, or the store’s trustworthiness” (in Jarvenpaa et al., 2000) “a consumer’s willingness to rely on the seller and take action in circumstances where such action makes the consumer vulnerable to the seller” (in Jarvenpaa et al., 1999)	Perceived Reputation of vendor (+) Perceived Size of vendor (+)	Attitude toward transaction (+) Perceived risk of transaction (-)
Gefen (2000)	online vendor	“the confidence a person has in his or her favorable expectations of what other people will do, based in many cases, on previous interactions“ and as “the belief that the other will behave as one anticipates”	Familiarity with the online vendor (+) Disposition to trust (+)	Intended inquiry (+) Intended purchase (+)
Gefen and Straub (2003)	online service provider	“the belief that others will behave in predictable ways”	Social presence on the website (+)	Intended purchase (+)
de Ruyter et al. (2001)	an online service	an attitude	Organizational reputation (+) Perceived risk of e-service (-)	-
Lee and Turban (2001)	online shopping	“the willingness of a consumer to be vulnerable to the actions of an Internet merchant in an Internet shopping transaction, based on the expectation that the Internet merchant will behave in certain agreeable ways, irrespective of the ability of the consumer to monitor or control the Internet merchant”	Perceived integrity of the merchant (+) Propensity to trust on perceived integrity (MoV)	-
Pavlou and Chellappa (2001)	online transaction	“the subjective probability with which consumers believe that a particular transaction will occur in a manner consistent with their confident expectation”	Perceived Privacy (+) Perceived Security (+) Perceived Reputation (+) (CV) Satisfaction with past online transactions (+) (CV)	-
Bhattacharjee (2002)	online firm	“the trustor’s belief in the trustee’s ability, benevolence, and integrity”	Familiarity with the online firm (+)	Willingness to transact (+)

Table 2. Conceptualizations and Findings of Reviewed Articles.

(+) ... positive relationship, (-) ... negative relationship, MoV... moderating variable/effect, CV... control variable

Study	Object of Trust	Conceptualization of Trust	Significant Antecedents of Trust	Significant Consequences of Trust
Einwiller (2002)	online vendor, online system, oneself	the willingness or intention of the consumer to rely on an online vendor in a purchasing situation, despite of potential negative consequences. The willingness is based upon a trusting opinion or attitude toward the vendor, toward oneself and toward the Internet system forming the environment of the transaction [translated by the author]	Perceived Reputation of vendor (+) Perceived Reputation of system (+)	Trusting intention to purchase (+)
Gefen (2002a)	online vendor	“the willingness to make oneself vulnerable to actions taken by the trusted party based on the feeling of confidence or assurance”	Reliability-Responsiveness-Assurance (+)	Perceived risk with vendor (-) Customer loyalty (+)
Gefen (2002b)	online vendor	“a general belief [overall trust] that the specific other party can be trusted .. with the specific beliefs in ability, integrity and benevolence [dimensions of trustworthiness] serving as antecedents of this general belief”	Model 1: Past purchase at vendor (+) (CV) Model 2: Perceived integrity (+) Perceived benevolence (+)	Model 1: Window-shopping intention (+) Intended Purchase (+) Model 2: Intended Purchase (+)
Kim and Prabhakar (2002)	electronic transaction channel (Internet), bank	“the willingness of a consumer to be vulnerable to the actions of the Internet based on the expectation that the Internet will perform what the consumer expects it to do – and not something else – despite the possibility of environmental disruption, human user and operator errors, and attacks by hostile parties” and “the willingness of a consumer to be vulnerable to the actions of the bank based on the expectation that the bank will perform a particular action important to the consumer, irrespective of the ability to monitor or control that other party”	Propensity to trust (+) Word of mouth referrals (relational content) (+) Structural assurances of the bank(+)	Adoption of online banking (+)
Koufaris and Hampton-Sosa (2002a)	online vendor	“the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (taken from Mayer et al., 1995, p. 712)	Perceived usefulness of website (+) Perceived ease of use of website (+)	Intention to return (+) Intended purchase (+)

Table 2. Conceptualizations and Findings of Reviewed Articles (continued).

Study	Object of Trust	Conceptualization of Trust	Significant Antecedents of Trust	Significant Consequences of Trust
Koufaris and Hampton-Sosa (2002b)	online vendor	“initial perceived company trustworthiness” (based upon Jarvenpaa et al., 2000)	Perceived privacy control (+) Perceived security control (+) Perceived usefulness of the website (+) Perceived reputation of vendor (+) Perceived information sharing by the vendor (+)	Intended purchase (+)
McKnight et al. (2002)	online service provider	“a multi-dimensional construct with two inter-related components – trusting beliefs (perceptions of the competence, benevolence, and integrity of the vendor), and trusting intentions – willingness to depend (that is, a decision to make oneself vulnerable to the vendor)”	Perceived vendor reputation (+) Perceived website quality (+) Structural assurance of the web (+)	Intention to follow vendor advice (+) Intention to share personal information with the vendor (+) Intended purchase from the vendor (+)
Suh and Han (2002)	online banking site	“the belief that the promise of another can be relied upon and that, in unforeseen circumstances, the other will act in spirit of goodwill and in a benign fashion toward the trustor”	Perceived usefulness of the website (+)	Attitude toward using online banking (+) Intention to use online banking (+)
Teo and Liu (2002)	online vendor	“a consumer’s willingness to rely on the vendor and take action in circumstances where such action makes the consumer vulnerable to the vendor”	Perceived reputation of vendor (+) System assurance of the vendor (+) Propensity to trust (+)	Attitude toward transaction (+) Perceived risk of transaction (-)
Chiou (2003)	Internet provider	-	-	Customer loyalty (+) Overall satisfaction with provider (+) Perceived value of provider (+)
Cheung and Lee (2003)	online shopping	“the willingness of a consumer to be vulnerable to the actions of an Internet merchant in an Internet shopping transaction, based on the expectation that the Internet merchant will behave in certain agreeable ways, irrespective of the ability of the consumer to monitor or control the Internet merchant” (taken from Lee and Turban, 2001, p. 79)	Perceived integrity of the vendor (+) Perceived risk of online shopping (-) Propensity to trust on perceived integrity (MoV)	-

Table 2. Conceptualizations and Findings of Reviewed Articles (continued).

Study	Object of Trust	Conceptualization of Trust	Significant Antecedents of Trust	Significant Consequences of Trust
Das et al. (2003)	general others	“[a generalized] expectancy that the word, promise, verbal or written statement of another individual or group can be relied on” (slightly adapted from Rotter, 1971, p. 444)	-	Concern towards security on the web (-)
Gefen et al. (2003)	online vendor	a set of specific beliefs about the other party including perceived integrity, benevolence, ability and predictability, based upon past experience	Calculative-based beliefs (+) Institution-based structural assurances (+) Institution-based situational normality (+) Perceived ease of use of the website (+)	Perceived usefulness of the website (+) Intended use of the online vendor (+)
Lui and Jamieson (2003)	transaction system of an online vendor	a multidimensional, second order construct, consisting of five beliefs (retailer-ability trust, retailer-integrity trust, technology trust, legal framework trust, third-party recognition trust)	Propensity to trust (+)	Perceived risk of transacting with the online vendor’s system (-)
Pavlou (2003)	online vendor	“the belief that allows consumers to willingly become vulnerable to Web retailers after having taken the retailer’s characteristics into consideration”	Perceived reputation of vendor (+) (CV) Satisfaction with past online transactions (+) (CV)	Perceived risk of the transaction (-) Perceived usefulness of the website (+) Perceived ease of use of the website (+) Intention to transact with the vendor (+)
Koufaris and Hampton-Sosa (2004)	online vendor	“the willingness to rely on a third party after the first interaction with that party”	Perceived willingness to customize products (+) Perceived reputation of vendor (+) Perceived usefulness of the website (+) Perceived ease of use of the website (+) Perceived security control associated with transacting with the vendor (+)	-

Table 2. Conceptualizations and Findings of Reviewed Articles (continued).

3.6. Summary and Discussion of the Findings

After the review of the 24 studies several major findings can be identified and will be presented and summarized in the this section. Firstly, the “state-of-the-art” of e-commerce trust conceptualizations will be discussed.⁶¹ Secondly, reportedly relevant antecedents of consumer trust in online vendors will be summarized, thirdly, followed by a discussion of relevant consequences of trust in e-commerce (see also table 2). Fourthly, conceptual and methodological limitations of the 24 studies will be pointed out.

3.6.1. Conceptualizations of Consumer Trust in Electronic Commerce

Analyzing the different conceptualizations of (interpersonal) trust in the online vendor used by the researchers (see table 2), they can be filed into four categories. In some studies, forming the first category, trust was not defined at all (in de Ruyter et al., 2001; Chiou, 2003). A second group of authors viewed consumer trust in e-commerce as *one-dimensional belief* (or subjective probability and expectation, which according to Fishbein and Ajzen, 1975, is also a belief) *or attitude* about the trustors’ (a specific online company or website, a specific online service or transaction, or general others) trustworthiness and future behaviors (in Gefen, 2000; Jarvenpaa et al., 2000; Koufaris and Hampton-Sosa, 2002a who termed it “perceived trustworthiness” which is basically equivalent to trusting beliefs; Suh and Han, 2002; Das et al., 2003; Gefen and Straub, 2003; Gefen et al., 2003; Pavlou, 2003) or about the expected occurrence of a certain transaction (in Pavlou and Chellappa, 2001). A third approach, pursued in eight of the studies, was to research trust as a *one-dimensional willingness or intention* to depend on the online company in a situation of risk (in Jarvenpaa, 1999; Teo and Liu, 2002; Koufaris and Hampton-Sosa, 2004) or to become vulnerable to the online company’s actions based on some positive belief about its future behavior (in Lee and Turban, 2001; Koufaris and Hampton-Sosa, 2002a; Cheung and Lee, 2003) or about both, the company’s behavior and the electronic transaction medium’s performance (in Kim and Prabhakar, 2002) or about the specific situation (in Gefen, 2002a). Fourthly, the authors of four studies abandoned the one-dimensional approach toward trust and explicitly viewed trust as *multi-dimensional* construct. Einwiller (2002) suggested the three dimensions of trust in the

⁶¹ Note that if we use the term “trust” or “consumer trust” without any further prefix, we discuss interpersonal trust and not dispositional- or institution-based trust (see also section 2.7).

vendor, trust in the electronic system and specific self-confidence. Gefen (2002b) and Bhattacharjee (2002) concluded that trust might rather be a mix of overall trust in the vendor combined with the three distinct but related beliefs about the vendor's ability, integrity and benevolence, forming the three dimensions of overall trust (Bhattacharjee, 2002, initially modeled his trust construct as a second-order construct but after an exploratory pilot study rejected the initial second-order model in favor of an one-dimensional conceptualization). Again, McKnight et al. (2002) proposed two dimensions of trust, namely trusting beliefs (in the vendor's competence/ability, benevolence and integrity), and trusting intentions/willingness to depend in regard to a given vendor, whereby within their trust-concept trusting beliefs are the direct antecedent of trusting intentions, consistent with the Theory of Reasoned Action. Lui and Jamieson (2003) on the other hand suggested trust to be a multi-dimensional second order construct consisting of the five beliefs: (vendor-)ability-trust, (vendor-)integrity-trust, legal-framework trust, third party-recognition trust, and technology trust, i.e. a mix of interpersonal, institutional and technological trust-facets.

In this thesis we decided to embrace the latter, multidimensional view of interpersonal trust (see section 2.7.3.). While Einwiller (2002) and Lui and Jamieson (2003) both included some constructs (e.g., technological trust, self-confidence, institutional-based trust), which we consider not to be dimensions of consumer's interpersonal trust in an online vendor but partly as antecedents of interpersonal trust, their approaches are not adopted in this thesis. Gefen's (2002b) and Bhattacharjee's (2002) initial multidimensional view of consumer trust in the vendor is very similar to McKnight et al.'s (2002), with the major distinction that, according to Gefen, trusting beliefs about the vendor should be further split into three separate dimensions. Yet, McKnight et al.'s theoretical conceptualization is very well grounded in several conceptual papers and has been empirically validated in their confirmatory study, contrary to Gefen's (2002b) rather exploratory study (furthermore Bhattacharjee, 2002, found his multi-dimensional conceptualization of trusting beliefs not to work in the CFA).⁶² Thus, in the following we will adopt the two-dimensional view of interpersonal consumer trust as suggested by McKnight et al. (2002; see also McKnight and Chervany, 1996, 1998, 2001-2002, and McKnight et al., 2000), being a combination of trusting beliefs about the vendor's

⁶² In addition, there is also empirical evidence in the field of relationship marketing literature to view these perceived vendor characteristics as one-dimensional construct, e.g., in the study of Doney and Cannon (1997), who conceptualized trust as the perceived credibility (which is related to perceived integrity) and perceived benevolence of the trustor but found that in the statistical analysis these two hypothesized dimensions of trust collapsed into a one-dimensional construct.

competence, integrity and benevolence and trusting intention on to the vendor. Attitudes are not included in this view of trust in the online vendor because prior MIS research (e.g., Davis, 1989), has found that in research about information systems, which is clearly related to trust on the Internet, direct effects of beliefs are usually stronger than their indirect effects when attitudes are additionally included as proposed by TRA (Fishbein and Ajzen, 1975), and because two facets of trusting beliefs, namely benevolence and integrity, partly cover affects (i.e., elements of attitude) (cf. Bhattacharjee, 2002, p. 222). However, although propagating the two-dimensional view of trust of McKnight et al. (2002; see also section 2.2.7. and 2.7.2.) in this thesis, we decided to also test a rival model in the following in our study, including a one-dimensional trust construct, namely, trusting beliefs about the online vendor only (see chapters four and six). The approach of testing rival models is widely suggested in marketing literature, especially for the case of theory construction (see for example Anderson and Gerbing, 1988).

3.6.2. Antecedents of Consumer Trust in Electronic Commerce

The significant direct antecedents of interpersonal trust in the online vendor, reported in the reviewed studies, can be filed into four categories, namely, beliefs about vendor characteristics, beliefs about website characteristics, institutional-based beliefs and consumer characteristics. Other variables, being significant antecedents of the antecedents of consumer's trust in the vendor, as found in some multi-stage research models, are not discussed at this point but can be found in section 3.4.

3.6.2.1. Beliefs about Characteristics of the Internet Merchant

Several characteristics of an online vendor were reportedly recognized to have a significant impact on consumers' trust in the online vendor. Lee and Turban (2001), Gefen (2002b) and Cheung and Lee (2003) showed that a vendor's perceived integrity positively influenced consumer's trust, as well as its perceived benevolence (Gefen, 2002b), while Gefen (2002a) reported the variable perceived vendor's reliability-responsiveness-assurance to be an antecedent of trust. As discussed in section 2.7.3.1., integrity and benevolence are considered to be facets of the perceived trustworthiness of a party in this thesis. Taking a closer look at the reliability-responsiveness-assurance factor, reported in Gefen (2002b), also reveals very

similar facets. Gefen (2002b) measured “reliability” with items using such notions as dependability and sticking to promises, “responsiveness” with questions including prompt service and freeness of errors, and “assurance” with items covering issues like courteousness or knowledge to do the job. Hence, this latter factor of reliability-responsiveness-assurance closely resembles the “classic” dimensions of trustworthiness as suggested by Mayer et al. (1995) and McKnight et al. (2002).⁶³

Aside from perceptions of trustworthiness of the vendor also several other beliefs were found to be significant antecedents of consumer trust in the online vendor. Among these were the perceived reputation of the vendor (in Jarvenpaa et al., 1999, 2000; de Ruyter et al., 2001; Pavlou and Chellappa, 2001; Einwiller, 2002; McKnight et al., 2002; Teo and Liu, 2002; Koufaris and Hampton-Sosa, 2002b, 2004; Pavlou, 2003), the very related construct of word-of-mouth referrals about the object of trust (in Kim and Prabhakar, 2002), the perceived size of the vendor (in Jarvenpaa et al. 1999, 2000), the vendor’s perceived willingness to share information with the customer (in Koufaris and Hampton-Sosa, 2002b, 2004), the vendor’s perceived willingness to customize its products for the customer (in Koufaris and Hampton-Sosa, 2002b, 2004) and beliefs about the vendor’s conduct in relation to privacy (i.e., the handling of consumers’ personal information) and in relation to security (i.e. the employed safeguards to ensure data security) and the vendor’s general attitude in regard to security (in Pavlou and Chellappa, 2001; Kim and Prabhakar, 2002; Teo and Liu, 2002; Koufaris and Hampton-Sosa, 2002b,2004). Furthermore, de Ruyter et al. (2001) researching the case of online service providers recognized perceived risk of the online vendor’s service to be an antecedent of trust in the electronic service.

3.6.2.2. Beliefs about Perceived Characteristics of the Website

McKnight et al. (2002) found support for their assumption that the factor perceived website quality (including the elements of interface design, ease of information retrieval, communication and contact opportunities, etc.) is an antecedent of consumer trust in the online. Gefen and Straub (2003) reported that social presence on the website (i.e. the feeling

⁶³ However, in two of these three studies (in Lee and Turban, 2001; Cheung and Lee, 2003) trust was defined as an intention. Thus, beliefs (perceptions) about the vendor’s trustworthiness being an antecedent of consumer’s trusting intention very much resembles the view of McKnight et al. (2002), who considered trusting beliefs in the vendor’s competence, benevolence and integrity to be being part of the two-dimensional trust construct.

that “real” people are present), positively influenced trust. Social presence on a website refers to such aspects as perceptions of human warmth and contact, personalness, sociability. Additionally, the two major dimensions of the Technology Acceptance Model, perceived ease of use of the website (in Koufaris and Hampton-Sosa, 2002a; 2004; Gefen et al., 2003) and perceived usefulness of the site (in Koufaris and Hampton-Sosa, 2002a, 2002b, 2004; Suh and Han, 2002), were found to be antecedents of consumer trust in the vendor.

3.6.2.3. Institutional-based Beliefs

Two institutional-based trust beliefs were found to be antecedents of interpersonal trust in the studies, namely, perceptions of situational normality (i.e., the belief that the specific purchase process or situation is similar to related experiences and thus safe, see section 2.7.2.1.) (in Gefen et al., 2003), and beliefs about structural assurances and safeguards on the Internet (i.e. the belief about protection from consumer organizations, legal and technological safeguards on the Internet, etc., see also section 2.7.2.1.) (in McKnight et al., 2002; and partly in Gefen et al., 2003). Quite related to the latter institutional-based belief about structural assurances and safeguards on the Internet, Einwiller (2002) reported perceived system reputation (i.e., perceptions of the Internet as being a safe shopping environment) to be an antecedent of trust. A construct very similar to the McKnight et al.’s (2002) construct perceived structural assurances of the Web.

Similarly, also a construct termed “perceived Web risk” was included in McKnight et al.’s, (2002) research model, covering consumer’s perceived risk of submission of personal or financial information on the Internet, which was not included in their model as antecedent of interpersonal trust but as an additional institutional/structural antecedent of consumers’ transaction intentions. Quite interestingly Cheung and Lee (2003) found their conceptually related construct “perceived risk of online shopping” (i.e., perceptions that the Internet is a risky and dangerous shopping environment) to be a significant antecedent of trust. Yet, despite Cheung and Lee’s finding, in this thesis we propagate McKnight et al.’s (2002) view that perceived Web/Internet risk should not be regarded as an antecedent of consumer trust in a specific online vendor but should rather as an independent construct affecting consequences of trust (i.e., not being mediated through interpersonal trust).

3.6.2.4. Consumer Characteristics

Several significant antecedents of interpersonal trust in e-commerce, found in the reviewed studies, cover characteristics of the consumer and can be grouped into three categories. Firstly, the consumer's general disposition to trust other people, secondly, calculative beliefs about others, thirdly, factors strongly linked with past experience with a specific vendor or e-commerce in general. The consumer's general disposition to trust was reportedly found to be an antecedent of consumer's trust in an online vendor or its transaction system in Gefen (2000), Kim and Prabhakar (2002), Teo and Liu (2002) and Lui and Jamieson (2003). In two other studies (in Lee and Turban, 2001; Cheung and Lee, 2003) dispositional trust was included as moderating variable and was found to have a moderating impact on consumer's perceptions of the vendor's integrity.⁶⁴ The second consumer characteristic found to positively influence consumer's trust in an online vendor are calculative-based beliefs of the consumer (in Gefen et al., 2003). These beliefs cover the phenomenon that the consumer thinks the other party has nothing to gain or even more to lose by cheating on the trustor (i.e., due to deterrents, "reputational hostage taking", etc., see also section 2.6.). A third group of consumer characteristics covers the level of experience of the consumer regarding the specific vendor or e-commerce transactions in general (in Gefen, 2000, familiarity with the vendor and similar shopping situations; in Pavlou and Chellappa, 2001 and Pavlou, 2003, satisfaction with past transactions on the Internet; in Gefen, 2002b, past purchase experience with the specific online vendor).

3.6.3. Consequences of Consumer Trust in Electronic Commerce

The significant consequences of interpersonal trust in e-commerce may be grouped into three categories, namely, 1) beliefs and attitudes, 2) behavioral intentions and 3) behavior. Other variables being affected by these consequences of trust, as found in some multi-stage research models, are not discussed at this point but can be found in section 3.4.

⁶⁴ However, in two other studies the consumer's dispositional trust was found to be insignificant as direct antecedent of interpersonal trust (in Koufaris and Hampton-Sosa, 2004) and as control variable (in Koufaris and Hampton-Sosa, 2002a).

3.6.3.1. Beliefs and Attitudes

Beliefs and attitudes found to be consequences of consumer trust in online vendors can be further split into three sub-categories. The first group includes consumers' beliefs about the specific transaction and the transaction environment, the second cluster covers beliefs and attitudes about the specific online vendor, while the third category consists of beliefs about the online vendor's website. In several of the studies consumers' attitudes toward the transaction with the specific vendor (in Jarvenpaa et al., 1999, 2000; Teo and Liu, 2002), and consumers' perceived risk of transacting with the given vendor (in Jarvenpaa et al., 1999, 2000; Gefen, 2002a; Teo and Liu, 2002; Pavlou, 2003) or with the specific vendor's transaction system (in Lui and Jamieson, 2003) were reportedly significant consequences of consumer trust. Hence, while the relationship between interpersonal trust and attitudes about the other party is positive, its relationship with perceived risk is negative. Furthermore, Das et al. (2003), found the consumers' attitude toward security on the Web to be a consequence of consumers' disposition to trust (in their study intriguingly referred to as "interpersonal trust" based on Rotter, 1980). Chiou's (2003) findings fit into the second category, as he reported consumers' satisfaction with the company and perceptions of the value of the company's offers to be positively affected by consumer's interpersonal trust. Interestingly and somewhat contrary to the findings reported in section 3.6.2.2. of this thesis, Pavlou (2003) found also empirical evidence that consumers' trust in an online vendor positively influenced consumers' perceptions of the vendor website's usefulness and ease of use. In other words, this seems to suggest that there exists an interaction effect between consumer trust and the two variables of the Technology Acceptance Model. While these website characteristics were found to be antecedents of consumer trust (in section 3.6.2.2.) there also seems to be some kind of backward effect of interpersonal trust toward these two variables.

3.6.3.2. Behavioral Intentions

A number of consumers' behavioral intentions were found to be directly affected by interpersonal trust in an online vendor. Most of the time consumer trust was found to positively affect consumer's intention to purchase/transact with the given online vendor or to use online banking (in Gefen 2000; Gefen and Straub, 2003; Bhattacharjee, 2002; Einwiller, 2002; Gefen, 2002b; Koufaris and Hampton-Sosa, 2002a; Koufaris and Hampton-Sosa,

2002b; McKnight et al., 2002; Suh and Han, 2002; Gefen et al., 2003; Pavlou, 2003). Furthermore, consumer trust affected consumers' intention to inquire/"window shop" at the vendor (in Gefen, 2000; Gefen and Straub, 2003; Gefen, 2002b), consumers' intention to return to the online vendor (in Koufaris and Hampton-Sosa, 2002a), consumers' intention to share personal information with the vendor and to follow the vendor's advice (in McKnight et al., 2002) as well as consumers' loyalty intention with the vendor (in Gefen, 2002a; Chiou, 2003).

3.6.3.3. Behavior

Only one study (in Kim and Prabhakar, 2002), posited actual behavior as direct consequence of trust because in most cases scholars employed the theoretical framework of the Theory of Reasoned Action and included behavioral intentions as mediator between trust and behavior in their research models. However, Kim and Prabhakar (2002) found behavior – in their case the adoption of online banking at a specific bank - to be significantly predicted by consumer trust in the electronic transaction channel (i.e., the Internet).

3.7.3. Limitations of the Reviewed Studies

Several relevant limitations of the 24 reviewed studies can be identified and should be taken into account before beginning to develop our research hypotheses and our research design in chapter four. Some of these limitations were critically noted by the researchers themselves, some others were additionally identified and will be discussed in the course of this section.

One major limitation mentioned by almost all researchers relates to the characteristics of their samples, resulting in potential problems of external validity of their findings (mentioned by Jarvenpaa et al. 1999, 2000; Lee and Turban, 2001; Pavlou and Chellappa, 2001; Koufaris and Hampton-Sosa, 2002a, 2002b, 2004; Gefen, 2002a; McKnight et al., 2002; Teo and Liu, 2002; Gefen et al., 2003; Cheung and Lee, 2003; Lui and Jamieson, 2003). Indeed, fourteen of the 24 reviewed studies solely used convenience samples made up of students, a large number of them being heavy Internet users and often experienced online shoppers, to gather data for the analyses of their hypotheses (see also section 3.2. and table 1). As students should not be considered representative for the entire online consumer population the studies' results may

not be generalizable to other types of customers, for example to those who still refrain from using the Internet as shopping environment, to novice Internet users or to those without higher education. Potential bias may have also occurred regarding the subjects' perceptions of the employed stimuli, the subjects' evaluation of the conceptualized antecedents of trust, etc. While it often may be unavoidable to use student samples for exploratory research or measurement refinement studies, it seems imperative for future online trust research that more representative samples ought to be used, especially for confirmatory studies and cross-validations.

Aside from their sample characteristics some of the scholars also critically recognized their methodologies to potentially cause limitations to their findings. One important limitation, quite often noted by the scholars, is due to many studies using well-known online vendors as stimulus for their participants and/or limiting the stores, which the subjects evaluated, to only a few industries and product categories. Especially online bookstores and online travel-sites were used very often in the reviewed studies (in Jarvenpaa et al., 1999,2000; Gefen, 2000; Gefen, 2002a; Gefen 2002b; Gefen and Straub, 2003; Gefen et al., 2003; partly also in Bhattacharjee, 2002; Koufaris and Hampton-Sosa, 2002a, 2002b, 2004; Pavlou, 2003), and mostly well-established brands such as the bookstore Amazon.com or the travel-agencies Travelocity.com or Expedia.com. The external validity of the gained results and relationships among the variables might therefore be limited, even more as some of these studies additionally solely relied on student samples. Future research should try to use different industries and product types and lesser-known websites. As this thesis aims to analyze consumers' initial trust in relation to an unfamiliar vendor these limitations need to be especially paid attention to in the following chapters. Jarvenpaa et al. (1999, 2000) also mentioned their laboratory setting and the usage of an introductory website for all participants in their experiential online surveys as potential limitation and to have potentially caused bias, as well as their use of real-world websites and not controlling for interface design and content or Internet connections, whereas de Ruyter et al. (2001) concluded that their experimental laboratory setting with offline role-playing scenarios, not providing any real-life stimuli, might potentially lack realism.

Some scholars mentioned problems in relation to their usage of online questionnaires as potential limitations. Kim and Prabhakar (2002) noted the "self-selection" bias of their data gathered from online questionnaires placed on a real websites, while Bhattacharjee (2002)

speculated about potential bias because of the usage of online survey instead of traditional offline “paper and pencil”-questionnaires. Another methodological problem which occurred was that in all but two studies (only in Kim and Prabhakar, 2002, who explored trust in Internet banking; and Pavlou, 2003, in his second, confirmatory survey, asking participants about past behavior) only trusting beliefs and trusting intentions were measured, hence, participants were not required or even not allowed to actually perform a shopping transaction during the study, most likely because of limited research budgets. While future research more often should include other behavioral manifestations of interpersonal trust, apart from the actual usage of Internet banking, this limitation is very hard to overcome in academic research due to limited resources. Furthermore, the authors of two studies warned of potential common-method variance causing bias to their findings (noted by Gefen et al., 2003; Pavlou, 2003). Common-method variance may result from collecting all measures at the same point of time and with the same instrument, influencing the response behavior of respondents (Gefen et al., 2003).

Regarding the studies’ research designs three other limitations were reported by scholars. Many recognized their cross-sectional studies as problematic because causal relationships were not observable and thus, they argued for future longitudinal studies to prove causation (mentioned by Lee and Turban, 2001; Koufaris and Hampton-Sosa, 2002b; McKnight et al., 2002; Gefen et al., 2003; Pavlou, 2003). In addition, it is noteworthy that hardly any study included qualitative research methods despite of minimal qualitative pretests for item refinements. In fact, only two of the 24 studies (Einwiller 2002 and Chiou, 2003, who both reported exploratory, qualitative interviews with customers prior to their quantitative study) conducted qualitative studies to research consumers’ trust or its potential antecedents and consequences before engaging in quantitative studies and quantitative statistical analyses testing hypotheses developed based on prior literature. This positivistic approach may pose a severe limitation as important influence factors might have been overlooked by the authors of the 24 studies by just relying on literature reviews.

While structural equation modeling and confirmatory factor analysis, the major analytical techniques in the research stream of online consumer trust research, are based on the assumption of multivariate-normal distribution of the data, only one study reported a test evaluating the suitability of the data for these procedures prior to the analysis (in Gefen, 2002b, who used a Kolmogorov-Smirnov test which checks the data for normal-distribution).

In addition, to use structural equation modeling large sample sizes are required. Bhattacharjee (2002) for example suggests the rule of thumb of using sample sizes five to ten times the size of the included items in the questionnaire.⁶⁵ Yet, in some of the reviewed studies using structural equation modeling these requirements were not fulfilled (e.g., in Koufaris and Hampton-Sosa, 2002b, the ratio between manifest and latent variables was lower and their sample size was rather modest compared to the number of their manifest items). It should be advisable for future studies to insure that the requisite assumptions for their analytical tests are fulfilled.

Another limitation to the reported findings may be caused by the usage of research instruments not being extensively validated by scholars. Although all researchers tested for at least the reliability of their measures (mostly by computing Cronbach's Alpha), some studies reported problems with the construct validities of their scales (e.g., in Gefen, 2002a; Koufaris and Hampton-Sosa, 2004). As many studies included the two major dimensions of the Technology Acceptance Model in their instruments (i.e., perceived usefulness and perceived ease of use) which might be problematic in regard to content validity because of the redundant phrasing of the TAM items and the Attenuation Paradox (Loevinger, 1954, see also section 3.3.3), future studies might sometimes be better off deviating from the use of problematic existing scales and rather develop new items based upon new studies.

A final potential limitation the authors of many studies often critically noted themselves is the use of quite small and limited research models. However, this problem is almost not avoidable in academic research due to limited resources. Thus, the only alternative seems to be to conduct more studies, each testing other facets of interest and step by step extending our level of knowledge about (online) trust.

In the following chapters we will strive to overcome many of the limitations and shortcomings of these prior studies, however, the reader should note that a number of these problems are not solvable in the course of a single PhD thesis.

⁶⁵ The University of Texas's Statistical Service Online FAQ further recommends a minimum sample size of 200 subjects and a minimal ratio of three items (manifest variables) for one factor (latent variable) (cf. <http://www.utexas.edu/cc/faqs/stat/general/gen6.html>). Yet, there are no widely accepted guidelines for the minimum sample size in structural equation modelling (see for example Anderson and Gerbing, 1988; Bühner, 2004).

4. Hypotheses Development

This chapter aims at transforming the theoretical findings, presented and discussed in chapters two and three, as well as common trust conceptualizations within the field of relationship marketing, into formal research hypotheses.

4.1. Mediating Variables - Trusting Beliefs and Trusting Intention

While several of the empirical online trust studies reported in chapter three (e.g., Gefen, 2000, Jarvenpaa et al. 1999, 2000; Suh and Han, 2002 or Pavlou, 2003) as well as a number of studies within the field of relationship marketing proposed a one-dimensional view of trust (e.g. Anderson and Narus, 1990; Crosby, Evans and Cowles, 1990), either as one-dimensional belief, attitude or intention, we do not follow this stream of trust research. Instead, especially building on the theoretical works of McKnight and Chervany (1996), McKnight et al. (1998), McKnight and Chervany (2001-2002), and McKnight et al. (2002) we propose consumer interpersonal trust in a given online retailers store to be two-dimensional, consisting of the dimension of TRUSTING BELIEFS IN THE VENDOR'S COMPETENCE, BENEVOLENCE AND INTEGRITY (i.e., beliefs in the vendor's trustworthiness), and the dimension of TRUSTING INTENTION TO DEPEND ON THE ONLINE VENDOR (see also sections 2.2.7. and 2.7.3. of this thesis). McKnight and his colleagues based this approach toward interpersonal trust on a separation of beliefs and intentions as suggested by Ajzen and Fishbein's (1975) Theory of Reasoned Action, and an influential paper of Mayer et al. (1995). Although there are other scholars disagreeing with such a conceptualization, as mentioned above, a multi-dimensional view of trust is also consistent with marketing literature (cf. meta-analyses of Geyskens, Steenkamp and Kumar, 1998, on trust in B2B marketing channel relationships and of Swan, Bowers and Richardson, 1999, on trust in B2B marketing relationships between salespeople and their customers; furthermore, explicit examples of multidimensional approaches toward trust in relationship marketing literature are Ganesan, 1994; Ganesan and Hess, 1997; Sirdeshmukh, Singh and Sabol, 2002; while Moorman, Deshpandé and Zaltman, 1993 and Doney and Canon, 1997, defined their interpersonal trust constructs two-dimensional but subsequently operationalized and/or measured trust as a one-dimensional construct in their studies).

Hence, based on the definitions of Moorman et al. (1993), Mayer et al. (1995) and McKnight et al. (1998; 2002), we define consumer's initial trust in an online retail store as *the willingness (trusting intention) of the consumer to be vulnerable to the actions of the online vendor, based on beliefs (trusting beliefs) about the online vendor's competence, integrity, and benevolence resulting from the first interaction with the vendor, irrespective of the ability to monitor or control the online vendor.*

McKnight and his colleagues furthermore proposed that these two distinct dimensions of trust are related with each other. Hence, they proposed that consumer's trusting beliefs are a direct antecedent of the consumer's trusting intention to depend on the vendor (note that "intention" and "willingness" are used interchangeably in this thesis) (McKnight et al., 1998, 2002). It is therefore hypothesized that:

H1: Consumer's trusting beliefs positively affect consumer's trusting intention to depend on the online vendor.

4.2. Independent Variables

Regarding the antecedents of both, trusting beliefs and trusting intention (i.e., interpersonal trust), prior online trust literature (see chapter three) as well as findings within relationship marketing literature point to several theoretical assumptions. As outlined in section 3.6.2. antecedents of trust may be grouped into four categories, namely, consumer's beliefs about company characteristics, beliefs about website characteristics, structural/institutional-based beliefs, and consumer characteristics.

While the empirical findings of prior online trust research in chapter three suggest consumer's perceptions or beliefs about the online vendor's reputation, size, willingness to share information with the consumer, willingness to customize its products for the customer, the vendor's conduct regarding privacy of customer data and technical data security, as well as perceptions of word-of-mouth about the vendor's transaction medium and perceived risk of the vendor's service (in the case of online service providers) to be antecedents of consumer trust in the online vendor, not all of these antecedents apply to the specific case of initial trust in an online retail store. Because in this thesis initial trust formation is specified to refer to the

situation in which the consumer has no prior knowledge about the given, unfamiliar vendor and experiences her or his first interaction with the given online retailer, some of these proposed antecedents, namely, perceived vendor reputation and word-of-mouth, are not applicable (although perceived reputation was measured in past studies on consumers' initial trust formation with an unfamiliar vendor by McKnight et al., 2002, and by Koufaris and Hampton-Sosa, 2002b, 2004, we consider reputation not to be a suitable predictor of initial consumer trust because of the consumer's complete lack of information about this factor). Perceived size is additionally excluded from our research model because this antecedent, measured and statistically supported by Jarvenpaa et al. (1999,2000) for the case of initial trust formation, turned out to be only a weak predictor of interpersonal trust when respondents are provided with additional informational material about the vendor's yearly revenues, year of foundation, countries shipments are made to, etc. (e.g., see Jarvenpaa et al., 2000, and their Appendix B, pp. 67-69). However, in real life consumers often do not have all this information unless it is provided on the vendor's website and in fact in the study of Koufaris and Hampton-Sosa (2004), who tried to measure perceived vendor size in their research model without such unrealistic treatments, it was found that this factor was problematic, collapsed and merged into one single factor together with reputation in their exploratory factor analyses (see chapter three)⁶⁶. In the following, the proposed antecedent of perceived risk of the e-service (as in de Ruyter et al., 2001) is also not included as an antecedent because the focus of the subsequent empirical study will be on online retailers and because perceived risk of the transaction will be incorporated as a consequence of trust, contrary to de Ruyter et al.'s (2001) finding but consistent with the models of Jarvenpaa et al. (1999,2000), Gefen (2002a) and Teo and Liu (2002). This decision was willingly made because perceived risk has been related to online trust in many different ways in the past, e.g., as antecedent and as consequence of interpersonal trust as well as a moderating effect on interpersonal trust or simply as correlate of trust (see Lim, 2003, for a review), and a decision was needed in order to keep the research model parsimonious. Therefore, only the vendor's willingness to share information with the consumer, its willingness to customize its products for the customer, and consumer's perceptions about the vendor's conduct regarding privacy and security are proposed to be antecedents of initial consumer trust in the online vendor in this thesis.

⁶⁶ An unpublished empirical study by Kaluscha et al. (2003) experienced very similar problems with perceived vendor reputation and size.

Based on Koufaris and Hampton-Sosa (2002b) and Pavlou and Chellappa (2001, p. 7) PERCEIVED PRIVACY CONTROL is defined as *the consumer's belief that the collection and subsequent access, use, and disclosure of consumer's personal information by the vendor meets the consumer's expectations* and similarly, PERCEIVED SECURITY CONTROL is defined as *the consumer's belief that the vendor's technical efforts to protect any of the consumer's private or financial information, electronically transferred to or stored by the vendor, from the unauthorized access and manipulation of inappropriate third-parties, meet the consumer's expectations*. Drawing from Koufaris and Hampton-Sosa's (2004, p. 382) definition of WILLINGNESS TO CUSTOMIZE, this construct is defined as *the consumer's belief regarding the readiness of the vendor to provide customized products to its consumers meeting the consumer's expectations*. Finally, grounded on Koufaris and Hampton-Sosa (2002b) the vendor's WILLINGNESS TO SHARE INFORMATION with its customers is defined as *the consumer's belief regarding the readiness of the vendor to provide clear and relevant information on its website meeting the consumer's expectations*. We propose these four constructs all to be antecedents of both, consumer's trusting beliefs about the vendor's competence, integrity and benevolence and consumer's intention to depend on the vendor. However, because these hypotheses will be tested in a quantitative survey using the example of an online retail store selling books, which are not customized, perceived willingness to customize is not included in the following, although we generally recognize it as a valid hypothesis for initial trust formation (see also section 6.1.3). It is therefore only hypothesized that:

H2: Perceived privacy control positively affects consumer's trusting beliefs in the vendor.

H3: Perceived privacy control positively affects consumer's intention to depend on the vendor.

H4: Perceived security control positively affects consumer's trusting beliefs in the vendor.

H5: Perceived security control positively affects consumer's trusting intention to depend on the vendor.

H6: Perceived willingness to share information positively affects consumer's trusting beliefs in the vendor.

H7: Perceived willingness to share information positively affects consumer's trusting intention to depend on the vendor.

The second category covers suspected antecedents of trust referring to beliefs about characteristics of the specific online vendor's website. The empirical findings of prior online trust research in chapter three (section 3.6.2.2.) suggest consumer's beliefs about the quality of the website (see McKnight et al., 2002, operationalized with items about the ease of navigation and information retrieval, contact opportunities, technical performance, etc.), the perceived ease of use of the website, the perceived usefulness of the website, and social presence on the website. Perceived ease of use (see section 3.3.3.) and elements of website quality seem strongly related to website usability (cf. research on website usability of Roy et al., 2001; Loiacono, Watson and Goodhue, 2002; Folmer and Bosch, 2004). Therefore, we summarize the facets of ease of use and usefulness under the broader construct PERCEIVED WEBSITE QUALITY which we define as *the consumer's belief regarding the vendor's website meeting the consumer's expectations of usability and usefulness*. SOCIAL PRESENCE, defined by Gefen and Straub (2003, p. 11) as *"the extent to which a medium allows a user to experience others as being present"*, is not merged with website quality but is included as a separate factor. It is therefore hypothesized that:

H8: Perceived quality of the vendor's website positively affects consumer's trusting beliefs in the vendor.

H9: Perceived quality of the vendor's website positively affects consumer's trusting intention to depend on the vendor.

H10: Perceived social presence on the website positively affects consumer's trusting beliefs in the vendor.

H11: Perceived social presence on the website positively affects consumer's trusting intention to depend on the vendor.

The third category covers suspected antecedents of trust referring to institutional-based beliefs (see section 3.6.2.3.). Especially structural assurances of the Internet (e.g. legal safeguards, protection from consumer organizations, etc.) and situational normality, which are both

institutional-based trust constructs (McKnight et al., 1998, 2001-2002; see section 2.7.2.1.), can be subsumed under this group. Two other beliefs, namely, perceived system reputation (as in Einwiller, 2002) and perceived risk of online shopping (as in Cheung and Lee, 2003), both referring to consumer's perceptions of the safety of the Internet as shopping environment, were also found to be antecedents of trust in prior trust research. Yet, due to the relative similarity of these latter two constructs they may be summarized with the common term "perceived risk of the Internet". However, McKnight et al. (2002) included such a construct in their research model (termed "perceived Web risk") and found it to affect consequences of trust and not interpersonal trust. Thus, following the findings of McKnight et al. (2002) we do not consider perceived risk of the Internet to be a direct antecedent of (interpersonal) consumer trust in the vendor but rather of consumer's perceived risk of transacting with the specific online vendor, which will be dealt with later on in section 4.3. of this chapter. Based upon McKnight et al. (2002, pp. 304-305) we define PERCEIVED STRUCTURAL ASSURANCE OF THE INTERNET as *the consumer's "belief that the web has protective legal .. [and] technological structures ... that assure that web business can be conducted in a safe and secure manner"*. PERCEIVED SITUATIONAL NORMALITY is defined as *the consumer's belief that the specific exchange situation is likely to be favorable because it is normal and similar to situations the consumer has already experienced in the past* (cf. McKnight et al., 1998; McKnight and Chervany, 2001-2002; Gefen et al., 2003). If the consumer perceives a situation as normal he will feel more comfortable in the situation because she or he is familiar with the setting of the situation and the involved roles and parties (McKnight et al., 1998). One may assume that these institutional-based beliefs influence consumer's trusting beliefs about an online vendor as well as consumer's trusting intention to depend on an online vendor. It is therefore hypothesized that:

H12: Perceived situational normality positively affects consumer's trusting beliefs in the vendor.

H13: Perceived situational normality positively affects consumer's trusting intention to depend on the vendor.

H14: Perceived structural assurance of the Internet positively affects consumer's trusting beliefs in the vendor.

H15: Perceived structural assurance of the Internet positively affects consumer's trusting intention to depend on the vendor.

The fourth category of interpersonal trust antecedents consists of characteristics of the consumer (see section 3.6.2.4.). It includes the individual's general disposition to trust, calculative beliefs about others and the consumer's satisfaction with past transactions on the Internet and/or with the given vendor. Due to our special research interest in *initial* trust toward an unfamiliar online vendor satisfaction with past transaction with the vendor is not an issue in our empirical study and therefore omitted. The other three constructs are supposed to positively predict consumer's trust in an online vendor. Disposition to trust is based on the works of Rotter (1967, 1971, 1980; see also section 2.7.1. for a detailed review) and should be especially important in a novel situation. In fact scholars tend to agree that this type of trust may be very important in the initial phase of an exchange relationship, characterized by higher levels of ambiguity and unstructuredness, and because the individual (trustor) is still lacking knowledge about the other party (cf. Rotter, 1971; Johnson-George and Swap, 1982; McKnight et al. 1998; Gefen, 2000 and Gefen et al., 2003). Following Rotter (1980), McKnight et al. (1998) and Gefen (2000) an individual's DISPOSITION TO TRUST is defined here as *a generalized belief held by the individual that people are generally trustworthy (faith in humanity) and that generally better outcomes will be reached by cooperating with people regardless if they really are reliable or not (trusting stance)*. This definition includes not only the individuals general disposition to trust others but also calculative-based beliefs because the individual's trusting stance, introduced by McKnight and his colleagues into online trust literature, was derived from (offline) calculative-based trust research streams (cf. McKnight et al., 1998). Thus, by adding disposition to trust to our research model calculative-based beliefs are included as well, thereby facilitating a more parsimonious research model. The construct SATISFACTION WITH PAST TRANSACTIONS ON THE INTERNET may be defined as *the consumer's evaluation of the proportion of perceived benefits of consumer's prior electronic commerce transactions versus consumer's expected benefits* (based on Kotler and Bliemel's definition of customer satisfaction, 1999, p. 53). Yet, just as the construct perceived willingness to customize, also satisfaction with past transactions on the Internet is omitted due to practical constraints as the sample used in the following will consist of both, online-shoppers and non-online shoppers with no prior e-commerce experience (see section 6.2. and 6.3.1.). It is therefore only hypothesized that:

H16: Disposition to trust positively affects consumer's trusting beliefs in the vendor.

H17: Disposition to trust positively affects consumer's trusting intention to depend on the vendor.

The construct of PERCEIVED RISK OF THE INTERNET, introduced above (see also section 3.6.2.3.), which is defined as *the extent to which the consumer believes that the Internet is a unsafe environment for conducting commercial transactions* (cf. McKnight et al., 2002; Einwiller, 2002; Cheung and Lee, 2003), is expected to positively affect the consumer's perception of the risk of a transaction with the specific online vendor. Hence, consumer perceiving the Internet as a risky place to conduct business are also expected to perceive a (potential) online transaction with an Internet vendor as more risky. It is therefore hypothesized that:

H18: Perceived risk of the Internet positively affects consumer's perceived risk of transacting with the online vendor.

In addition to the expected effects of the independent variables on the two dimensions of trust also some correlations between several of the independent variables are expected. As the vendor's website replaces what is offline done by sales clerks (Lohse and Spiller, 1998, 1999; Kaluscha and Grabner-Kräuter, 2003) it is very likely that consumers, who will perceive the online vendor to be willing to share all necessary information with the (potential) buyer, will also perceive the quality of the vendor's website more favorable. Especially since one key function of the vendor's website is to provide information to the users. We therefore hypothesize that:

H19: Willingness to share information is positively correlated with perceived website quality.

Since information about the online vendor's policies in regard to privacy issues and data protection may be considered to be among the most important cues consumers will be looking for in their assessment of an online vendor (cf. Cheskin Research and Studio Archetype/Sapient, 1999; Pavlou and Chellappa, 2001), we conclude that the perception that the vendor is willing to share all necessary information with the customer will be related with the users perception that the vendor strives for the protection of consumer data and follows

strict guidelines in regard to consumer privacy and sharing of consumer data. We therefore hypothesize that:

H20: Willingness to share information is positively correlated with perceived privacy control.

H21: Willingness to share information is positively correlated with perceived security control.

Similarly, perceived privacy and perceived security, which are hypothesized to be two conceptually distinct constructs, are thematically closely related to each other (e.g., Pavlou and Chellappa, 2001). We therefore assume that if a consumer perceives the online vendor as being keen on cryptographically securing the consumer's data the consumer will also tend to believe that the vendor will care about the protection of consumer's personal information and will not easily give away or sell this sensitive information to inappropriate third-parties. It is therefore hypothesized that:

H22: Perceived privacy control is positively correlated with perceived security control.

The situation is expected to be similar with consumers' perceptions about institutional-based structural assurances protecting consumer's rights on the Internet and consumers' perceptions about the general risks of conducting e-commerce transactions over the Internet. A negative correlation between these two variables seems obvious from our point of view (contrary to McKnight et al.'s, 2002, research model, which, interestingly, posited a positive correlation between these two construct). It is therefore hypothesized that:

H23: Structural assurance of the Internet is negatively correlated with perceived risk of the Internet.

Contrary, we assume that Internet users with a higher general disposition to trust will be more likely to perceive that they are protected in the online environment by structural assurances, while individuals with a lower disposition to trust may tend to be skeptical about structural assurances and may be generally more likely to perceive a higher Internet risk. It is therefore hypothesized that:

H24: Structural assurance of the Internet is positively correlated with disposition to trust.

H25: Perceived Internet risk is negatively correlated with disposition to trust.

Furthermore, we expect a positive relationship between consumer's perceived structural assurance of the Internet and consumer's perceived privacy as well as security control since users believing that legal and technical structures protect them in the online environment from fraudulent parties should be more likely to believe that the online vendor strives for consumers' privacy and security given these institutional deterrents. It is therefore hypothesized that:

H26: Structural assurance of the Internet is positively correlated with perceived privacy control.

H27: Structural assurance of the Internet is positively correlated with perceived security control

Since the consumer's perception of institutional-based situational normality is based upon cues derived from the "look and feel" and the content of the vendors website, we further assume that this construct should be related with the users perceptions of the willingness of the vendor to share information, perceived privacy and security control measure of the vendor, as well as perceived website quality. It is therefore hypothesized that:

H28: Perceived situational normality is positively correlated the perceived willingness of the online vendor to share information.

H29: Perceived situational normality is positively correlated with perceived privacy control.

H30: Perceived situational normality is positively correlated with perceived security control.

H31: Perceived situational normality is positively correlated with perceived website quality.

4.3. Dependent Variables

Regarding the consequences of both, trusting beliefs about the vendor and trusting intention to depend on the vendor, prior online trust literature (see section 3.6.3.) as well as findings within relationship marketing literature point to several research hypotheses. Potential consequences of interpersonal trust can be grouped into beliefs and attitudes (perceived risk of transacting with the vendor and/or its transaction system, attitude toward transacting with the vendor, satisfaction with the company, perceived value of the company, perceptions of the website's usefulness and ease of use, concerns about security on the web), behavioral intentions (intention to purchase/transact, intention to inquire/window shop, intention to return, intention to share personal information, intention to follow vendor's advice, consumer's loyalty intention) and actual behavior (purchase or adoption) (see sections 3.6.3.1., 3.6.3.2. and 3.6.3.3.).

Due to several constraints, such as the fact that overt behavior of consumer's can usually only be measured in a very controlled experimental laboratory setting (which on the other hand dramatically decreases the influence factors which can be measured due to limited resources and reduces external validity of the study), and the fact that some of the above mentioned behavioral intentions and attitudes are either not applicable or not essential in the case of initial trust formation in an online retail store, all overt behaviors, three behavioral intentions and three beliefs will be omitted from our research model. The three excluded behavioral intentions are the consumer's loyalty intention, the intention to follow the vendor's advice and the intention to share information with the vendor. The omitted beliefs are consumer's satisfaction with the company, and perceived value of the company and concerns about security on the web. While loyalty, satisfaction and perceived value are not an issue for initial trust formation because they usually come into play only after the fulfillment of consumer's first order, the intention to follow the vendor's advice, which was included in the study of McKnight et al. (2002) for the case of trust in a fictitious online legal advisor, i.e., a consulting service, will be excluded in the following because it is expected to be of marginal importance for the case of a transaction with an online retail store selling tangible products. Also the consumer's intention to share personal information will be omitted in the following because it is implicitly included in consumer's intention to purchase/transact, as practically no online purchase is possible without providing the vendor with some minimum amount of personal and financial information (e.g., e-mail and postal address, credit-card information or

bank account number, etc.). Hence, if a consumer intends to purchase something from the online vendor she or he will also at the same time intend to share information with the vendor. Thus, this construct is not explicitly included in our research model to keep it more parsimonious. The belief “concerns about security on the web”, is also omitted from the model although, Das et al. (2003) found it to be a consequence of trust, because firstly, Das et al. (2003) measured the individual’s general disposition to trust in their study, but only termed it “interpersonal trust”, which in this thesis is assumed to be an antecedent of interpersonal trust in the vendor (see section 2.7.5.), and secondly, the construct perceived risk of the Internet, which is a related construct, is hypothesized to play a role in the research model but as antecedent of the construct perceived risk of transaction. Furthermore, perceived ease of use and perceived usefulness of the website, found to be consequences of (interpersonal) consumer trust by Pavlou (2003), are not included as consequents of interpersonal trust but are incorporated into the antecedent perceived website quality. Although Pavlou’s (2003) findings suggest that consumer trust affects consumer’s perceptions of the vendor’s website we contrarily favor the approach of viewing website characteristics as direct antecedent of consumer trust in the vendor, such as in the majority of the reviewed studies in chapter three. The remaining behavioral intentions proposed to be consequences of trust, as suggested by prior empirical trust research, can be further reduced to two constructs for reasons of model-parsimony. In other words, consumer’s intention to return (in Koufaris and Hampton-Sosa, 2002a) and intention to inquire/window shop (in Gefen, 2000, 2002b) will be merged into one single construct termed “intention to return” because in all reviewed studies using these constructs the operationalization was very similar, asking respondents about their intention to re-visit the vendor’s website and/or to use it to search for information in the future. In this thesis INTENTION TO RETURN is defined as *the consumer’s willingness to use the vendor’s website in the future*. Following Pavlou (2003), INTENTION TO PURCHASE is defined as *the consumer’s willingness to engage in an exchange relationship with the online vendor including the ordering of the products (or services) and submission of personal information to the vendor over the Internet*. Based on the review of the prior online trust studies, we expect these two behavioral intentions to be positively influenced by consumer’s trust in the online retail store. It is therefore hypothesized that:

H32: Trusting beliefs in the vendor positively affect intended purchase.

H33: Trusting intention to depend on the vendor positively affects intended purchase.

H34: Trusting beliefs in the vendor positively affect intended return.

H35: Trusting intention to depend on the vendor positively affects intended return.

Similarly, the construct consumer's perceived risk of transacting with the specific online vendor (measured in Jarvenpaa et al., 1999, 2000; Gefen, 2002a; Teo and Liu, 2002; Lui and Jamieson, 2003) and consumer's attitude toward an online transaction with the vendor (in Jarvenpaa et al., 1999, 2000) are strongly related to each other when comparing their operationalization in the reviewed studies. Items of perceived risk are often phrased like (negative) reverse items of attitude, as illustrated in the following example, taken from Teo and Liu (2002) "Using the Internet to shop from this vendor is a good idea" (a measure of attitude), and "Overall, I would label the option of purchasing online from this e-commerce vendor as something negative." (a measure of perceived risk). Thus, instead of including both constructs in the research model, we will merge them again into one single trust-consequence factor labeled "PERCEIVED RISK OF TRANSACTING WITH THE VENDOR" which is, following Mayer et al. (1995), defined as *the consumer's belief about the likelihood of losses outside of considerations that involve the exchange relationship with the vendor*. It is hypothesized that:

H36: Trusting beliefs in the vendor negatively affect perceived risk of transacting with the vendor.

H37: Trusting intention to depend on the vendor negatively affects perceived risk of transacting with the vendor.

In addition to the expected causal effects of the two dimensions of interpersonal trust (i.e. the mediating variables in our research model) on the three dependent variables, structural relationships between the dependent variables can be expected, too. Consumer's perceiving a transaction with the vendor as risky should be less likely to intend to purchase from the vendor and to return to the website of the vendor. It is therefore hypothesized that:

H38: Perceived risk of transacting with the vendor negatively affects intended purchase.

H39: Perceived risk of transacting with the vendor negatively affects intended return.

Furthermore, it is very likely that consumers intending to purchase something from the vendor will be more likely to return to the vendor's website in the future. We therefore hypothesize that:

H40: Intended purchase positively affects intended return.

The resulting main research model based on hypotheses 1-40 is presented in figure 15 below.

4.4. Rival Model

In addition to the main research model, described in sections 4.1. to 4.3., which has the two interpersonal trust dimensions of trusting beliefs and trusting intention at its core, we also defined a rival model taking into account that several marketing scholars (e.g., Anderson and Narus, 1990; Crosby, Evans and Cowles, 1990) suggested that trust should be regarded as being one-dimensional and only consisting of trusting beliefs. Testing rival models is also suggested in the marketing literature for the case of theory construction (e.g., Anderson and Gerbing, 1988). The resulting rival model is identical with the original research model with the only exception that (interpersonal) consumer trust in the online vendor consists only of trusting beliefs in the online vendor's competence, integrity and benevolence, while the construct trusting intention to depend and all hypothesized paths related to it are omitted from the resulting rival research model (see figure 16 below).

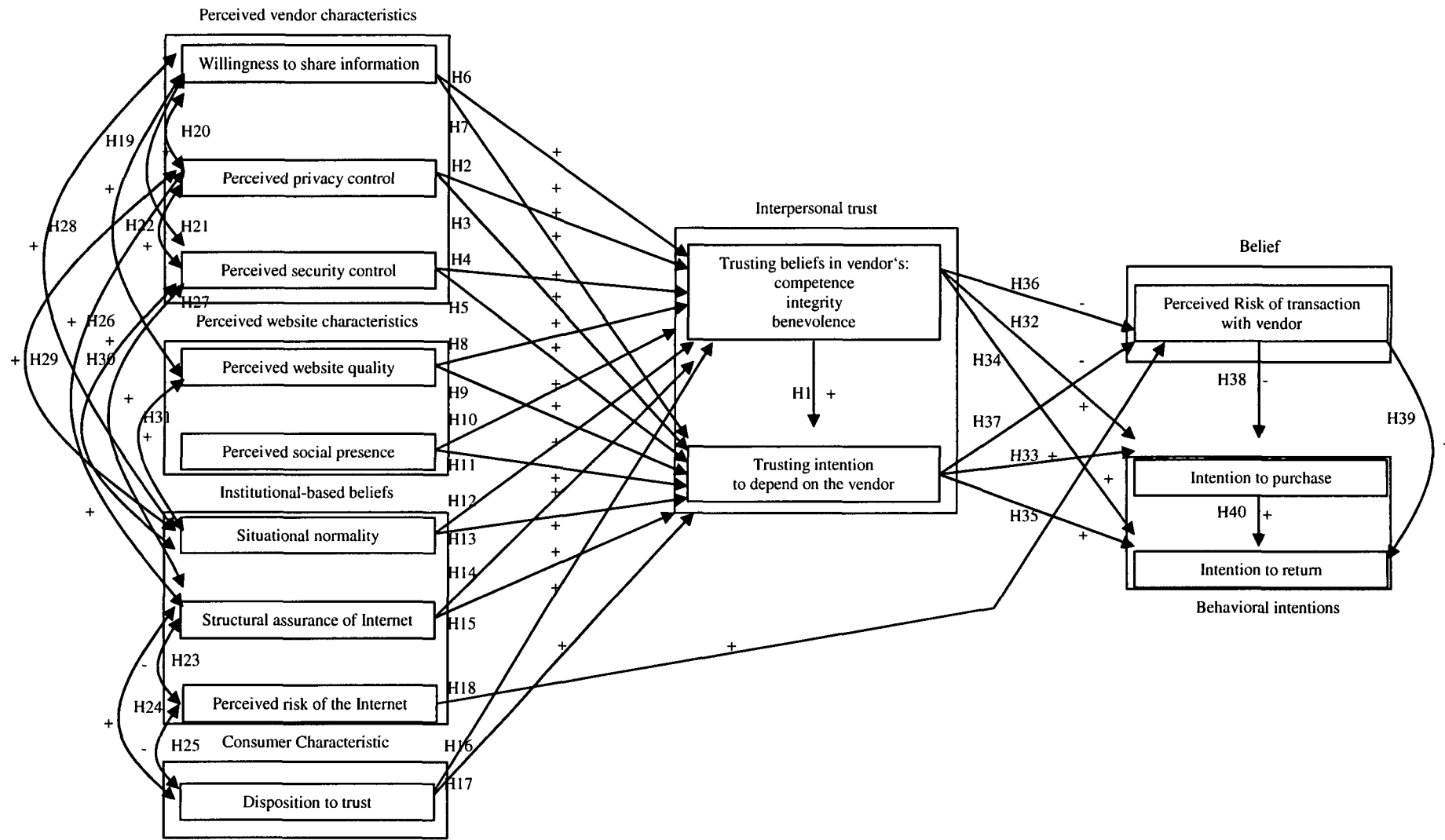


Figure 15. The Preliminary Research Model.

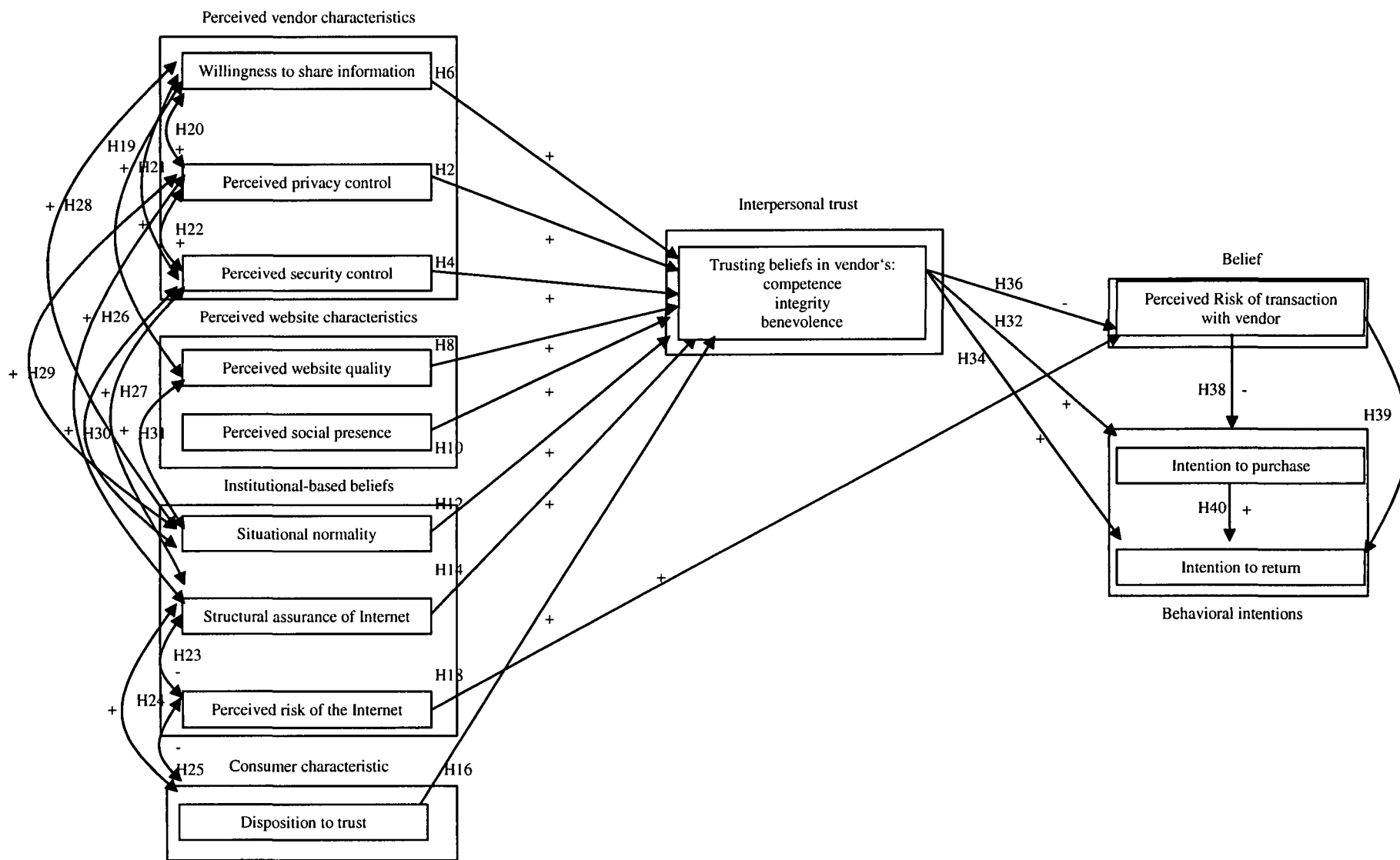


Figure 16. The Preliminary Rival Model.

5. Qualitative Study - Focus Groups

In chapter five the findings of four focus group discussions will be presented and discussed. These findings will be used to evaluate and potentially extend the (preliminary) a priori research hypotheses and research models formulated in chapter four. The major aim of this approach, contrary to the vast majority of prior studies on online trust (see section 3.7.3.), is to use also new qualitative empirical data gathered directly from Austrian consumers in addition to just reviewing existing theoretical concepts and published empirical results as a basis for new research efforts (Kaluscha, 2003).

5.1. Introduction to Focus Group Research

Focus groups, as a qualitative research method in social science, originated in the 1940s, in the USA, at Columbia University's Bureau of Applied Social Research, led by Paul Lazarsfeld. Lazarsfeld and his colleagues, Robert Merton, Alberta Curtis, Majorie Fiske, Frank Stanton and Patricia Kendall, used this method to investigate the effectiveness of radio propaganda campaigns for the US-government.⁶⁷ In the course of this research the scholars used group interviews of approximately twelve interviewees and developed a relatively standardized procedure for this method (cf. Littig and Wallace, 1997; Morgan, 1997; Dürrenberger and Behringer, 1999; Bloor, Frankland, Thomas and Robson, 2001). However, this research method failed to attract the interest of other researchers and almost vanished for more than two decades until it was adopted by commercial market research in the late 1960s and early 1970s (Dürrenberger and Behringer, 1999; Bloor et al., 2001) followed by the field of political advisory during the 1980s (Dürrenberger and Behringer, 1999). At about the same time focus groups started to be re-introduced in academic research by scholars from the fields of health care, environmental and communications research (Littig and Wallace, 1997; Dürrenberger and Behringer, 1999). Currently focus group research is conducted in many fields of academic research and scholars recently began using this qualitative method in the field of research on e-commerce and electronic networks (e.g. in Wolfenbarger and Gilly, 2001; Sultan, Urban, Shankar and Bart, 2002; Lim, 2003; Oxendine, Borgida, Sullivan and Jackson, 2003).

⁶⁷ Some sources (e.g., Morgan, 1997) even suggest that focus group techniques were already used in social sciences in the 1920s.

Dürrenberger and Behringer characterized the focus group as a moderated group discussion focused at a specific content, whereby the research topic is introduced with the help of a prepared stimulus and discussed along a semi-standardized moderator guide (cf. Dürrenberger and Behringer, 1999, p. 5 and p. 12). Morgan more broadly defined focus groups “as a research technique that collects data through group interaction on a topic determined by the researcher. In essence, it is the researcher’s interest that provides the focus, whereas the data themselves come from the group interaction.” (Morgan, 1997, p. 6). Typically, the aim of a focus group discussion is not to reach a consensus on a topic among the participants but to gather a wide range of different opinions (Littig and Wallace, 1997).

In academic studies focus groups can be incorporated in several ways. Firstly, they can be used as single, principal source of data (i.e., as self-contained method). Secondly, they can be employed as supplementary source of data, extending other, primary sources of data, especially quantitative surveys, for example in form of pre-pilot studies, for interpretative reasons based on the survey results, or for communicating quantitative findings to subjects. Thirdly, they may be used in multi-method designs in which focus groups and other quantitative or qualitative research methods are applied but all methods are considered equally important by the researcher. This latter form is also referred to as triangulation, a design in which the results of the different employed methods are compared with each other and findings are derived from this comparison (cf. Morgan, 1997; Bloor et al., 2001; Mayring, 2001).

The size of a single focus group may range from as few as three to as many as 14 participants (Bloor et al., 2001; some sources deviate from that, e.g., a range of three to twelve participants in Dürrenberger and Behringer, 1999, six to twelve in Littig and Wallace, 1997, or six to eight participants in Krueger and Casey, 2000). While small groups usually provide the participants with more opportunities to express their thoughts and experiences, there is a potential risk for the researcher of getting only a very limited set of ideas and opinions. This problem may be resolved by using larger groups, yet, in this case there is a potential danger of group fragmentation and the tendency that more restrained participants will be suppressed by more forceful participants and thus, become frustrated and silent. However, the optimal size of the focus group needs to be determined by the researcher based on the research interests, the complexity of the given topic, etc. (Bloor et al., 2001).

Grounded on prior focus group research reported in the literature Morgan (1997) proposed the rule of thumb of conducting three to five focus groups due to the finding that more focus groups usually do not contribute to significantly more insights. Nevertheless, he suggested that the final decision should be based upon the researcher's perception of having reached a point of "theoretical saturation", i.e., with no additional insights to collect, usually determined by such factors as the level of group heterogeneity or the degree of standardization of the moderator guide. Similarly, Krueger and Casey (2000) suggested to conduct at least three focus groups and Dürrenberger and Behringer (1999) stated that six focus groups suffice in most cases. However, the vast majority of scholars agree that conducting just one focus group poses severe problems of validity as the outcomes of the discussion may be distorted by the composition of the group or random incidents (e.g., Morgan, 1997; Dürrenberger and Behringer, 1999). While in most focus group studies the participants for each group are newly recruited by the researcher, it is noteworthy to mention that there exists also another variant of focus group research, called "serial focus groups", which might be necessary for some highly complex research situations. In the case of serial focus groups the same set of participants meets several times with the researcher to discuss the topic (Dürrenberger and Behringer, 1999). Another facet of group composition which the researcher has to clarify is the question if the focus group should consist of strangers or if it might be more beneficial to use pre-existing groups of participants (e.g., co-workers or families). While strangers typically will be less cohesive, the researcher has to be aware that pre-existing groups also include pre-existing social settings which may cause distortions to the findings. Hence, again, decisions about the need for serial focus groups and optimal group composition are dependent on the given research question and the researcher's interests (cf. Morgan, 1997; Dürrenberger and Behringer, 1999; Bloor et al., 2001).

5.2. Research Interests

In this thesis the aim of the focus group study, reported in the following, was to provide additional, qualitative material gathered directly from Austrian consumers, to detect potential "blind spots", possibly overlooked by prior e-commerce trust research. In other words, this study was of exploratory nature, predominantly trying to generate additional research hypotheses. Hence, this qualitative focus group study is a pre-pilot study used as supplementary source of data, extending the principal method of this thesis, our quantitative

survey. According to Morgan (1997), mixing focus groups with survey research can provide a number of benefits. He stated that in this setting focus groups may help the researcher threefold: Firstly, their findings may help the scholar to include all relevant domains which need to be measured in the quantitative survey. This may reduce potential parameter specification errors in multivariate analyses (e.g., in confirmatory factor analyses and structural equation modeling) caused by omitting relevant variables. Secondly, it may also help to identify the relevant sub-dimensions forming these domains, and thirdly, it may enable the researcher to use participant wordings to create survey items which may potentially result in a more valid and reliable measurement instrument. This latter advantage may be even greater as Morgan brings up the argument of the constant increase of re-using existing survey items from published studies in many fields of research, although many of these measures often have not been validated aside from the original study (cf. Morgan, 1997, pp. 25-26) - a habit very common in online trust research as well. In order to realize the potential benefits proposed by Morgan (1997), especially the aspect of identification of all relevant domains and dimensions, the main research question for our focus group study was formulated quite broadly:

1) What are the major influence factors for consumers in their decision to engage in an online transaction with an (unfamiliar) online vendor?

In the course of this main research question it was also of great interest if trust would explicitly or implicitly emerge as one of the influence factors without introducing the word “trust” it by the researcher at the beginning of each focus groups. Furthermore, two minor, more specific research questions were formed:

2) Are consumers actually willing to purchase something from an unfamiliar online vendor?

3) Which factors influence consumer’s formation of trust in a given online vendor?

While the first of these latter two research questions aimed at investigating if small, unknown or lesser-known online vendors generally have a chance of attracting consumers in a market dominated by such online giants as for example Amazon or Dell, the second research question tried to gather additional information on the concrete factors influencing consumers’ perceptions of trustworthiness of an online vendor.

5.3. Methodology

In the course of planning this qualitative focus group study we decided to conduct four focus groups, each with a new set of participants, under consideration of recommendations made in focus group literature, as well as of the specific nature of our research topic and the given resources. The participants were recruited by sending e-mails to students as well as to faculty and administrative staff of the University of Klagenfurt, asking the addressees to participate as volunteers in a “group discussion” or to ask their friends and relatives to participate in the discussion. In the e-mail the detailed purpose of the study was not revealed and only communicated as “the investigation of consumer opinions on shopping activities on the Internet”. It was clearly stated that both, adopters of online shopping as well as non-adopters would be welcome to join and that the researcher explicitly aimed at getting a broad spectrum of participants regarding demographic characteristics. In response to the e-mail 27 people contacted the author. Several of them were not related to the university but were informed about the group discussion by the original addressees of the e-mail. All inquiring persons were briefly interviewed about their Internet usage and about prior experiences with online shopping, to be able to form suitable groups. Finally, 24 people agreed to participate and were split into four focus groups, each originally consisting of six participants. Due to an unforeseeable time problem of one participant we had to re-group the original composition slightly, resulting in two groups consisting of six participants, one group of five and one group of seven participants. This relatively small number of participants per group was willingly chosen because it was intended to provide the participants with enough opportunities to talk during the discussion to enhance the depth of the material, which would have been reduced with larger groups. Furthermore, there was no need for serial focus groups as the research topic was not too complex and did not require providing participants with certain expert knowledge through prior group meetings (cf. Dürrenberger and Behringer, 1999). Regarding the group characteristics, we tried to form rather homogenous groups, as suggested in the relevant literature, in order to obtain a more constructive level of discussion (e.g. Dürrenberger and Behringer, 1999). Subsequently, two focus groups consisted solely of rather experienced online shoppers, one group was mixed and composed of rather inexperienced online shoppers and non-online shoppers, while the fourth group consisted of non-online shoppers only (for an overview of the demographic variables of the 24 participants see table 3).

Demographic variable (n=24)	Frequency	Percent
<i>Gender</i>		
Female	14	58.3
Male	10	41.7
<i>Age</i>		
20-29	12	50.0
30-39	4	16.7
40-49	2	8.3
50-59	4	16.7
> 60	2	8.3
<i>Education</i>		
Apprenticeship/technical college	4	16.7
Graduate high school	5	20.8
Graduate university/teachers' college	15	62.5
<i>Occupation</i>		
Employee (office worker/faculty member)	12	50.0
Entrepreneur	1	4.2
Civil servant	2	8.3
Homemaker	2	8.3
Student	4	16.7
Pensioner	3	12.5
<i>Internet Experience</i>		
< 2 years	0	0.0
2 to 5 years	13	54.2
> 5 years	11	45.8
<i>Online Shopping Experience</i>		
None	8	33.3
1 to 2 purchases	3	12.5
3 to 10 purchases	5	20.8
> 10 purchases	8	33.3

Table 3. Demographics of Focus Group Participants.

The focus group discussions were all conducted at the University of Klagenfurt during autumn 2003. As the focus group literature (e.g., Krueger and Casey, 2000) emphasizes the importance of a pleasant atmosphere, attention was paid to this factor when selecting and preparing a seminar room. Furthermore, drinks and snacks were provided for the participants to contribute to a positive atmosphere. Although it was originally planned to set out explicit rules of behavior for the discussion at the beginning of each focus group (e.g., as suggested in Dürrenberger and Behringer, 1999) this plan was not carried out in order not to intimidate the participants. Positive experiences made during all four focus group confirmed that a lively but polite discussion was possible without such “rules of conduct”. All focus group discussions were moderated by the author himself, using a semi-standardized moderator guide developed beforehand based on the research questions and slightly refined after presenting it to two faculty members and discussing potential shortcomings. Slight adaptations were also made to the moderator guide, which was originally developed for groups consisting of online shoppers, to fit the different backgrounds of the participants in the mixed and the non-shopper focus groups.

The focus groups were filmed with a digital camcorder using an external microphone in order to record not only the conversation but also non-verbal gestures. The recording facilities were prepared and looked after by a faculty member, who was also present during all four focus groups and took additional notes on the discussion. This approach was selected to insure that the moderator could focus on the participants and to have an emergency backup protocol in case of potential malfunction of the recording facilities.

Furthermore, as common stimulus for the participants, three online vendors were pre-selected by the author (www.buch.de, a German online-bookstore similar to Amazon, www.ieq.de, a German online electrical shop selling such products as microwaves, washing machines or freezers, and www.nre.at, a small Austrian brick-and-click vendor selling computer hardware). These three online vendors were chosen because, firstly, they were assumed to be not well-known (indeed the three example vendors were unfamiliar for all 24 participants), secondly, they provided an interesting mix of product categories, thirdly, their websites differed significantly from each other in terms of on-site information, design and functionality (see figures 17, 18, 19 for screenshots of the homepages of the three online stores).⁶⁸ During


⁶⁸ Due to technical problems the original screenshots were destroyed. The three screenshots presented in figures 17, 18 and 19, were taken in spring 2004. Note that slight modifications were made to all three homepages since autumn 2003, although their general appearance remained unchanged.

all focus groups the websites of these three vendors were accessed by the moderator via the Internet and presented on a screen using a beamer.

Figure 17. Homepage of www.buch.de

Figure 18. Homepage of www.ieq.de


NRE Computerhandel GmbH
Zentrale/Filiale Purkersdorf
Tullnerbuchstr. 52 - 56, 1011 Purkersdorf
Öffnungszeiten:
Montag - Freitag: 10 bis 19 Uhr
ATU: +7031803, FN: 178619a




NRE Computerhandel GmbH
Filiale Wien 13
St. Veitgasse 67, 1130 Wien
Öffnungszeiten:
Montag - Freitag: 10 bis 19 Uhr
Samstag: 10 bis 13 Uhr

Einheitliche Telefon- u. Faxnummer für beide Standorte:

Telefon: +43-2231/67 167 - 0
Fax: +43-2231/67 167 - 0W 700
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Top-Preise

CoolerMaster ATC-600-GX1
Aluminium Desktop Gehäuse ohne Netzteil für insgesamt 4 Laufwerke mit 2*5.25"+2*3,5" Einschüben. 3 Lüfter mit 60mm (2*seitlich, 1*hinten) inkl. umfangreichem Montage Zubehör. Front in Alu-schwarz (B*H*T): 426*145*476mm. Gewicht: 5 kg

Top-Produkte

SAMSUNG SM-957P 19" SyncMaster	Samsung CDR SC-152 (Schwarz)
SyncMaster 957P; Bildschirmdiagonale 19 Zoll (48 cm); Sichtbare Bildschirmdiagonale 18 Zoll (45,7 cm); Maximale Bildfläche (BxH) 366 x 275 mm; Dot Pitch Horizontal: 0,22 mm; Ablenkung: 90 °; Entspiegelung: Multi-Layer-Coating; Horizontale Ablenkfrequenz: 30-96 kHz; Bildwiederholfrequenz 50-160 Hz; Videobandbreite: 250 MHz; Maximal Auflösungen 1920 x 1440	52fachSpeed CD-Rom Laufwerk mit Datenübertragungsrate max. 7 800 KB/s. Mittlere Zugriffszeit 80 ms. Unterstützt Windows 95/98/NT & Linux. Multi Read Automatic-Ball-Balancing-System.

	Produktinfo		Produktinfo
Art.Nr. 16415		Art.Nr. 12722	Art.Nr. 15822

- Öffnungszeiten
- Info
- Angebote
- Preisliste
- Bestellung
- Systeme
- Service
- B2B
- Anreise
- Reparaturen
- Zustellung
- Über uns
- AGB
- Startseite

Figure 19. Homepage of www.nre.at

After their arrival, each participant filled out a short demographic questionnaire including questions about Internet usage and online shopping experience. Then the moderator shortly explained the general topic of the focus group (not revealing the special interest in consumers' online trust), pointed out that the statements of all respondents were equally important and that it was not the aim to reach a consensus in the discussion. Afterwards, each focus group started with an easy introductory session, introducing each other and talking about past experiences with the Internet and, - in the three groups including online shoppers - any prior experiences with online shopping. After this introduction the participants were presented with the stimulus (i.e., the three example vendors).⁶⁹ To avoid bias the presentation of the three vendors was standardized as much as possible. The moderator always slowly presented the homepage of each vendor to the participants and verbally summarized the range of offered products, additionally, the company information ("About us" and "Contact" sections), any terms of business and policies were presented and the purchase process of an example product was simulated as real as possible without actually purchasing something. The questions included in the moderator guide basically addressed following topics: prior experiences of the

⁶⁹ In focus group number one, - consisting of experienced online shoppers, only www.buch.de and www.nre.at were presented due to the late arrival of three participants and the reduced amount of time left for the discussion.

participants with the Internet and with online shopping including their first ever online purchase (in groups consisting of online shoppers), if they had ever abandoned an online “shopping cart” in the past (i.e., terminated a purchase) and why, if they would consider shopping at one of the three online vendors presented in the demo and for which reasons, which features the participants would generally pay attention to when considering a purchase at an unfamiliar online vendor, which factors contribute to perceptions of trustworthiness of an online vendor, what participants generally felt about the Internet as transaction medium, participants’ plans about possible future transactions, and overall the most important influence factors when considering to (hypothetically) engage in an online transaction with an online vendor. Throughout each focus group discussion the moderator tried to act as unobtrusive as possible in order to facilitate the discussion among the participants and to not use any suggestive wording (this kind of moderator behavior is suggested by Littig and Wallace, 1997, for exploratory focus groups aiming at the generation of new hypotheses). The terms “trust” or “trustworthiness” were avoided by the moderator up to the last third of each focus group, unless participants used them on their own. Only in the last third of the discussion the moderator started to explicitly ask for factors influencing perceptions of vendor trustworthiness. The focus group discussions lasted between 90 and 120 minutes. In the end of each session the moderator thanked all participants for their help and provided them with a gratification of EUR 10.-.

5.4. Data Analysis

The video data gathered in the course of the four focus group discussions was used to conduct a full transcription of the material. The transcript was written by the author himself. All statements of participants relevant for the research questions were fully transcribed. However, “small talk” during the introductory session or after the final question was excluded from the transcript, as well as any discussions deviating too far from the original questions and the relevant topics. Also filler words, not providing any information, were omitted from the transcript while slang expressions were translated into standard German. The moderator and each participant were assigned a character in the transcript in order to be able to assign each statement to the right person (e.g., “M:” for moderator). In case of words not understandable in the videos a remark was inserted in the text at the position of the incomprehensible word(s). Due to the availability of video data it was possible to include non-verbal gestures in the

transcript, especially nodding in approval or shaking of heads. In addition, the demographic questionnaire was analyzed calculating frequencies (see table 3). The final transcript of all four focus groups was then analyzed with qualitative content analyses (a thorough analytical technique for the analysis of qualitative data) following Mayring (2003)⁷⁰, focusing on answering the three research questions. More specific, the standard procedures of qualitative content analysis were used to summarize the material and partly also to form inductive categories (i.e., categories directly derived from the material without intentionally relating them to existing theoretical concepts) (cf. Mayring, 2003, pp. 42-99). The coding unit, which is the smallest unit of material to be analyzed by the researcher, was specified as each complete statement of a person. The context unit, which is the largest unit of material to be analyzed, was defined as the complete transcript of the specific focus group the person participated in. As selection criterion (i.e., the decision regarding which material is used for the formation of inductive categories) the relevance for the given research question was employed. The procedures of qualitative content analysis for the formation of inductive categories include iterative analyses of the transcript using paraphrases, generalizations, and abstractions, whereby the level of abstraction is increased gradually up to a certain point predefined by the researcher (Mayring, 2003). Despite the abstractions the researcher should try to stick to the original statements as much as possible and to additionally form so-called “anchor examples” for each category, which are original statements of participants illustrating a given category very well. Furthermore, Mayring (2003) suggested that after 10 to 50 percent of the material are analyzed, the formed system of categories should be re-evaluated in regard to the given research question and refined if necessary. In case of refinements the complete material needs to be analyzed again using the new, updated system of categories. If no refinement is needed then only additional categories, not covered within the existing system, should be added (Mayring, 2003).

Aside from summarizing techniques also explication techniques (i.e.; interpretations of unclear text modules, Mayring, 2003), were used in the content analyses in this thesis. Especially grammatical analyses with a dictionary of standard German as well as narrow and wide context analyses (narrow context analysis takes only the surrounding text or similar statements in the context unit into account while wide context analysis includes predefined

⁷⁰ In his book on qualitative content analysis Mayring (2003) urged for inter-subjective understandability and verifiability of qualitative analyses and findings. He especially emphasized a rigorous, systematic and rule-based analysis and wants (qualitative) researchers to sufficiently document their work for others.

external material, here, the previous chapters of the thesis, to interpret unclear statements) (Mayring, 2003) (for a more detailed description of the qualitative content analysis see Mayring, 2003).

5.5. Results

In essence, the categories resulting from the first research question – on factors influencing the decision to purchase something from an online vendor - were summarized and abstracted four times, resulting in a set of 40 distinct inductively formed categories. In addition, the frequency of mentioning the given category per person, throughout the focus groups was calculated (see table 4). Special care was taken in translating the anchor examples from German into English to ensure that the participants' wordings remained as authentic and unbiased as possible (Esposito, 2001).

Nr.	Category	Description	Frequency	Anchor example(s)
1	Product category	the characteristics of the product in question, e.g., the complexity or the value of the product, suitability for online ordering	18	<p><i>It is very dependent on the type of product [at what type of online shop I would purchase].</i></p> <p><i>I would never purchase something on the Internet which I wouldn't know all about, for example technical equipment.</i></p> <p><i>I have no clue about PC-hardware. Therefore I would not purchase it online.</i></p>
2	Payment options	available payment options provided by the online vendor	16	<p><i>I always pay [online] with paying-in slip or via bank transfer. I would never use my credit card.</i></p> <p><i>I would never disclose the number of my bank account or similar information on the Internet. I attach great importance to this. I use paying-in slips.</i></p> <p><i>In my case the payment options were the reason [for abandoning the online shopping cart]. When I saw "credit card only" I was gone.</i></p>
3	Costs of delivery	costs of delivery to bear by the buyer, including possible fees, expenses, handling charges, etc.	15	<p><i>I terminated the purchase because I noticed that the cost of delivery were unfavorable.</i></p> <p><i>Facing excessive delivery costs I would reconsider a purchase at the online shop, too.</i></p> <p><i>[...and I pay attention to] the terms of delivery, any expenses, costs of delivery ... handling charges.</i></p>
4	Delivery period	the length of the delivery period	1	<p><i>If I want to purchase e.g. books at an online shop and I would have to wait one week until it arrives, then I probably would go somewhere else.</i></p>
5	Price	the purchase price and savings in regard to other alternatives	14	<p><i>If the price is good [I would purchase].</i></p> <p><i>The comparatively cheapest vendor "wins".</i></p> <p><i>If it would be much cheaper, I would purchase it online.</i></p>

Table 4. Inductive Categories Derived From the Focus Groups.

Nr.	Category	Description	Frequency	Anchor example(s)
6	Recommendations and word-of-mouth of friends and acquaintances	Information from friends and acquaintances about their opinions and/or experiences in regard to a certain online vendor or product	14	<p><i>Before [I purchase], I ask friends if they know the company.</i></p> <p><i>Usually I go onto the Internet [to purchase something] because of recommendations of a friend.</i></p> <p><i>I would purchase there if friends would have told me that it is safe there.</i></p> <p><i>...but positive experiences of friends convinced us. Positive word-of-mouth is definitely the best!</i></p>
7	Site usability	the perceived usability, clarity, structure of the website including the amount of information presented on the screen	15	<p><i>The website has to be user friendly.</i></p> <p><i>There is too much text [on the website]. It is not possible to “window shop” or to compare products. The site structure is confusing. I wouldn’t shop here.</i></p> <p><i>The website was totally confusing... I would never shop there!</i></p> <p><i>Compared to this site Dell.com is much more structured and clearly arranged, including pictures... I would never shop at this site!</i></p> <p><i>I don’t need dozens of pictures everywhere. I like clear and simple product categories.</i></p> <p><i>If the website is confusing and I can’t find my way through it, I leave the site.</i></p>
8	Registering and purchasing process	the perceived simplicity of the ordering process (registering and purchasing)	9	<p><i>I don’t want to click around 1000 times or have a complex registering procedure.</i></p> <p><i>[...I would purchase from the vendor] unless the ordering process is too complicated or too slow, e.g., if you have to apply for a password first.</i></p> <p><i>[... I would purchase from the vendor] but not if the registering process takes me 2 hours or they would like information from me which is not necessary at this point.</i></p>

Table 4. Inductive Categories Derived From the Focus Groups (continued).

Nr.	Category	Description	Frequency	Anchor example(s)
9	On-site search engine	the availability of an on-site search engine	5	<p><i>I want to have a search engine on the website. This is an important customer service.</i></p> <p><i>Is there an on-site search engine? I want to find things quick! ... This is one of the aspects I am paying attention to.</i></p>
10	Frequently Asked Questions (FAQs)	the availability of FAQs on the website	1	<p><i>FAQs are very important for me! If I have problems navigating the website or if I do not know any further. Because maybe they can solve my problem.</i></p>
11	Appealing site design	the design the overall website, including a catchy homepage with a “gimmick”	12	<p><i>The site looks completely “homemade”, even I could do that. The colors are bad. Pink font on green background!</i></p> <p><i>The website appeals to me. It is very well designed.</i></p> <p><i>The usage of colors at IEQ.de is a catastrophe. That doesn't look elegant! For me, it looks like a mail-order catalogue. ... I personally like NRE.at the most. It had the prettiest outfit. The colors were chosen very well and the site was clear and well structured.</i></p> <p><i>The website has to be appealing! There has to be something on it, which catches my interest and invites me to click on it. The site has to “call me on”. There has to be some kind of “gimmick”!</i></p>
12	Professional and serious site design	a professional, serious design of the overall website	13	<p><i>Blinking banners and blinking and animated fonts on the website, well this doesn't look very serious.</i></p> <p><i>All this blinking on the website, I doesn't like that at all. It creates the impression of being a junk shop.</i></p> <p><i>If the site is seriously designed, then it is much easier to fall for it.</i></p>

Table 4. Inductive Categories Derived From the Focus Groups (continued).

Nr.	Category	Description	Frequency	Anchor example(s)
13	Company location (offline)	the offline location of the company (country, state, city)	12	<p><i>My first online purchase was with Lion.cc, because at that time everything was still unsafe on the Internet, and I was skeptical and it was very important for me that it was an Austrian company. To get a domestic bank account [for the money transfer], and a legal domicile in Austria, and to be able to call them in case of troubles. I would never purchase from shops located e.g. in Brazil or Zaire. The company location is very important for me! Having the security of German-speaking countries ... or at least within the European Union.</i></p> <p><i>[If the company is located in Austria.] Yes, this increases my trust.</i></p>
14	Company location (online)	the online location of the company (domain name, web-space)	3	<p><i>If the online shop uses a free, sponsored web-space with no real domain name of its own... that is dubious!</i></p> <p><i>A company has to be able to afford an own domain on the Internet, without pop-up ads from any sponsor!</i></p>
15	Data Security (Encryption/Server)	employed data encryption measures (data security) and the security of the server used by the online vendor	10	<p><i>I look at it from another angle. If the vendor isn't even using SSL-encryption, which is really easy to incorporate, then the particular vendor is not thinking about security issues at all.</i></p> <p><i>Sometimes I check which server the shop is using. I don't like to use a Microsoft server, they are not secure! If they use a Microsoft server I abandon the shop.</i></p> <p><i>...at "no-name vendors", remarks about security measures are important and are simply an evidence about the trustworthiness of the vendor and its products.</i></p> <p><i>... and if the technical security, the encryption, is okay, then why not [buy there]!</i></p>
16	Privacy	the security of personal information	3	<p><i>What worries me much more is how much information we are leaving on the Internet, for example when we are shopping. ... But nevertheless I provide my personal information on the Internet, though carefully.</i></p> <p><i>Personal information and its safety are more relevant [than the number of the credit card, which is also unsafe during offline usage].</i></p>

Table 4. Inductive Categories Derived From the Focus Groups (continued).

Nr.	Category	Description	Frequency	Anchor example(s)
17	Product information	the amount of product descriptions provided by the vendor	12	<p>[It is very important] <i>that the products are well described and depicted, for example the colors in case of clothes</i></p> <p><i>I want to have a detailed [product] description. I want to know exactly what I buy.</i></p>
18	Product Need	the individual's need and desire for the given product	8	<p><i>I am rather skeptical. It depends on the product. If I need it urgently, then maybe [I would purchase at an unfamiliar vendor].</i></p> <p><i>Decisive for my decision to purchase is how urgent I need the product and if it is only available on the Internet.</i></p> <p><i>For me it is crucial if I need what the site is offering!</i></p>
19	Standard of comparison/ standard situation	the known examples and standards to which the individual mentally compares an unfamiliar website	8	<p><i>At an unfamiliar website one tries to compare the site with [other online] vendors one already knows.</i></p> <p><i>The standard situation simply has to be right.</i></p> <p><i>[It is important] if the site structure is familiar. If it is familiar, then one finds one's way around easier... It simply appeals more if it [the site structure] is familiar.</i></p>
20	Familiarity of vendor	the degree of familiarity of the vendor, i.e., Is it a well known vendor?	8	<p><i>[I ask myself] Do I know the name? Have I ever heard about this shop before, e.g. from acquaintances?</i></p> <p><i>For me it is a very important criterion if I know the site or the company. For example, is this company also operating offline, in the real world?</i></p> <p><i>For me it is important if a well known institution is "behind" the online vendor... one I know and where I even might know in which street they are located [offline]. And if no institution is "behind" the vendor, then the question is: Has anyone heard about this shop before? For example friends.</i></p>

Table 4. Inductive Categories Derived From the Focus Groups (continued).

Nr.	Category	Description	Frequency	Anchor example(s)
21	Vendor size	the size of the vendor	3	<p><i>It should be a big company, unless it is a private individual selling some minor goods [at eBay].</i></p> <p><i>At IEQ.de I developed more trust because they offered a wide range of products. They had a big selection and I did not get the impression that it is a small company.</i></p>
22	Vendor reputation	the reputation of the vendor and its brand	3	<p>[Regarding the credibility of information provided on the site] <i>A company like Amazon.com, a well established brand, they just have a huge comparative advantage compared to other vendors.</i></p> <p><i>I don't have a problem with a prestigious company offering its products on the Internet, but with no-name companies...</i></p>
23	Contact information	contact information provided on the website (e.g., postal address, phone numbers, e-mail addresses)	6	<p><i>For me it's very important, that a phone number is provided, so that I can talk to people. Or at least an e-mail address for emergencies.</i></p> <p><i>The postal address is important, to determine where the company is located.</i></p> <p>[At NRE.at] <i>I liked a lot that the contact information was permanently visible. This increased my trust...</i></p>
24	Company description	the description of the company, its products and procedures, e.g., in an "About us" section	5	<p><i>For me it's most important to get a clear description of the company and its products. And how they describe it. I care a lot about that. This information has to be clear and understandable for me!</i></p> <p><i>The company information, the "About us", was very good at IEQ.de. They presented themselves very well and in detail. I really liked that. You can now even check if this information is true.</i></p>

Table 4. Inductive Categories Derived From the Focus Groups (continued).

Nr.	Category	Description	Frequency	Anchor example(s)
25	Branded products	Branded products of well-known manufacturers	6	<p><i>The products offered there [at IEQ.de] are mostly from manufacturers which one knows, for example Philips or Siemens. So there is nothing unfamiliar.</i></p> <p><i>... but so far I have only purchased brand products ... [on the Internet]</i></p> <p><i>For example a Siemens refrigerator, in that case I could go offline and compare the price, etc. offline in a store.</i></p> <p><i>I could imagine purchasing Levi's jeans over the Internet because they are much cheaper there... or t-shirts from US-vendors... like Hilfiger.</i></p>
26	User testimonials	published user testimonials and ratings of products on the website	5	<p><i>[at IEQ.de and NRE.at] There is no joy, no fun factor. The sites are boring. I want to see pictures and user testimonials and user ratings. This is interesting and exciting, this creates a dynamic of its own.</i></p> <p><i>What I generally like about online bookshops are user testimonials...</i></p>
27	Existing account at another vendor	an already existing account at another vendor, i.e., at a competitor	5	<p><i>Regarding books, their prices are fixed in Germany and Austria and since I already have an account at another online vendor there is no reason why I should switch [to Buch.de].</i></p> <p><i>Currently I have no reason to switch from Amazon to another online bookstore!</i></p>
28	Product range	the range of offered products	5	<p><i>At IEQ.de I developed more trust because they offered a wide range of products. They had a big selection and I did not get the impression that it is a small company.</i></p> <p><i>... I would not switch the vendor, unless it [the vendor] has a wider selection of products.</i></p> <p><i>... but looking at Buch.de's product range, I find it very sparse. Especially the specialist literature. I'm thinking to myself that if I order something over the Internet, then at least I want to get a big selection of products to choose from.</i></p>

Table 4. Inductive Categories Derived From the Focus Groups (continued).

Nr.	Category	Description	Frequency	Anchor example(s)
29	Vendor guarantees	guarantees provided by the vendor, e.g., in case of returns	5	<p><i>I consider guarantees rather as "must have" on the website. If there is no information about that I become suspicious.</i></p> <p><i>It depends on the price of the product. If it is something very valuable. Maybe above € 400.-, then such guarantees become important.</i></p>
30	Communication on website	the marketing messages, the communication used on the website, e.g., the choice of words, the jargon	4	<p><i>... the use of wording [at IEQ.de], like for example "Real snip!", "Cool price!", "Product of the month!". This is really dubious!</i></p> <p><i>Reading "Super-hot price!", "Perfect cooking for every household!" I get the feeling they have a problem with their target groups! I just think to myself: Not with me! I'm gone!</i></p>
31	Company feedback	the feedback of the company in case of pre-purchase inquiries	3	<p><i>Maybe I would check if the offline subsidiary is really existing and maybe call there and check how their feedback is.</i></p> <p><i>First I would check all terms [of business] in detail, then the overall website and then I would call there and simply ask some minor questions to get a sense of the company and how they react.</i></p>
32	Vendor ratings	vendor ratings of users at independent price-comparison sites, such as www.geizhals.at	2	<p><i>I use sites like geizhals.at, which provide price comparisons ... and there I look at the ratings the vendor has received from other users.</i></p> <p><i>But it's not always possible to go to geizhals.at or similar sites and compare the vendors...</i></p>
33	Terms of business	the terms of business of the vendor	2	<i>The terms of business, security measures, additional expenses and terms of payment are the fundamentals.</i>
34	Third-party seal	third-party seals presented on the website	2	<i>If a site has a third-party seal, this increases my trust in the vendor a little bit. The problem is that not enough websites have such seals. It would decrease my options dramatically if I would only purchase from websites which have such seals.</i>

Table 4. Inductive Categories Derived From the Focus Groups (continued).

Nr.	Category	Description	Frequency	Anchor example(s)
35	On-site advertisements	on-site advertisements, e.g., banner ads, from other companies	2	<p><i>I paid attention to the aspect if advertisements and references of other companies were visible on the site. This increases my trust in the vendor. Such advertisement shows me somehow that the online vendor has connections with other companies. But it depends on the kind of advertisement. It has to fit to the page content.</i></p> <p><i>At Yahoo's website I received over a longer period of time pop-up ads for a spy camera. This was disreputable and touched me in a negative way. Due to that my impression of the whole [Yahoo!] website became worse.</i></p>
36	Indications of "real" people	indication and presence of "real" people operating the online vendor	2	<p><i>What makes me flee from a site is, if I never come across any real people. Because who should I contact if I face a problem? I want something tangible!</i></p> <p><i>Maybe it might be good idea for the vendor to put the pictures of the CEOs on the website, in addition to stating their names. Probably this would increase my trust.</i></p>
37	Reports about the vendor on the Internet	reports about the vendor on the Internet	1	<i>I search for the [unfamiliar] company name at Google.com and check if there is anything negative reported on the Internet about this vendor ... and if there are links from other sites [pointing to this vendor].</i>
38	After-sales services	post-purchase service opportunities provided by the vendor	1	<i>After-sales service is an important aspect. For example repairs. It is important to get help and that you can go somewhere to have it [the product] fixed.</i>
39	Information transparency	the degree of information transparency of the vendor	1	<i>... Just presenting the product and the price is not enough. [I want] Information transparency!</i>
40	Browser independent site design	the tolerance of the vendor's website towards different Internet browsers	1	<i>If the website is only readable with Internet-Explorer, then this keeps me from shopping there, because I use a different browser.</i>

Table 4. Inductive Categories Derived From the Focus Groups (continued).

Taking a closer look at table 4 reveals that several of these 40 inductive categories can be further grouped together, forming higher-level, deductive categories (i.e., categories based upon theoretical considerations) (Mayring, 2003). This process is necessary because the new findings need to be incorporated in our preliminary research models (presented in chapter four), and subsequently tested in a quantitative survey and statistically analyzed. In order to be able to proceed to the quantitative study, the number of categories/factors needs to be carefully reduced down to a feasible and parsimonious number.

Using the existing trust literature (see chapters two and three) the following 18 deductive categories were created, typically each summarizing several sub-categories from table 4, and are ranked by their frequencies:

Terms and conditions

The deductive category terms and conditions includes consumer's perceptions about the provided payment options, the terms of delivery (i.e., costs of delivery and the length of delivery), vendor guarantees, after-sales services and vendor's terms of business being favorable in the eyes of the consumers. Taking the anchor examples of these inductive categories in table 4 into account it can be concluded that the more the terms and conditions shift risks and costs from the buyer to the seller, the more the buyer is likely to buy from the online shop. However, perceptions of what is risky and what is not vary among individuals. For example some participants considered limited payment options, such as "credit card only", as too risky and would refrain from such an online shop while others did not consider this as problematic. Overall, 21 of the participants mentioned that the terms and conditions of the online vendor are important in their decision to purchase from the given vendor.⁷¹

Product category

This category summarizes the inductive categories product category, branded products and product need. It covers the finding that participants' decision to purchase at an online vendor is strongly influenced by the nature of the product(s), (i.e., the monetary value and complexity of the product) as well as the perceived degree of comparability of the product with

⁷¹ Doubles were excluded from all the frequencies of this and the following categories when summarizing inductive categories into one deductive category. In other words, if one participant stated for example that both, the payment options and the length of delivery were important for her or him this was counted only as one statement and only added once to the frequencies of the category of terms and conditions.

alternatives, which is facilitated in the case of branded products of well-known manufacturers, and last but not least the consumer's need and desire for the product in question. Facets of product category were mentioned by 20 participants to affect their decision to purchase from an online vendor.

Site usability

Site usability forms a deductive category covering aspects mentioned by many participants. It summarizes the categories of site usability (i.e., the ease of use and clarity of the website including the amount of information presented on the website), the ease of use of the registering and purchasing process, and on-site search functionalities (i.e., an on-site search engine or a Frequently Asked Questions section). Hence, site usability focuses on the perceived ease of use of the overall site and the ordering process as well as the degree of easiness of information retrieval on the website (similar to Davis', 1989, construct of "perceived ease of use" of the Technology Acceptance Model; see also section 3.3.3.). 20 participants mentioned that these elements are important for them in their decision to purchase from a given online vendor.

Site design

The next category, almost mentioned as often as site usability, is site design. It consists of the inductive categories of appealing website design and professional and serious website design. Hence, site design covers such aspects as the layout, the usage of colors, and the appeal and attractiveness of the overall website as well as the catchiness of the homepage and the degree of professionalism and seriousness of the overall site and/or single design elements. 18 participants stated that these issues are important for them in their online purchase decision.

Information quality

Information quality consists of the five inductive categories, namely, information transparency (i.e., consumer's perception about the degree of information sharing by the vendor regarding all information necessary for a purchase), company description (i.e. consumer's perception about on-site information available about the company, such as in an "About us" section), contact information (e.g., the vendor's postal address, phone numbers, e-mail addresses), product information (i.e., consumers' perceptions regarding the degree and quality of information provided by the vendor about its products) and communication on the website (i.e., consumer's perception regarding the choice of wording used by the vendor in

texts presented on the website). 18 participants stated that elements of information quality are important in their online purchase decision (Loiacono, Watson and Goodhue, 2002, who developed an instrument to measure the quality of a commercial website and also included this dimension in their model).

Institutional trust

Another higher-level category can be formed with the categories company location (offline and online), standard of comparison/standard situation, and third-party seal. This deductive category were termed “institutional trust” as the given anchor examples in table 4 point to institutional-based trust constructs already described in the literature (see sections 2.7.2.1. and 3.6.2.3.), such as by McKnight and his colleagues. Using McKnight et al.’s (1998) terminology, the category standard of comparison/standard situation refers to McKnight et al.’s institutional-based trust construct of “situational normality”, while third-party seals and the company location represent “structural assurance” beliefs being also part of institutional-based trust. Structural assurances comprise such safety nets as regulations, guarantees (such as trusted third-party seals), contracts and legal recourse or assurance procedures (cf. McKnight and Chervany, 1996; McKnight et al. 1998). While it may seem quite obvious that third-party seals represent a form of institutional-based trust this may not be equally clear with the company’s location. Yet, as the first anchor example of this inductive category in table 4 clearly illustrates the buyer, noting that it is a company located in Austria, trusts in Austrian regulations and the possibility of legal recourse in case of problems. The same idea is also transferable to the online location of the company (i.e., its online domain/Internet address), although to a lesser degree (see the anchor examples of company location in table 4). Here again, noting the vendor’s online domain, the buyer evaluates if it is an Internet address which can be traced back to the “real”, offline location of the company and if that is the case then again institutional-based trust regarding for example the possibility of legal recourse – one facet of structural assurances - comes into play. Situational normality on the other hand is situation specific and the belief - based on past experience - that the outcome of a situation will be beneficial because the situation is perceived as being normal, familiar and that “everything seems in proper order” (McKnight et al., 1998; Lewis and Weigert, 1985, p. 974). Overall, 17 participants mentioned facets of the category of institutional trust to affect their decision to purchase from an online vendor.

Recommendations

The category recommendations includes recommendations and word-of-mouth of friends and acquaintances regarding the online vendor and/or its products, user testimonials on the vendor's website about its products, vendor ratings published at other independent websites, as well as reports about the vendor on the Internet. In other words, the category of recommendations include both, word-of-mouth from people the buyer knows personally (similar to the construct "word-of-mouth referrals" in Kim and Prabhakar, 2002) as well as recommendations from strangers available on the vendor's website or at other sites (i.e., the so-called "word-of-mouth"). 15 of the 24 focus group participants stated that elements of this category are important in their online purchase decision.

Price

The category price could not be further summarized and forms a category of its own. It refers to consumers' perceptions about the price to be paid for the (potential) online purchase, typically in relation to other online or offline shopping alternatives (i.e., savings) (see also section 3.3.7., on Thibaut and Kelley's Social Exchange Theory, and their element of Comparison Level in exchange relationships, which is related to perceived price/savings). This category was mentioned by 14 participants.

Corporate brand

The familiarity of the online vendor and its reputation (e.g., as included in research models of online trust in Jarvenpaa et al., 1999, 2000, de Ruyter et al., 2001, Pavlou and Chellappa, 2001, Einwiller, 2002, or McKnight et al., 2002) can be grouped together, labeling the resulting category "corporate brand", based upon the given anchor examples which suggest that a strong brand name and brand equity of the vendor are important (see also Ward and Lee, 2000, and Jevons and Gabbott, 2000; Dahlén, Rasch and Rosengren, 2003). Overall, this category was mentioned by ten participants to influence their decision to purchase from a given online vendor.

Data security

The category of data security refers to data encryption mechanisms especially regarding financial information and a secure server employed by the vendor. This dimension has already been discussed and researched within online trust research, for example by Pavlou and

Chellappa (2001) or Koufaris and Hampton-Sosa (2004). Nine of the 24 participants claimed that aspects of data security are important for them.

Company size

The category company size consists of vendor size (i.e. consumer's perceptions about the size of the company) and product range (i.e., consumer's perception about the amount or range of products offered by the online vendor). The first element of this category, namely consumer's perceptions about the size of the vendor has already been researched and discussed within online trust literature, yet, with mixed results (see chapter three and the studies of Jarvenpaa et al. 1999, 2000 and Koufaris and Hampton-Sosa, 2002a,2004). Six participants indicated that these aspects are important for their decision to purchase from an online vendor.

Switching costs

Switching costs, an entity not combined with other inductive categories, covers the case of consumers already having a customer account at another (online) vendor competing in the same product category. This category was labeled based upon a construct included in the research model of Gefen (2002a, see chapter three). He stated that in some cases "customers will remain with a vendor because the costs of switching to another vendor is such that it is not worth their while to switch" (Gefen, 2002a, p. 32; see also Keaveney and Parthasarathy, 2001; Burnham et al., 2003). The costs for the consumer may be for example the requirement to pass through a time consuming registering procedure which, for the individual, might not be worth the effort if price differences among competing vendors are small. Five focus group participants mentioned this category to influence their decisions.

Data privacy

Data privacy refers to the usage and the protection of personal information such as identity and shopping interests by the vendor. Just like aspects of data security this dimension has already been discussed and researched within trust research, for example by Pavlou and Chellappa (2001) and Koufaris and Hampton-Sosa (2002b). Three focus group participants declared that privacy and the protection of their personal information are relevant for their online purchase decision.

Company feedback

The category company feedback refers to the individual's perception about the quality and responsiveness of the feedback of the company's sales-personnel in case of pre-purchase inquiries. Three of the 24 participants mentioned that this category is important for them in deciding to purchase something from an online vendor.

On-site advertisements

The category on-site advertisements is another independent, one-dimensional entity. As indicated by the two anchor examples in table 4, it includes consumers' perceptions regarding advertisements from third-parties placed on the online vendor's website. The two anchor examples also show that the effect of such ads can be both, positive or negative depending on the content of the advertisement and the party placing the ad. Two focus group participants mentioned that on-site advertisements influence their online shopping decision.

Social presence

Social presence is based upon the inductive category of indications of real people behind the website. The category-name "social presence" was chosen because of the similarity with the construct social presence-information richness, included in the research model of Gefen and Straub (2003, see chapter three) who described social presence as "the extent to which a medium allows a user to experience others as being psychologically present" and further stated that "[w]ebsites can also display increased social presence by adding personal touch, such as a personalized greeting to the user ..., or through picture and text content that convey a personal presence" (Gefen and Straub, 2003, p. 11, p. 12). Two focus group participants stated that this aspect influences their online purchase decision (see also the anchor examples in table 4).

Browser tolerance

The category of browser tolerance was only mentioned by one focus group participant meaning that the vendor's website has to be readable by the consumer's Internet browser, even if the consumer uses a lesser-known browser (i.e., not Microsoft's Internet Explorer). If the website is not visible with the consumer's browser this clearly prevents a visit to the website and of course any shopping activity. The category of browsers tolerance was only included in this overview to provide the reader with full information. However, this category,

although clearly expressed by one participant to influence his online shopping decision, is an obvious lockout criterion not containing much theoretical information.

Besides the identification of these 18 deductive categories one additional question, strongly linked with the first research question was if the term “trust” would be brought up by the focus group participants themselves. After an analysis of the transcript for relevant statements of participants, the findings showed that trust was indeed mentioned by several focus group participants to affect their online purchase decision, even without the term being mentioned by the researcher beforehand. The following four sample statements, taken from the four focus groups, all made by participants before the moderator introduced the word “trust”, illustrate this finding:

M(oderator): *How important is a remark about encryption on the website or SSL-encryption generally for you?*

...

A: *I don't have problems with well-known companies which offer something on the Internet but the problem is with no-name vendors. In the latter case a remark about employed encryption is basically a hint about the trustworthiness of the vendor and its offers...* (office worker, female, focus group 1)

[during the demo in which the websites were presented to the focus group participants]

G: *I like it that the contact information is permanently visible [at NRE.at]. This increases my trust.* (pensioner, male, focus group 2)

M: *What are the reasons for generally not purchasing on the Internet or from a certain online vendor?*

...

K: *Trust plays an important role!* (pensioner, male, focus group 3)

M: *Would any of the three example vendors be interesting for you? Could you imagine to purchase something from these three online shops? To which factors did you especially pay attention during the demo?*

...

A: *... The essential question for me is: Do I need what the website is offering me? ... Beside that I just need to be able to trust the vendor. Will I get what I have ordered? And if I decide to trust the company, then I would also provide them with my credit card number, because then I assume it will be well secured anyway. Besides that, I also use online banking and I am sending important e-mails around the globe and I don't have a problem with that. The question is, is the vendor trustworthy?* (faculty member, male, focus group 4)

Regarding the second research question - if consumers would be generally willing to purchase something from an unfamiliar online vendor - the transcript was analyzed for relevant statements of participants, yet, this time applying only summarizing procedures of the qualitative content analysis (Mayring, 2003) without generating additional inductive categories (note that the coding and context unit remained the same while the relevance for the second research question was defined as the selection criterion). The results showed that many consumers are generally willing to purchase something from a completely unfamiliar online store. A clear majority of 13 participants stated that they either already had conducted a purchase with an unfamiliar vendor or that they would be willing to do so under certain conditions. Among these preconditions were: a favorable impression of the vendor's overall offer, a comprehensive and credible description of the company and its products, risk-free payment options such as the option to use paying-in slips, product categories of low financial value, the quality of the vendor's feedback in case of pre-purchase inquiries and the lack of negative reports on the Internet about this vendor (e.g., within Google's search results). Five of the 24 participants claimed that they would rather not shop at an unfamiliar vendor unless facing certain circumstances, especially a strong need for the given product and no favorable alternatives as well as a very competitive price and again, risk-free payment options. Four participants said they would generally not purchase from an unfamiliar vendor while the two remaining participants did not express a clear opinion about this topic in the discussion.

Concerning the third research question – factors influencing consumers' formation of trust in an online vendor – the transcript was again analyzed with qualitative content analytic methods

to formulate inductive categories. Just like in the analysis regarding research question number one and two, the coding unit was defined as each complete statement of a person and the context unit as the complete material of the specific focus group the person participated in. The selection criterion was defined as the relevance for the third research question. However, besides explicit statements of participants about the “trustworthiness of the vendor” and “trust in the vendor” also statements including features contributing to perceiving the vendor as “good”, “competent”, “reputable” and “serious” were accepted as fulfilling the selection criterion. In some cases of statements indirectly pointing to perceptions of vendor trustworthiness explication techniques, especially narrow context analysis, were used to determine if the selection criterion was fulfilled (Mayring, 2003). This relatively broad approach was chosen because everyday language is not always as clear and unambiguous as abstract academic definitions and individuals often use terms related to trust in their statements when thinking about trust and trustworthiness. Yet, due to the broad selection criterion and the resulting risk of statements not completely ascribable to the third research question, no explicit frequencies are reported in the following to avoid comparing potentially misleading quantitative results.

This third qualitative content analysis performed on the transcribed material resulted in 21 inductive categories of which however only one was completely new and deferred from the categories already found and formulated during the analysis regarding the first research question. This new category was termed “order confirmation”, as participants stated that “good online vendors” usually send their customers electronic order confirmations immediately after the online purchase, thereby assuring the buyer that her or his order was correctly received by the vendor and eliminating uncertainties. The other 20 categories mentioned by the focus group participants in regard to factors influencing the formation of trust in the vendor were: recommendations of friends and acquaintances, the company’s online and offline location, the company’s reputation, the familiarity of the company, the design of the vendor’s website, vendor ratings and vendor profiles at other, independent websites, data security, company information provided on the website, seals from trusted third parties⁷², vendor return guarantees, indications of “real” people behind the website, the size of

⁷² However, although two focus group participants stated that seals from trusted third parties slightly increase their trust in an online vendor, several other focus group participants declared that they did not know any e-commerce seals and that they did not know any trusted organizations providing such seals for the Internet. Some participants even claimed that if they would notice an icon of such a seal on a vendor’s website they would

the vendor, the quality of the vendor's feedback in case of pre-purchase inquiries, the payment options, communications on the website (e.g., the use of wordings), standard of comparison/standard situation, contact information on the website, and advertisements on the website. Due to the fact that the third research question partly overlapped with the first, main and more comprehensive research question the anchor examples for the 20 categories are almost completely identical with the ones already reported in table 4, and therefore no additional overview table is reported at this point.

Although it was not an explicit aim to calculate frequencies for the findings of this research question several categories were mentioned by significantly more focus group participants than others, indicating that they might be more important for the formation of trust in an online vendor. Among these categories (with frequencies ranging between 14 and eight) were recommendations from friends and acquaintances about a vendor, the familiarity of the vendor and its reputation (i.e., the company's brand equity), and the design of the website. While these factors directly contribute to perceptions of a vendor's trustworthiness another category, mentioned also significantly more often was the company's location. Though this factor increases trust in an online vendor only indirectly by providing participants with structural assurances to trust in (i.e., institutional-based trust; see also section 2.7.2.1.).

The other categories, namely, vendor ratings at other independent websites (e.g., www.geizhals.at), data security, company information on the vendor's website, seals from trusted third parties, vendor return guarantees, indications of "real" people behind the website (i.e., social presence), the size of the vendor, the quality of the vendor's feedback in case of pre-purchase inquiries, the payment options, communications on the website, standard of

become more suspicious. Thus, in the face of this finding one should be careful in considering third-party seals as a way to boost consumers' perceptions of a vendor's trustworthiness, at least in Austria for the time being.

In an unpublished follow-up study by Kaluscha, Alexandrowicz and Grabner-Kräuter (2003) this finding was further evaluated in a quantitative "snowball" survey (n=120). The findings showed that 88.3 percent of the 120 respondents did not know any third-party seal or certificate provided to online vendors. The seals mentioned by the remaining 11.7 percent were "Stiftung Warentest", "Truste", "E-Commerce Quality", "Trusted Shops", "Euro Label". In addition, all respondents were asked if a third-party seals on the website of an online vendor would increase their trust in the vendor. Only 11.8 percent said that such a seal would definitely increase their trust. 23.3 percent declared that their trust would increase slightly, while 10.9 percent stated that the seal would have no effect on them. One survey respondent stated that a third party seal on the vendor's website would make him more suspicious. The vast majority of respondents, namely 52.9 percent declared that it would depend on the organization granting the seal if it would have an effect on their trust in the online vendor or not.

comparison/standard situation (i.e., situational normality, as described in section 2.7.2.1.), contact information on the website, and advertisements on the website, were mentioned significantly less often by the focus group participants (with frequencies between six and one). Hence, although they may be considered to increase consumer's trust in an online vendor, they might be relatively less important compared to the other categories mentioned in the paragraph above.

5.6. Limitations

For reasons of transparency it seems necessary to put these findings into perspective regarding potential limitations before closing chapter five. One limitation may be the characteristics of the research method (i.e., of the focus group). In general, individual interviews are considered to produce more detailed material about each person than focus group discussions. However, it should be noted that focus groups may be more favorable when it comes to topics which "are either habit-ridden or not thought out in detail" (Morgan, 1997, p. 11). In that case an individual interview can be very hard for the interviewer because it would require a lot of skills to get the interviewee to talk about such a topic a great length. On the other hand during a focus group the participants may engage in a lively discussion and produce more material (Morgan, 1997). Thus, given the fact that two of the focus groups consisted of experienced online shoppers and one group including online shoppers and non-online shoppers, resulting in an especially interesting discussion in which each of this two types of participants tried to defend and propagate their opinions, conducting focus group discussions seems to have been the right decision. Another potential threat, by using focus groups as pre-pilot studies for survey development, is posed if the researcher rejects valid theoretical hypotheses because of chance remarks of respondents or overestimates such remarks and is misled (Morgan, 1997). To overcome this potential limitation we tried not to reject any hypotheses created in chapter four unless there was very strong evidence for such a decision. In fact this was only the case for the theoretical hypothesis that Austrian consumer's might be positively influenced by trusted third-party seals on the vendor's website which, according to the vast majority of focus groups participants should not be the case, a surprising finding which was further supported in an additional quantitative "snowball survey" (Kaluscha et al., 2003). A third, potential limitation is posed to the findings regarding their reliability. While Mayring strongly suggested to calculate the intercoder reliability as a measure of reliability (see Mayring, 2003,

pp. 111-115, where he presents several alternative formulas) this was not possible in this case because only one coder, the author himself, was available.

5.7. Implications for the Research Hypotheses

Despite the significant and interesting discoveries, reported in section 5.5, regarding the most important influence factors for consumers when considering a purchase at an online vendor, and the finding that the majority of participants would not explicitly refrain from transacting with a completely unknown vendor, also a number of other important implications can be drawn concerning the (preliminary) research hypotheses and the research models formulated in chapter four and some of the reported findings of prior trust research in chapter three.

Firstly, although the findings are of a qualitative nature and therefore not representative and should not be generalized to other consumers without further studies it is nevertheless noteworthy that the material gathered from the four focus groups provides support for several of the findings in online trust research already reported in chapter three and some of our research hypotheses. Strong support was found for the assumption that word-of-mouth referrals from friends and acquaintances positively influence the formation of consumer trust, as proposed and empirically supported by Kim and Prabhakar (2002, see chapter three). Considerable support was also provided for a positive relationship between the perceived reputation and size of the online vendor and consumer's trust in the vendor (e.g., as measured and statistically supported by Jarvenpaa et al., 1999,2000). However, these findings are not applicable for the special case of this theses which focuses on the initial formation of trust in a completely unfamiliar online vendor. Because in this context the consumer has no prior information regarding the reputation of the online vendor or word-of-mouth referrals. However, the focus groups also supported the a priori hypotheses that perceived security and privacy control of the consumer's data and the perceived social presence on the website are indeed positively related to the formation of consumer trust in an online vendor. Some support was also found for the hypotheses that facets of institutional-based trust, namely, perceived situational normality and perceived structural assurances are positively related to consumer trust in an online vendor. Thus, confirming propositions and findings of Jarvenpaa et al. (1999,2000), Pavlou and Chellappa (2001), McKnight et al. (2002), Teo and Liu (2002), Gefen et al. (2003), Gefen and Straub (2003), Koufaris and Hampton-Sosa (2002b, 2004),

Kim and Prabhakar (2002), all reported in chapter three. The focus group material also further confirmed one of the fundamental assumptions of this thesis, namely a dynamic view of trust, i.e., that the level of trust changes over time. Several explicit participant statements on the development of trust during the focus groups gave evidence for this assumption.

Secondly, despite the support some of our a priori research hypotheses proposed in chapter four received, there are also a few new research hypotheses which need to be added to the existing ones based on the focus group study's findings. Strong support was found for a positive relationship between consumer's perception of the visual design of the vendor's website and consumer's perception of the vendor's trustworthiness. Although prior online trust research has investigated the impact of perceived ease of use (referring to facets, such as in the empirical studies of Koufaris and Hampton-Sosa, 2002a, 2004 and Gefen et al. 2003, which can be subsumed under the deductive category of website usability mentioned above), and website quality (a broad construct in the study of McKnight et al., 2002, including aspects of usability, similarity with other websites and information transparency) on consumers' trust, none of the 24 reviewed studies in chapter three has explicitly postulated a positive relation between the visual design of the website and consumer's trust in the online vendor. Taking the anchor examples of table 4 into account, as well as additional empirical studies by Aladwani and Palvia (2002), Wolfenbarger and Gilly (2003) and a practitioner study by Genex (2003) on user perceptions of website quality, PERCEIVED WEBSITE DESIGN is defined as *the user's belief that the website's overall appearance meets the user's expectations of visual appeal, professionalism of visual stimuli and seriousness of design elements*. Due to this interesting finding, it seems to be justifiable to divert from the original hypotheses H10 and H11 (see section 4.2.) about the positive effect of perceived website quality on the two trust dimensions, and instead of employing this broad construct to split it into a construct of perceived website design and a construct of perceived website usability. This latter factor, PERCEIVED WEBSITE USABILITY is defined as *the user's belief that the vendor's website satisfies the user's expectations of clarity and user-friendliness and that it enables easy navigation during all tasks the user wants to perform on the website*. Hence, we conceptualize both, perceived design and perceived usability as positive, favorable constructs in the eyes of the consumer. It is therefore hypothesized that:

H8_{new}: The perceived design of the website is positively related to consumer's trusting beliefs in the vendor.

H9_{new}: The perceived design of the website is positively related to consumer's trusting intention to depend on the vendor.

H10_{new}: The perceived usability of the website is positively related to consumer's trusting beliefs in the vendor.

H11_{new}: The perceived usability of the website is positively related to consumer's trusting intention to depend on the vendor.

In addition, the findings from the focus groups indicate a strong relationship between the depth and comprehensiveness of on-site information about the company and the offered products (closely related to Koufaris and Hampton-Sosa's, 2004, construct of vendor's willingness to share information, included in the original hypotheses H6 and H7 in section 4.2.), contact opportunities to get in touch with sales-personnel, and the wordings used for statements on the website, with consumer's perception of the trustworthiness of the vendor. All these issues are facets of the deductive category of information quality (see section 5.4.). Furthermore, participants explicitly mentioned the importance of the vendor's terms and conditions and their favorability in their online purchase decision which indirectly suggests that consumers will also care about the amount and quality of information provided on the website about the terms and conditions. Because social presence is closely related to the depth of company information and contact information, it will also be added to this new construct for reasons of parsimony (making the original hypotheses H6, H7, H8, H9, H10 and H11, presented in section 4.2., superfluous). Summarizing these findings and assumptions we propose them all to be dimensions of the new construct PERCEIVED INFORMATION QUALITY which we define as *the user's evaluation of the information available on the vendor's website about the company, its e-commerce procedures, its products, its terms and conditions, and the verbal style this information is presented in meeting the user's expectations*. It is therefore hypothesized that:

H6_{new}: Perceived information quality is positively related to consumer's trusting beliefs in the online vendor.

H7_{new}: Perceived information quality is positively related to consumer's trusting intention to depend on the online vendor.

Adding the three constructs of perceived website design, perceived website usability and perceived information quality to our research models we also expect additional correlations between these new variables. Firstly, it is very likely that consumers perceiving the vendor's website as being well designed will also be likely to perceive the website as being more usable (see also Helander and Khalid, 2000). Secondly, we assume that consumers perceiving the information on the website as being comprehensive and of high quality will tend to view the website of the vendor more positively in regard to its design and its usability (see also Balance Theory in section 3.3.4, which supports these assumption). Finally, due to adding the construct information quality to our model instead of willingness to share information, as well as splitting the original factor website quality into the new, distinct factors website design and website quality we also need to change the original hypotheses H28 and H31 and to add an additional one. We therefore hypothesize the following correlations:

H19_{new}: Perceived design of the website is positively correlated with perceived usability of the website.

H20_{new}: Perceived information quality is positively correlated with perceived design of the website.

H21_{new}: Perceived information quality is positively correlated with perceived usability of the website.

H28_{new}: Perceived information quality is positively correlated with perceived situational normality.

H31_{new}: Perceived situational normality is positively correlated with perceived design of the website.

H41: Perceived situational normality is positively correlated with perceived website usability.

The findings of the focus groups also point to several categories or variables expected to strongly influence the consumers decision to purchase something from an online vendor which previous research has not acknowledged or only used in a different setting. These factors are: product category, switching costs (switching costs were included in the trust model of Gefen, 2002a, yet, only postulated to impact customer loyalty; see chapter three), consumer's satisfaction with the vendor's terms and conditions, and consumer's satisfaction with the prices. Based on the anchor examples of all these categories in table 4 we assume that these four factors will not influence consumer's interpersonal trust in the online vendor but consumer's intention to purchase something from the vendor and to return to the vendor in the future. Due to their expected importance for consumers' decision to transact with the online vendor and to return to its website they are included in the research model as control variables, which provides a stronger test for the model developed in this thesis (Doney and Cannon, 1997). Based on the anchor examples in table 4, we define PRODUCT CATEGORY as *the consumer's perception of the subjective importance, comparability and technical simplicity of the product(s) in question*. Yet, this construct covers a very broad conceptual spectrum which would require a larger number of items in order to operationalize the construct. Therefore, and since the control variables are added to our model rather in an exploratory attempt we decided to pick only one facet of this broad construct, namely, the notion of technical simplicity or product complexity for the empirical test. Subsequently, we only included the element "product simplicity of the vendor's goods" as control variable in the model, representing an aspect of product category which is likely to be important for consumers, since an online purchase involves postal delivery and makes it hard to evaluate the product prior to actual delivery (i.e., this construct covers the question if the consumer perceives the product category offered by the vendor to be suitable for online ordering). Subsequently, we define PRODUCT SIMPLICITY as *the consumer's perception of the technical simplicity of the product(s) in question*. PERCEIVED SWITCHING COSTS is defined as *consumer's perception of the amount of effort required to switch from an existing account at another (online) vendor to the given online vendor*. SATISFACTION WITH TERMS AND CONDITIONS is specified as *consumer's perception of the vendor's terms of business, of delivery, and of payment meeting the user's expectations*. PRICE SATISFACTION is defined as *the consumer's perception of the overall price to be paid for ordering a specific product in question meeting the consumer's expectations*. Based on these definitions we hypothesize that:

H42: Satisfaction with the vendor's terms and conditions will positively affect consumer's intention to purchase from the online vendor.

H43: Satisfaction with the vendor's terms and conditions will positively affect consumer's intention to return to the online vendor.

H44: Product simplicity positively affects consumer's intention to purchase from the online vendor.

H45: Product simplicity positively affects consumer's intention to return to the online vendor.

H46: Price satisfaction positively affects consumer's intention to purchase from the online vendor.

H47: Price satisfaction positively affects consumer's intention to return to the online vendor.

H48: Perceived switching costs negatively affect consumer's intention to purchase from the online vendor.

H49: Perceived switching costs negatively affect consumer's intention to return to the online vendor.

In addition, it is very likely that consumers perceiving the vendor's terms of business positively will also be likely to perceive the price as more favorable and at the same time perceive the costs to switch to this vendor from their traditional suppliers as lower. Also consumers perceiving the vendor's price favorable should be likely to perceive lower costs (efforts) to switch to this online vendor. We therefore hypothesize the following correlations:

H50: Satisfaction with the terms of the vendor is positively correlated with price satisfaction.

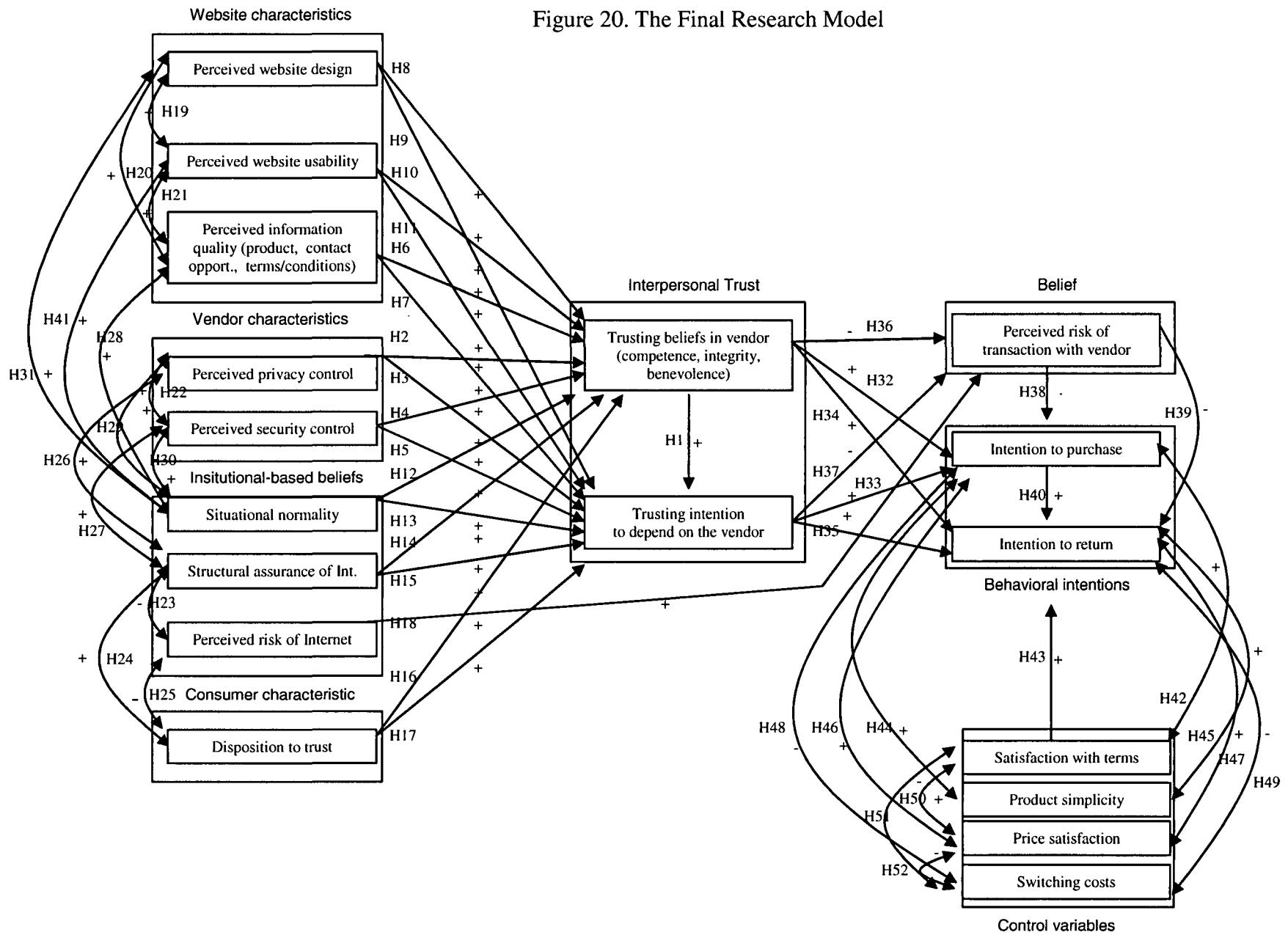
H51: Perceived switching costs are negatively correlated with satisfaction with terms of the vendor.

H52: Perceived switching costs are negatively correlated with price satisfaction.

The categories corporate brand, company feedback, on-site advertisement, browser tolerance and recommendations from strangers (i.e., word-of-mouth) are not included in the research model either because they are not available or not relevant in the situation of consumers' initial trust formation in an unfamiliar online retail store, because they can not be measured in a survey or simply because of the reason of parsimony, because too few focus group participants mentioned the given category to be of importance. The final, main research model, formed based on all these hypotheses, is illustrated in figure 20 on page 183.

The path model of the final, rival model (with a one-dimensional trust construct at its core, initially introduced in section 4.4.), is proposed to look identical aside from the exclusion of the construct trusting intention to depend on the vendor and the exclusion of all paths leading directly to or directly from this construct. Due to the great similarity of the main and the rival model we only present the main research model in figure 20 at this point.

Figure 20. The Final Research Model



6. Quantitative Study – Survey

In this chapter the development and refinement of our measurement instrument for the quantitative survey and the results of the final, confirmatory full-scale survey will be presented, as well as the findings in regard to our research hypotheses and our research models.

6.1. Instrument Development

Since this research aims at measuring abstract theoretical constructs, such as trust which is not directly measurable, it is paramount that this study follows standard psychometric guidelines for this complex type of research. Numerous frameworks and guidelines have been published to date covering issues of scale development and validation, e.g., in the field of psychology by Nunnally (1967) or Bühner (2004), in marketing literature by Churchill (1979), Bagozzi (1980), Homburg and Giering (1996) or within MIS literature by Straub (1989), Subramanian and Nilakanta (1994) and Segars (1997) including individual empirical studies describing their rigorous instrument development techniques quite comprehensively, e.g. Davis (1989) and Moore and Benbasat (1991).

Basically, three steps need to be taken to develop a valid and reliable measurement instrument: item creation, scale development, instrument testing (Moore and Benbasat, 1991). During each step reliability and various aspects of validity of the instrument need to be tested and assured. Reliability concerns the evaluation of the accuracy and error-freeness of measurement (Subramanian and Nilakanta, 1994). In this specific research context, reliability may be characterized as “the extent to which the respondent can answer the same or approximately the same question the same way each time” (Straub, 1989, p. 151) or in other words as “the degree to which measures are free from error and therefore yield consistent results” on different occasions (Peter, 1979, p. 6, cited in Chau, 1999, p. 217; see also Fishbein and Ajzen, 1975, p. 107f.). Reliability is one prerequisite of validity (Churchill, 1979; Homburg and Giering, 1996). These relationships can be illustrated with the help of the following equation

$$X_0 = X_T + X_S + X_R \quad (1)$$

whereby X_0 is the observed (i.e., measured) score of an object, X_T is the true score of the object, X_S represents systematic error (e.g., stable characteristics of the object affecting its score), and X_R represents random sources of error (e.g., fleeting, momentary factors affecting the object's score) (Churchill, 1979, p. 65). A measure may be considered valid "when the difference in observed scores reflect true differences on the characteristic one is attempting to measure and nothing else, that is, $X_0 = X_T$ " (Churchill, 1979, p. 65) or in other words, validity "refers to the degree to which an instrument measures the 'true' score it was designed to measure – in the present context, the degree to which it measures a given belief, .. or intention rather than some other variable" (Fishbein and Ajzen, 1975, p. 108).

Yet, as mentioned above there are difference facets of validity which are important during the instrument development stage: 1) content validity, 2) convergent validity, 3) discriminant validity, 4) construct validity, as well as 5) face validity and 6) predictive/nomological validity. Content validity may be defined as "the representativeness or sampling adequacy of the content and attempts to show the extent to which the measure is representative of the content or the universe of the property being measured" (Subramanian and Nilakanta, 1994, p. 15) and "an instrument valid in content is one that has drawn representative questions from a universal pool" (Straub, 1989, p. 150; see also Nunnally, 1967 and Churchill, 1979). Convergent validity "is the degree to which multiple attempts to measure the same concept are in agreement" (Bagozzi, Yi and Phillips, 1991, p. 425), while discriminant validity "is the degree to which measures of different concepts are distinct" (Bagozzi et al., 1991, p. 425). Convergent and discriminant validity are prerequisites or elements of construct validity (Bagozzi, 1980). Construct validity refers to "the extent to which the instrument measures the theoretical constructs it purports to measure... [i.e.,] it indicates how well the theoretical constructs have been operationalized via the instrument" (Subramanian and Nilakanta, 1994; see also Campbell and Fiske, 1959). In addition, face validity refers to "the extent to which an instrument 'looks like' it measures what it is intended to measure" (Nunnally, 1967, p. 99), and finally, nomological or predictive validity labels "the degree to which predictions from a formal theoretical network containing the concept under scrutiny are confirmed" (Bagozzi, 1980, p. 129; see also Nunnally, 1967).⁷³ For a graphical overview of the techniques applied

⁷³ While face validity of our measurement instrument, can be assessed qualitatively by the reader of this thesis, the other types of validity, namely, content-, convergent-, discriminant-, construct- and predictive-validity will all be evaluated and presented in the course of chapter six of this thesis.

in the development of our measurement instrument and the different stages of assessment of the validity see figure 21.

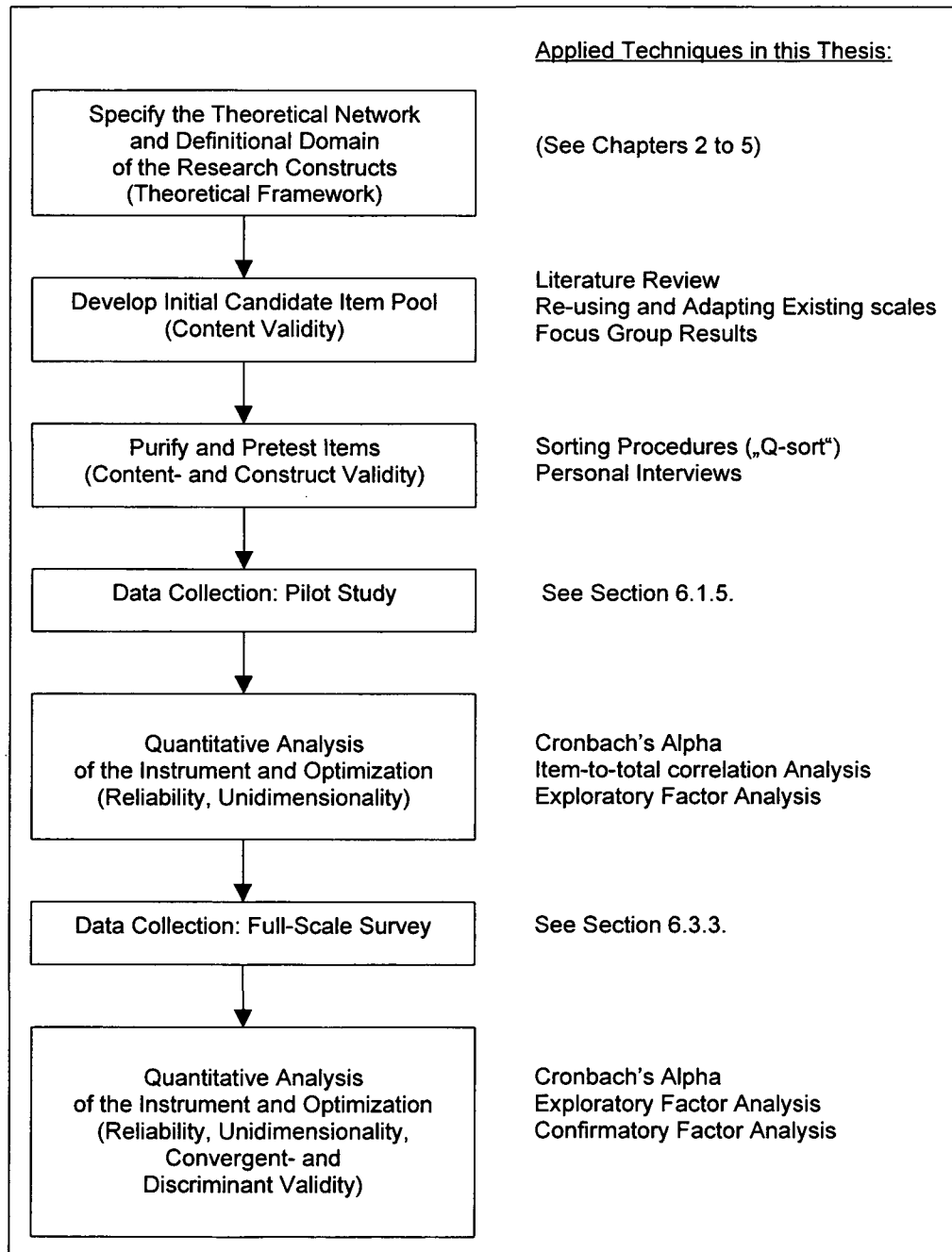


Figure 21: Applied Procedure for the Development and Validation of the Instrument.

Source: Based on Churchill (1979), Straub (1989),
Homburg and Giering (1996) and Segars (1997)

6.1.1. Item Creation and Selection

After developing the theoretical networks and the definitional domain of the constructs (see chapter two to five), the researcher may proceed to the creation of an initial candidate item pool. First of all, a researcher should search for existing scales - used in the past to measure the constructs in question - and should try re-using or adapting these existing ones if possible. This approach is advised by Churchill (1979) and Segars (1997) who argued that otherwise research findings become hard to compare and to synthesize. New measures should only be used if no published ones are found or if existing measures turn out to be inadequate.

In the following, we have reviewed all 24 empirical studies presented in chapter three and analyzed the items they employed while for the new constructs, included in our study due to the findings of the focus group study in chapter four, we have additionally reviewed academic journals from the field of marketing, psychology and MIS for suitable items. Overall, scales from the following studies were analyzed in order to develop an initial set of items: Rotter (1967), Ganesan (1994), Morgan and Hunt (1994), Yamagishi and Yamagishi (1994), Goodhue (1995), Goodhue and Thompson (1995), Petermann (1992), Doney and Cannon (1997), Jarvenpaa, Knoll and Leidner (1998), Jarvenpaa and Leidner (1998), Selnes (1998), Dishaw and Strong (1999), Garbarino and Johnson (1999), Jarvenpaa et al. (1999), Jarvenpaa et al. (2000), Gefen (2000), Gefen and Straub (2000), Lederer, Maupin, Sena and Zhuang (2000), de Ruyter et al. (2001), Lee and Turban (2001), Lynch, Kent and Srinivasan (2001), Pavlou and Chellappa (2001), Roy et al. (2001), Bhattacharjee (2002), Chen, Gillenson and Sherrell (2002), Einwiller (2002), Gefen (2002a, 2002b, 2002c), Janda et al. (2002), Kim and Eom (2002), Kim and Prabhakar (2002), Koufaris (2002), Koufaris and Hampton-Sosa (2002a, 2002b), Loiacono et al. (2002), McKnight et al. (2002), Srinivasan, Anderson and Ponnawolu (2002), Suh and Han (2002), Teo and Liu (2002), Wong and Sohal (2002), Yoon (2002), Cheung and Lee (2003), Chiou (2003), Das et al. (2003), Gefen et al. (2003), Gefen and Straub (2003), Lui and Jamieson (2003), Pavlou (2003), Wolfinbarger and Gilly (2003), Koufaris and Hampton-Sosa (2004)

Table A1 in appendix A presents the initial item pool, consisting of 92 candidate items, which was used as starting point for all further scale refinements. As the refinement procedures aim at eliminating problematic items prior to the survey, our initial item pool included twice the

number of items we intended to use in the final survey. The high number of initial items was necessary due to our main research model consisting of 14 factors of major interest and four control variables (see the preliminary research models in figure 15 and 16, in chapter four, and the final main research model in figure 20, in chapter five). We decided to measure each control variable only with one single item, asking for an overall judgement of the respective factor of interest and therefore did not include them in the scale refinement process. All other 14 scales, which were operationalized with multiple items, were included in the refinement process. Since a minimum of three manifest items per latent factor is generally recommended, each scale consisted initially, at the beginning of the refinement process, of at least six items. However, the scales for perceived information quality of the website and trusting beliefs in the vendor were extended because they measured construct assumed to be formed by several facets (competence, integrity and benevolence in the case of trusting beliefs) or to cover a broad spectrum of attributes (product information, company/contact information and information about the terms in the case of information quality). We therefore decided that these scales would require more items and started with twelve candidate items for the trusting beliefs scale and with eight candidate items for the information quality scale to end up with a minimum of six and four items respectively for these two scales after the refinement process.

Most of the 92 candidate items for the initial item pool were either directly taken from published journal articles or slightly adapted and subsequently translated from English into German. In the course of this process we put special emphasis on authentic translations, sticking as much to the original meaning as possible while at the same time striving for understandable and meaningful German items. During these translations the opinions of two experts were included, one being a retired high school teacher who had thought German, the other being a faculty member of the department of psychology and an expert for measurement development and quantitative research. Both experts were fluent in English as well. Based upon their suggestions several minor improvements were made to the items. Some items had to be adapted though to fit into the German context. For several scales (e.g. for information quality) new items had to be developed to reach the predefined minimum of initial candidate items. These new items were based upon the theoretical construct definitions formulated in chapters four and five of this thesis and partially inspired by statements and wordings by the participants in the focus group study, reported in chapter five. During the formulation of these new items we also focused on the theoretical meaningfulness of the concepts (Bagozzi, 1980).

Despite the four control variables all other variables were intended to be measured with multi-item scales. Due to reasons of parsimony and the tendency of respondents not to finish long questionnaires concessions needed to be made regarding the measurement of the control variables. While single-item measurement of constructs can be problematic, due to individual items typically having “considerable specificity”, measurement error, and the items not being able to categorize respondents very specifically (Nunnally, 1967, p. 56-57) this risk was willingly taken since the four control factors were not of primary interest and rather included in the research model for exploratory reasons.

All items were placed on a seven-point Likert-type scale. Anchors used for all items capturing beliefs typically ranged from “strongly agree” (German translation: “stimme völlig zu”) to “strongly disagree” (German translation: “stimme gar nicht zu”) except one item of the purchase intention scale ranging from “very high” (German translation: “sehr hoch”) to “not very high” (German translation: “gar nicht hoch”) while items capturing intentions used anchors ranging from “very likely” (German translation: “sehr wahrscheinlich”) to “very unlikely” (German translation “sehr unwahrscheinlich).

6.1.2. Pretest 1 – Item Sorting Procedures

At this early stage of instrument development it was crucial to check all candidate items for content validity and construct validity. In addition, a major purpose during this item refinement stage was to identify and eliminate ambiguous items with double meanings, irritating wordings or confusing jargon.

To test and enhance the validity of the scales during the item refinement process several authors have suggested qualitative pretests using panels of experts or judges (e.g. consisting of academics, practitioners from the field of research, representatives of the target population). Such procedures are for example reported by Stephenson (1953, cited in Nunnally, 1967, summarizing Stephenson’s “Q-Sort” technique) by Davis (1989), Straub (1989), Moore and Benbasat (1991), Moorman et al. (1993), Segars (1997) or Bhattacharjee (2002). In the following we employed a mix of several published methods to ensure content and construct validity. Specifically, we created a design which adopted ideas from Davis (1989), Moorman et al. (1993) and Bhattacharjee (2002). Overall, we evaluated the candidate

items with the help of a sample of 18 participants (9 males, 9 females) in an iterative, two-step sorting process:

In the first step a sample of 15 judges (six faculty members, two undergraduate students, four office workers, two pupils and one pensioner, all of them being computer literate and e-commerce adopters) participated in one-to-one personal interviews and were asked to perform two tasks, namely a categorization task and a prioritization task with the candidate items. For the categorization task each participant was first provided with the German definitions of the 14 major target constructs⁷⁴, each printed on a light blue card (3.5 x 16 cm or 1.4 x 6.4 inch).⁷⁵ After that, the respective participant was informed to place all 14 construct cards on a big table in front of her or him and to read each definition carefully. In case of problems in understanding the definitions the participant was allowed to ask the researcher/interviewer for clarification. If all definitions were clear to the participant she or he proceeded with the categorization task and was asked to randomly take one item-card at a time from the thoroughly mixed stack of item cards, to read it carefully and to assign it to a construct card which she or he found most appropriate and matching to the item card. The judges had to assign all of the 92 candidate items which were all printed on white cards (2 x 16 cm or 0.8 x 6.4 inch). Furthermore, judges were informed that if they would find item cards not being assignable to one construct card only they should place these ambiguous items on a separate stack on the table. After each participant had assigned all 92 item cards to the 14 construct

⁷⁴ The four control variables were excluded from this pretest because they were chosen to be single-item measures for reasons of parsimony.

⁷⁵ The construct definitions from chapter four and five of this thesis which were originally printed on the cards were slightly modified for this purpose based on the finding of two prior pre-pretests which indicated problems with readability and understanding of the original definitions. As a result, the (German) definitions printed on the construct cards were modified resulting in a slightly different text and card design. The final design of the construct cards showed the bold construct title centered, in Times New Roman font with 16-point font size, followed by the construct definition which was written centered in Times New Roman font with 12-point font size, and always initiated with the text “comprises all statements referring to”. For example the construct purchase intention was previously defined in this thesis as the consumer’s willingness to engage in an exchange relationship with the online vendor including the ordering of the products (or services) and submission of personal information to the vendor over the Internet. Subsequently, the specific construct card showed the bold title “Purchase intention with this vendor” and below the text “... comprises all statements referring to the willingness of the consumer to engage in a purchase with this online vendor and to submit him the required financial information”. During all this pretests only the German items and the German construct definitions were used.

cards or the “non-assignable” stack the researcher provided the respective participant with the additional instruction to rank all the item cards within each construct according to how well the meaning of the items matched the given definition on the construct card. Subsequently, the item placed by the judge right below the construct card represented the item she or he thought would fit the construct best, followed by the item fitting second best, etc. During the categorization and prioritization tasks the judges received all their instructions on a piece of paper in order to standardize the instructions and to avoid bias. Overall, each interview lasted for an average of approximately 60 minutes, including the reading of the instructions, the categorization and the prioritization of all items.

After this first sorting round the results of the 15 judges were entered into a table, listing each of the 92 candidate items and their assignments and ranks throughout the 15 interviews. This was carried out to get a comparison at the individual item-level. For the analysis of the reliability of the judges’ categorization results on the scale-level we adopted a technique developed by Moore and Benbasat (1991, pp. 200-201 and pp. 212-214).⁷⁶ Following Moore and Benbasat we created a matrix based on the theoretical and actual item placements. This technique is quite graphically, presents a good overview and allows the researcher to easily identify problematic scales, represented by a high number of off-diagonal entries in the placement matrix. Nevertheless, it needs to be pointed out that this technique is a more qualitative one. Scales resulting in a high “hit ratio” (i.e., scales with most items placed in the diagonal of the matrix) may be regarded as having a higher validity than scales with lower “hit ratios” (Moore and Benbasat, 1991). For the cumulative results of the first pretest round see table 5 below. However, the findings show that the judges’ overall “hit ratio” was quite low during this first sorting round, with only 68% of items placed in the correct category. The most problematic scales, with hit ratios below 50% were the scales for the theoretical constructs privacy control, situational normality, trusting intention and purchase intention (see table 5).

In the second step, based upon these preliminary findings, several items were omitted – those with considerably worse categorization results and those being ranked lowest in the

⁷⁶ Another possible test to assess Interrater-Agreement is for example Cohen’s Kappa (see Bortz, 1999; Bühl and Zöfel, 2000, p. 249; Belanger, Hiller and Smith, 2002). For other Interrater-Agreement evaluation techniques, applicable for different kinds of purposes, see also Mayring (2003), Burke and Dunlap (2002) and Smith-Crowe and Burke (2003).

prioritization task during the first sorting round - and the number of candidate items was reduced for each construct down to the minimum targeted item number plus one item (e.g., for the site design scale four items, i.e., the minimum of three plus one item). Thus, in the second sorting round only 62 items were used. In this second sorting round we started with a sample of 3 judges (one office worker, one undergraduate student and one pupil) to evaluate if the dropping of the most ambiguous items would enhance the overall “hit ratio”.

Initially, it was planned to test more than three judges if preliminary findings of this second sorting round would again turn out to be mediocre. Aside from the reduction of item cards all instructions and procedures remained the same. As the results of this second round show, the overall “hit ratio” increased dramatically up to 94% reaching an acceptable level of correct item placements (see table 6). Due to this very positive result, which indicated that the reduced scales now exhibited relatively consistent meanings across the judges, we decided to end this specific pretest and moved on to the next stage of pretesting. However, as the number of retained items was still larger than the number of items finally planned for the pilot survey (i.e., which was 50 items), the overall performance of the 62 retained items during sorting round one and two was again evaluated at the individual item-level, based on the individual item “hit ratios” and relative rankings. Subsequently, only 50 items were retained based upon their relative “hit ratios” and rankings during all 18 personal sorting interviews.

Actual Categories																	
Target Category	Site Design	Site Usability	Information Quality	Privacy Control	Security Control	Situational Normality	Structural Assurances	Internet Risk	Disposition to Trust	Trusting Beliefs	Trusting Intention	Risk of Transaction	Purchase Intention	Return Intention	n.a.	Total	% Hits
Site Design	87	2													1	90	97
Site Usability	6	70	9			1			1						3	90	78
Information Quality		9	102		1	2				1	1	1	1		2	120	85
Privacy Control				35	21	1			1	14	1	6	2		9	90	39
Security Control		1		8	66	1	1		1	3	1	2	2		4	90	73
Situational Normality	9	17	2	1		44		1	5		1	2	1		7	90	49
Structural Assurances				5	3	4	60	14	1						3	90	67
Internet Risk				5	4	4	4	58	5			5	2		3	90	64
Disposition to Trust						5		1	84							90	93
Trusting Beliefs					1	2			4	117	30	9	9	2	6	180	65
Trusting Intention										13	44	5	22	1	5	90	49
Risk of Transaction				1	5			1	1	16	4	50	4		8	90	56
Purchase Intention				4	4			1	2	12	13	6	40		8	90	44
Return Intention		2								4		1	2	79	2	90	88
Number of items to categorize: 92 Number of judges: 15				Total number of item placements: 1380				Total number of hits: 936				Overall hit ratio: 68 %					

Table 5. Item Placement Scores – First Sorting Round.

Actual Categories																	
Target Category	Site Design	Site Usability	Information Quality	Privacy Control	Security Control	Situational Normality	Structural Assurances	Internet Risk	Disposition to Trust	Trusting Beliefs	Trusting Intention	Risk of Transaction	Purchase Intention	Return Intention	n.a.	Total	% Hits
Site Design	12															12	100
Site Usability		12														12	100
Information Quality			16	1											1	18	89
Privacy Control				10						1					1	12	83
Security Control				2	10											12	83
Situational Normality		1				11										12	92
Structural Assurances							12									12	100
Internet Risk								12								12	100
Disposition to Trust									12							12	100
Trusting Beliefs										22	1		1			24	92
Trusting Intention											11		1			12	92
Risk of Transaction												12				12	100
Purchase Intention											1		11			12	92
Return Intention														12		12	100
Number of items to categorize: 62 Number of judges: 3				Total number of item placements: 186				Total number of hits: 175				Overall hit ratio: 94 %					

Table 6. Item Placement Scores – Second Sorting Round.

6.1.3. Survey Design Development and Stimulus Selection

Since confirmatory factor analysis (CFA) and structural equation modeling (SEM) represent the state-of-the-art of measurement validation and hypotheses testing in online trust research (see the literature review in chapter three, and especially table 1) this statistical procedure was also chosen for this thesis, using the statistical package LISREL 8.5. However, this statistical method requires relatively large sample sizes. Suggestions for minimum sample sizes vary in the literature but some rules of thumb suggest that a minimum of 200 respondents is needed and that the ratio between manifest items and respondents should be at least 1:5 or better 1:10 (see chapter three or e.g., Bhattacharjee, 2002). Thus, with a questionnaire including 50 items the number of valid questionnaires/cases needed to perform meaningful CFAs and SEM should be at least 250.⁷⁷

Due to limitations regarding financial resources and time limits it would have not been possible to gather such a big number of cases in the course of this PhD thesis if all respondents would have been required to sit at a personal computer with Internet connection and to navigate to a predefined online vendor prior to filling out the questionnaire (a setting used in several of the empirical studies reported in chapter three). It would have required a considerable amount of financial incentives to reach such a high number of participants. Consequently, we decided to adopt a survey design employed by Bhattacharjee (2002). Bhattacharjee presented a classroom of MBA students with Amazon.com's website. After following a "tour" of the website pointing out Amazon's trust-building initiatives, privacy statement and secure connection for billing information (i.e., as stimulus for the respondents) Bhattacharjee asked the students to fill out a questionnaire based upon their perceptions of Amazon after the tour (cf. Bhattacharjee, 2002, p. 228). While this procedure is relatively efficient regarding financial resources and time constraints and may be used to gather large

⁷⁷ Despite these rules of thumb the most appropriate and accurate way would be to conduct a power analysis first (Cohen, 1988), but due to the relative newness of online trust research and the fact that there are only few and quite heterogeneous published trust studies available, did not provide us with all the necessary information to do so (e.g., expected magnitudes of parameter estimates) (Kaplan, 1995). Furthermore, in a recent paper McQuitty (2004, p. 181), discussing alternative ways of accessing statistical power in SEM by using the sample size and the degrees of freedom, pointed out that with large models with large degrees of freedom (approx. ≥ 400) – such as in the case of the research models in this thesis (see table 14) – the minimum "sample size required to achieve a sufficient level of power can become unrealistically small."

sample sizes, it leads to several limitations, especially limited external validity of the findings. After considering the pros and cons, the decision was made in favor of the usage of Bhattacharjee's design (see also section 6.3.5. where we discuss our study's limitation in more depth).

Since this thesis investigates the development of initial consumer trust in an online retail store (i.e., consumers' perception of a completely unfamiliar online vendor) it was necessary to present the respondents with a website with low levels of familiarity, thereby maximizing the number of respondents not being at all familiar with the given online vendor. Furthermore, a product category had to be defined to be investigated in this study. Although the online bookstore sector has already been researched by a number of empirical studies on consumer trust in e-commerce, we decided to use an online vendor primarily offering books as well. This decision was made since books represent a product category which is relatively standardized and relatively easy to evaluate by respondents without extensive product information compared to other products such as for example consumer electronics, services, etc. Furthermore, in the light of the decision not to let respondents to navigate individually to the selected vendor's website, the plan to use a relatively standardized product deemed most appropriate.

After clarifying the product category of interest the Internet was searched for suitable Austrian and German candidate online shops, for being used as stimulus for the survey respondents. Subsequently, the online bookstores www.lion.cc, www.aum.at, www.bol.de, www.buecher.de, www.buch.de were pre-selected and further reviewed based on several criteria: overall professional appearance of the vendor's website (visual design, usability), the availability of data security features, the availability and content of privacy policies, the vendor's terms of business (especially the terms of delivery, terms of payment, and return policies), the availability of trusted-third-party seals and the degree of familiarity of the respective website (i.e., corporate brand). The latter criterion, the degree of familiarity of the vendor, was assessed qualitatively by asking several PhD students and faculty members, all being heavy Internet users and experienced online shoppers, if they were familiar with the candidate websites and if they had ever visited them in the past. Despite all these criteria it is noteworthy to point out that the final decision was a subjective one made by the researcher. After all, the online vendor www.bol.de was selected as it was found to be comparatively lesser known while still having a professional website. At the time of the survey, during

March 2004, www.bol.de offered hard-copy books, e-books, music CDs, videocassettes and DVDs, computer software and computer games at its website (see figure 22 below, showing the homepage of www.bol.de). Despite the decision to use www.bol.de as stimulus for the survey participants in the final quantitative study, this decision was at that time still subject to the experiences during further pretests and the pilot study reported in the following sections.

Regarding the information to be presented to the respondents about the stimulus website and the page content to be shown to the respondents it was decided to select an amount of information fitting into approximately ten minutes of time. The presentation of the stimulus website by the researcher for the respondents was planned to be live and carried out with the help of a laptop with Internet connection, a beamer and a large screen for the final survey. The structure of this multimedia presentation of the vendor's website was planned to be highly standardized, starting with an overview of the company's homepage accompanied by introducing words about the products offered by the vendor and the general homepage structure. Afterwards, it was planned to show respondents how a sample product (a course book) can be searched with the on-site search, then the product page of the given book would be presented, after that the product would be placed in the "shopping cart" and after that the content of the "shopping cart" would be shown to the respondents, followed by the vendor's order form for "new customers" and a sub-page providing information on the accepted means of payment, the time of delivery and the costs of delivery to Austria (at the specific stimulus website www.bol.de: 3-9 working days; always 3.5 EUR to be paid for deliveries outside Germany regardless of the product price, credit-card only payment for customers located outside of Germany). Afterwards, the presenter would always return to the homepage, scroll down to the page footer and present the content behind the link "Impressum" (English translation: "masthead"; including the company's postal address, contact information including phone/fax and e-mail, bank account number, name of the company's CEO), the link "Datensicherheit" (English translation: "Data Security"; including information on data encryption and server protection) and the link "Datenschutz" (English translation: "Data Protection"; leading the user to the company's privacy policy, including information about which user-information is collected, how it is collected, why it is collected, the circumstances under which the company would share the user's information with other parties, the user's opportunities to access her or his own customer profile and information on employed data protection procedures). Finally, the presenter would return to the homepage again and tell the

survey respondents to fill out the paper-pencil questionnaire based upon this first impression of the online vendor.



Figure 22. Homepage of www.bol.de

6.1.4. Pretest 2 – Personal Interviews

The next stage in the instrument development process was performed with the help of seven one-to-one face-to-face interviews. The interviewees were four females and three males, with their age ranging from 19 and 30 years, all being either undergraduate or PhD students. All seven respondents were relatively experienced Internet users and all had conducted at least one purchase via the Internet in the past.

For this purpose an initial version on the questionnaire was developed using the 50 items retained after pretest 1 and the four single-item measures for the four control variables (for an overview of all the initial items see table A1 in appendix A). In addition, seven demographic

questions were added at the end of the questionnaire as well as one item measuring the respondents' prior experience with the given stimulus website. In order to be able to evaluate the usage of the stimulus website presentation as intended for the pilot study and the final survey, the interviewer presented each interviewee at first with the website of www.bol.de for approximately 10 minutes following the presentation structure laid out in section 6.1.3. with the help of a PC with Internet connection. During this live-presentation each interviewee was asked to follow the interviewer's interactions with the website on the screen of the PC and to listen carefully to the interviewer's accompanying words. Afterwards, each interviewee was asked to fill out the questionnaire based upon her or his impressions of the online vendor resulting from the presentation. After completion of the questionnaire each respondent was interviewed about any problems in filling out the questionnaire, the suitability of the presentation, any suggestive wordings used during the presentation and was asked for any additional remarks helping to improve the stimulus presentation or the questionnaire. Overall, the seven interviews indicated no problems regarding the stimulus presentation or the questionnaire items which led us to the decision to finish the pretests and to move on to the quantitative pilot study.

6.1.5. Pilot Study

The refined 50-item questionnaire (see appendix B) was administered to 49 pupils in a local high school during their IT courses by the researcher. The respondents, all being between 17 and 19 years old, closely resembled the characteristics of a student sample and were therefore chosen for the pilot study (for demographics and online experience of the 49 respondents see table 7).

Special care was taken during the stimulus presentation which rigidly followed the structure outlined in section 6.1.3. The classroom in which the pilot study took place was equipped with desktop PCs, Internet connection, a beamer and a large screen allowing the researcher to present the website of www.bol.de live via the Internet, as intended in the final survey. The whole procedure from presenting the online vendor's website, distributing the questionnaires until the collection of the completed questionnaires took approximately 20 minutes. Although participation was on a voluntary basis all pupils filled out the questionnaire resulting in 49 valid cases. Overall, the stimulus presentation with the help of the beamer proved to be sufficient for the respondents to fill out the questionnaire as hardly any missing values were

located in the data and an evaluation of the histogram of each item showed that the items were relatively normally distributed, all items with their skewness and kurtosis ranging between the recommended -2 to $+2$ range (Bhattacharjee, 2002, p. 229) (for means, standard deviations of the pilot study items see Appendix B). Furthermore, following the completion of the questionnaire, the respondents were asked by the researcher if any items were specifically hard to answer or in any way problematic, resulting in additional feedback from several pupils.

Demographic variable (n=49)	Frequency	Percent
<i>Gender</i>		
Female	20	40.8
Male	29	59.2
<i>Internet Experience</i>		
1 to 2 years	4	8.2
3 to 5 years	35	71.4
6 to 10 years	10	20.4
<i>Online Shopping Experience</i>		
Never	17	34.7
1 to 2 times	12	24.5
3 to 10 times	7	14.3
> 10 times	13	26.5
<i>Credit Card at Disposal for Online Shopping</i>		
No	32	65.3
Yes, own credit card	4	8.2
Yes, credit card of someone else (e.g., parents)	12	24.5
<Missing value>	1	2.0

Table 7. Demographics of the Pilot Study Respondents.

In a first step we used the data gathered to compute the reliabilities of the pilot study scales using Cronbach's Alpha. Although almost all scales exceeded the recommended reliability threshold of 0.70 (Nunnally, 1967) two scales, namely the ones for the constructs website usability ($\rho=0.59$) and privacy control ($\rho=0.65$) were found to have lower reliabilities. In addition, the Internet risk scale only marginally exceeded the recommended threshold with an Alpha of 0.72. All other scales showed acceptable levels of reliability ranging between 0.76

and 0.90. A detailed analysis of the three problematic scales provided more information. An item-to-total correlation analysis revealed that the privacy control scale could be marginally improved by deleting the first privacy item from the scale but it would still result in an Alpha below 0.70. The data further indicated that the site usability scale could not be improved by deleting any item. The analysis revealed though that the reliability of the Internet risk scale could be increased up to an Alpha of 0.76 by deleting the third item from the scale. However, due to the early state of the research we decided rather not to delete any items but to contrarily add items or modify the unreliable items (see the German version of the pilot study scales in appendix B).

Although the sample size of 49 respondents allows for several statistical analyses⁷⁸ the sample was definitely too small to conduct any meaningful confirmatory factor analysis. However, following the suggestions of Homburg and Giering (1996) we analyzed the 14 scales for construct validity using exploratory principal axis factor analysis (EFA), applying the Kaiser criterion (i.e., factors need to obtain Eigenvalues above 1.0). The Kaiser-Meyer-Olkin Measure of Sampling Error (KMO) for the scales, which measures the suitability of the selected variables for the EFA, ranged between 0.79 and 0.58, with two scales, namely, security control and dispositional trust both being slightly below a KMO value of 0.60. According to Bühner (2004) KMO measures between 0.60 and 0.69 represent a moderate data quality and KMO measures between 0.70 and 0.79 signal a mediocre data quality.⁷⁹ Thus, despite the small sample size these EFAs were generally found to be justified. In the following, a separate EFA was computed for each of the 14 scales. However, the EFA was not admissible for the security control and dispositional trust scale due to communalities of variables exceeding 1.0. The results of the other twelve EFAs showed that all other scales were single factored. Nevertheless, although being single factored as hypothesized, the privacy control scale, the Internet risk scale, the site usability scale and the trusting beliefs scale included some items with relatively low factor loadings (between 0.443 and 0.533).

⁷⁸ As a rule of thumb researchers may assume that for samples of $n > 30$, sampling distribution of means will start showing a normal distribution (cf. Bortz, 1999, pp. 93-94, on “Zentrales Grenzwerttheorem”/“Central Limit Theorem”).

⁷⁹ Kaiser-Meyer-Olkin Measure of Sampling Error guidelines according to Bühner (2004): KMO < 0.50 incompatible for exploratory factor analysis, KMO 0.50-0.59 bad, KMO 0.60-0.69 moderate, KMO 0.70-0.79 mediocre, KMO 0.80-0.89 good, KMO > 0.90 very good. A higher KMO value indicates a higher probability that the results of the EFA are no random results.

Based on the findings of the reliability analyses and the EFAs we concluded that adaptations had to be made to four of the scales: namely, the site usability, the privacy control, the Internet risk, and the trusting beliefs scales. The scale for dispositional trust, although facing problems in the EFA, was deemed appropriate since the reliability analysis indicated a quite satisfactory Alpha level (0.77).

As a result, we applied several changes to the questionnaire used in the pilot study. One item was added to the Internet risk scale and one item to the privacy control scale. These two items were taken from the original item pool. Both were items which had relatively good “hit ratios” during the pretests but were excluded from the pilot study questionnaire because they showed lower rankings during the prioritization task in the first pretest. Yet, they were found to be appropriate to be added to the questionnaire and were preferred to the alternative of creating totally new items since these two items had already been evaluated in the pretests. Also one item was added to the trusting beliefs scale from the existing item pool since the integrity-dimension showed minor problems (a relatively low factor loading of one item) in the EFA. Although the overall results of the trusting beliefs scale were acceptable this measure was taken as a “safety net” since this scale covered a key variable in the research model. In addition, one item was added to the site usability scale, yet, it was not taken from the initial item pool but was slightly adapted from the perceived ease of use scale of Davis (1989), which has been extensively tested by MIS scholars in the past. The wording of this adapted item was “This website is easy to use.” (German translation: “Diese Webseite ist einfach zu bedienen.”). Furthermore, based on feedback of some of the pilot study participants, the items number one and two of the privacy control scale were slightly reworded because some pilot study respondents had indicated minor problems in answering them (both items treated the case of the online vendor providing customer information to third parties). This might have occurred due to the stimulus website’s privacy policy which seemed to have confused some of the pilot study participants regarding the case of user-information sharing. Again, as a result of the feedback of two pilot study respondents regarding two of the security items, these two items were analyzed, and minimally modified by adding the adjectives “sufficient”, “comprehensive”, since the content of the original items, although taken from published scales, rather resembled dichotomous items in the eyes of these respondents. Overall, the questionnaire was extended by five items resulting in a total of 55 items representing all the 18 constructs in question.

6.2. Survey Methodology

Building on the positive experiences made during the pilot study we decided to stick to the example online vendor www.bol.de and to employ the stimulus presentation as outlined in section 6.1.3. for the final quantitative survey as well.

With the support of several faculty members at the University of Klagenfurt's School of Economics and Informatics as well as of the university's School of Cultural Sciences we were able to participate in 15 different undergraduate courses in March 2004 to carry out the survey, resulting in a non-random convenience sample of 497 students. Each time the students were confronted with the stimulus website with the help of a laptop, a beamer and a big screen. The website was accessed each time via the Internet, hence, the interaction with the vendor's website was always live. The structure of the multimedia presentation of the vendor's website was highly standardized, rigidly following the structure presented in section 6.1.3. Only the product (i.e., the specific course book) shown to each group was varied and each time adapted to the course content in order to show the respondents a book they could relate to and that they would be relatively more interested in (e.g., in courses about accounting a text book on accounting was presented to the students while in courses on marketing a text book on marketing was selected, etc.). The order of the items in the questionnaire was rotated over the course of the study to prevent priming effects.

The presentation of the vendor's website took about 10 minutes each time. The overall procedure, including administering and recollecting the questionnaires, lasted each time for approximately 25 minutes. Participation in the survey was on a voluntary basis resulting in an average of approximately 50 to 60 percent of students in each of the 15 courses filling out the questionnaire.

6.3. Results

In the following three sections the results of the survey will be presented, starting with the descriptive results and sample characteristics. Afterwards, employing the framework of Anderson and Gerbing (1988), we will first assess and purify the measures with the help of confirmatory factor analysis using LISREL 8.5 to secure convergent and discriminant

validity, followed by the analysis of the hypothesized research models (i.e., the hypotheses testing with structural equation modeling).

6.3.1. Descriptive Results

Of the overall 497 questionnaires gathered in the survey, 343 (69.0 %) were completed by students of business administration, 118 (23.7 %) by students of psychology, and 36 (7.2 %) questionnaires were filled out by MIS students. Regarding the gender distribution, 55.1 % of respondents were female, 43.1 % were male, while 9 participants did not declare their gender in the questionnaire. This distribution was a little bit skewed toward the female population when compared with the actual figures of ORF Mediaresearch (2003) of the Austrian Internet population which indicated that by the end of the year 2003 only 43 % of the users were female. Due to the fact that the sample used for this survey was a convenience sample consisting of students it was not surprising that the vast majority of respondents, namely 79 % were between 20 and 29 years old, while the second largest age group in the sample, with about 12 %, was the group between 30 and 39 years. Again, compared with the figures of Austrian Internet population, our distribution was skewed since only about 20 % of Austrian Internet users fall into the age group between 20 and 29 years while 45 % of Austrian users are aged between 30 and 49 years (ORF Mediaresearch, 2003). Similarly, the level of education of the student sample – at least a senior high school degree – is not representative for Austrian Internet users any more because of the advanced level of Internet penetration (55 % penetration rate). By the end of the year 2003 only 32% of Austrian Internet user had a senior high school or university degree, whereas the rest of the users had lower levels of education (ORF Mediaresearch, 2003). In regard to their level of Internet experience, the majority of the 497 respondents had at least three years of online experience. 56.3 % of the participating students have been using the Internet for three to five years while 29.2 % of the overall respondents were Internet users with six to ten years of online experience. Interestingly, when it came to actual online shopping experiences the figures of our sample were less straightforward. About 29 % of the respondents had never conducted any online purchase. 20.5 % of the students had purchased once or twice on the Internet, while approximately 21 % of the respondents had purchased more than ten times online. Of the 497 students in our sample only 34.3 % had a credit card at their disposal for potential online shopping activities, either their own or of someone else (e.g., parent or partner). 4 % of the

respondents refrained from answering the credit-card availability question in the questionnaire (see table 8).

Demographic variable (n=497)	Frequency	Percent
<i>Gender</i>		
Female	274	55.1
Male	214	43.1
<Missing Value>	9	1.8
<i>Age</i>		
14-19	25	5.0
20-29	392	78.9
30-39	57	11.5
40-49	12	2.4
50-59	4	0.8
>60	3	0.6
<Missing Value>	4	0.8
<i>Highest Level of Education</i>		
Apprenticeship/Undergraduate high school	11	2.2
Graduate high school	442	88.9
Some college	1	0.2
Graduate university/FH/teachers college	37	7.4
<Missing Value>	6	1.2
<i>Students' Major</i>		
Business Administration	343	69.0
Psychology	118	23.7
Information Systems	36	7.2
<i>Internet Experience</i>		
None	4	0.8
< 1 year	7	1.4
1 to 2 years	47	9.5
3 to 5 years	280	56.3
6 to 10 years	145	29.2
> 10 years	9	1.8
<Missing Value>	5	1.0

Table 8. Demographics of the Survey Respondents.

Demographic variable (n=497)	Frequency	Percent
<i>Online Shopping Experience</i>		
Never	145	29.2
1 to 2 times	102	20.5
3 to 10 times	139	28.0
> 10 times	106	21.3
<Missing Value>	5	1.0
<i>Credit Card at Disposal for Online Shopping</i>		
No	262	52.7
Yes, own credit card	165	33.2
Yes, credit card of someone else (e.g. parents)	50	10.1
<Missing value>	20	4.0
<i>Visited www.bol.de in the past</i>		
Never	433	87.1
Once	38	7.6
More then once	26	5.2

Table 8. Demographics of the Survey Respondents (continued).

Since this thesis focuses on *initial* perceptions of an unfamiliar online vendor, the case of prior experience with the stimulus website www.bol.de was measured with a dichotomous item, too. Overall, 87.1% of the 497 students had never been to the particular website before. For the subsequent analyses of the data only these 433 cases were used. For an overview of the sample characteristics see table 8.

6.3.2. Excursus: A Brief Introduction to CFA and SEM with LISREL

Confirmatory factor analysis (CFA) and structural equation modeling (SEM) may be conducted with a number of statistical programs.⁸⁰ Probably the most famous one is LISREL (*L*inear *S*tructural *REL*ationships) created by Jöreskog and Sörbom (e.g., 1996).⁸¹ LISREL is

⁸⁰ Other programs than LISREL are for example EQS, AMOS, SAS-CALIS or PLS-Graph (although the latter one is based upon a slightly different mathematical model and assumptions, see Fornell and Bookstein, 1982).

⁸¹ The LISREL 8.x program is not only capable of computing confirmatory factor analyses and structural equation modeling but also multiple regression analyses, path analyses, economic models, recursive and non-

a second generation data analysis technique and provides a number of advantages compared to first generation data analysis techniques like for example linear regression or variance analysis (Gefen et al., 2000). Contrary to these first generation techniques LISREL allows for the simultaneous analysis of models including manifest and latent variables with measurement error and reciprocal causation and interdependence (Jöreskog and Sörbom, 1996).

The LISREL model, developed by Jöreskog and Sörbom, is composed of the so-called measurement model and the structural equation model. The measurement model “specifies how latent variables or hypothetical constructs depend upon or are indicated by the observed variables [i.e., the manifest items]. It describes the measurement properties (reliabilities and validities) of the observed variables” (Jöreskog and Sörbom, 1996, p. 1). Basically the measurement model represents the confirmatory factor analysis part of LISREL. The structural equation model on the other hand “specifies the causal relationships among the latent variables, describes the causal effects, and assigns the explained and unexplained variance” (Jöreskog and Sörbom, 1996, p. 1). LISREL is capable of computing and analyzing both the measurement model (i.e., the confirmatory factor analysis) and the structural equation model (i.e., the hypotheses testing) simultaneously (cf. e.g. Gefen et al., 2000). In addition, the general LISREL model can be divided into an exogenous side, typically including the independent variables in the model, and an endogenous side, typically including the dependent variables in the research model. The endogenous and the exogenous side are linked through the structural model (Anderson and Gerbing, 1988).

Figure 23 below provides a hypothetical example model, presented in LISREL notation with 12 items and four latent factors. This specific model was simply chosen for explanatory reasons, however it is noteworthy that theoretically the number of items and latent factors can be changed freely by the researcher.

recursive models for both longitudinal and cross-sectional data sets, multigroup analyses as well as analyses based on interval as well as ordinal scaled data (cf. Jöreskog and Sörbom, 1996, p. 1).

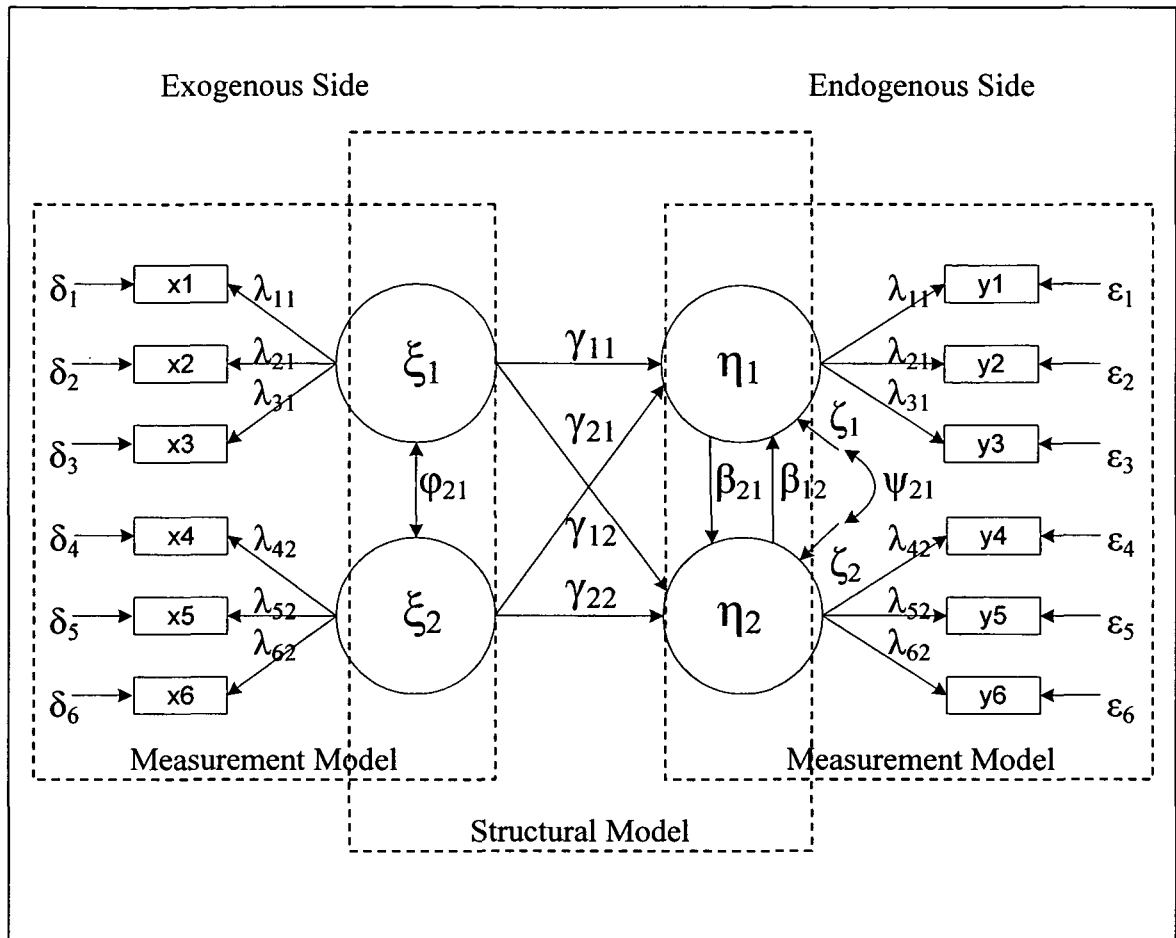


Figure 23: A Hypothetical Example of a LISREL Model

Source: Based on Jöreskog and Sörbom (1996, p. 6) and Bühner (2004, p. 211)

The symbols in the model in figure 23 are defined as follows (Jöreskog and Sörbom, 1996):

- x ... observed variable (item) of the exogenous model side
- y ... observed variable (item) of the endogenous model side
- δ ... measurement error of observed variable of exogenous model side
- ε ... measurement error of observed variable of endogenous model side
- ξ ... latent variable (factor) of exogenous model side
- η ... latent variable (factor) of endogenous model side
- λ ... factor loading of observed variable on latent variable
- φ ... covariance between two exogenous latent variables
- γ ... regression coefficient between an exogenous and an endogenous latent variable
- β ... regression coefficient between two endogenous latent variables
- ζ ... error in the structural relationships/equations for a latent variable
- ψ ... covariance between errors (ζ)

As indicated by the different usage of arrows in the model in figure 23, latent variables (i.e., factors) on the exogenous side can only be linked with each other through bi-directional covariances (i.e., ϕ -paths), while the structural model (i.e., γ -paths) and links between the latent variables on the endogenous side (i.e., β -paths) are unidirectional regression coefficients.

At the beginning of each LISREL analysis the researcher needs to specify a model, based upon solid theoretical considerations and theoretically-derived research hypotheses. In the LISREL program the researcher furthermore has to determine the number of the cases, the number of observed and latent variables and the structure among these variables (i.e., an exact specification of which model parameters are fixed or constrained values and which parameters need to be estimated by the LISREL program). Finally, an empirical data matrix forms the starting point for the analysis. In general, LISREL is capable of analyzing the specified model either based upon a correlation- or a covariance-matrix of the gathered empirical data.⁸² In the subsequent model test the LISREL program evaluates the null hypothesis, which assumes that the theoretically derived pre-specified model (i.e., the hypothesized correlation or covariance matrix Σ) fits/equals the empirical data of the sample (i.e., the empirical correlation or covariance matrix S) (Fornell and Larcker, 1981; Jöreskog and Sörbom, 1996; Homburg and Giering, 1996; Bühner, 2004).

For conducting the model test the LISREL program offers a number of estimation methods: for example Unweighted Least Squares, Generalized Least Squares, Generally Weighted Least Squares, Diagonally Weighted Least Squares and Maximum Likelihood estimation. The selection of the estimation method depends on three factors, namely the given sample size, the distribution of the empirical data, and the scale-level used for measurement (Bühner, 2004). Maximum Likelihood estimation (MLE) (Jöreskog, 1967), the most prominent estimation method, requires multivariate normal-distribution of the data and interval scales to be successfully computed. In marketing research as well as in information systems research MLE is usually employed. MLE is considered to be very efficient (Jöreskog and Sörbom, 1996),

⁸² However, according to Cudeck (1989) applying covariance structure analysis techniques, such as LISREL, to a correlation matrix may potentially result in incorrect results. Especially the test statistics, the standard errors and certain parameter estimates may be affected by this approach which may potentially alter the model under investigation. Therefore, Cudeck suggested that the usage of correlation matrices should be regarded as a special case of covariance structure analysis which always requires justification and that in most cases only the analysis of covariance matrices should be employed (cf. Cudeck, 1989).

may be even used for smaller sample sizes (Bühner, 2004, p. 201, suggests $n > 100$) and is considered to be quite robust toward violations of the multivariate normal-distribution assumption.

The output of the analysis and the appropriateness of the investigated model in regard to the empirical data can be interpreted with the help of several categories of information provided by the LISREL program: 1) the standard errors and t-values for all estimated parameters, 2) the measures of accounted variation (the squared multiple correlation of each observed variable, which is the individual item reliability, and the squared multiple correlation for each structural equation), 3) the goodness-of-fit measures (χ^2 -test and several fit indices such as the GFI, AGFI, SRMR, RMSEA, CFI or NFI) 4) the residuals, and 5) the modification indices calculated for the model (cf. Jöreskog and Sörbom, 1996, pp. 25-32).

6.3.3. Measure Purification

Although the LISREL program is capable of estimating the measurement and the structural model simultaneously it is generally advised to conduct a two-step modeling approach in which the estimation and potential re-specification of the measurement model should precede the testing of the structural model (cf. Anderson and Gerbing, 1988; Straub, 1989). This approach is considered to help overcoming the problem that in simultaneous estimation of the measurement and structural model underlying measurement problems will be masked and may go uncovered (Segars, 1997). Following the work of Campbell and Fiske (1959) on convergent and discriminant validity of measurement, Anderson and Gerbring (1988) demand that the researcher first assesses the quality of the measurement model focusing on the assurance of construct validity of all scales.

The following confirmatory measurement model specifies the relations (i.e., loadings) of the observed variables toward their hypothesized, underlying constructs and allows the latent variables to intercorrelate freely (see also Anderson and Gerbing, 1988).

Einwiller (2002) furthermore suggested to formulate a measurement hypothesis which in our case may be defined as:

H_{m1}: The latent variables perceived website design, perceived website usability, perceived information quality of the website, perceived privacy control, perceived security control, perceived situational normality, perceived structural assurance, dispositional trust, perceived Internet risk, trusting beliefs about the online vendor, trusting intention to depend on the online vendor, perceived risk of transaction with the online vendor, purchase intention, return intention, satisfaction with the vendor's terms, price satisfaction, perceived switching costs, perceived product simplicity are each in itself one-dimensional and distinct from the other latent variables, i.e., each latent variable is measured by other observed variables.

For the assessment of the measurement submodel we followed guidelines laid out by Churchill (1979), Bagozzi (1980), Fornell and Larcker (1981), Anderson and Gerbing (1988), Homburg and Giering (1996), and Segars (1997). Drawing from the works of these authors several techniques for the evaluation of the measurement model were used. For all of the following statistical tests (i.e., the evaluation of the measurement model) we only used the cases which were not familiar with the example online vendor www.bol.de, which initially resulted in a data-set of 433 cases. After computing a covariance matrix with listwise exclusion of missing values we finally ended up with a covariance matrix resulting from 414 usable cases for the LISREL analysis. In other words, the ratio between the investigated items and the valid cases was 1:7.5 and clearly exceeding the recommended minimum ratio of 1:5 (Bhattacharjee, 2002, p. 229; see also the discussion on statistical power in section 6.1.3.).

In an initial step an analysis of all 55 items regarding their suitability for LISREL (i.e., the confirmatory factor analysis and structural equation modeling) was conducted by investigating the skewness and kurtosis of all items, which is recommended not to exceed the +2 to -2 range (Bhattacharjee, 2002). The analysis revealed that indeed all items satisfied this threshold (see appendix C). An additional investigation of the histograms of all items also suggested that the data were relatively normally distributed.⁸³ Hence, the data seemed suitable for the LISREL approach.

⁸³ A Kolmogorov-Smirnov test (KS), such as proposed by Gefen (2002b), which may tests the data for normal distribution, was not computed since KS is quite sensible in regard to sample size. For bigger samples, e.g. samples >120, the KS test will usually suggest that the items deviate significantly from a normal distribution, even if the histogram would indicate that the items are normally distributed.

6.3.3.1. Reliability Analysis with Cronbach's Alpha

Subsequently, as widely suggested in the literature (e.g., Churchill, 1979; Homburg and Giering, 1996), we started the measure purification with an analysis of the reliabilities of the hypothesized scales computing Cronbach's Alpha. Contrary to the pilot study, this time all scales exceeded Nunnally's recommended reliability threshold of 0.70 (Nunnally, 1967), which signals that the item-modifications and the adding of additional items as a result of the pilot study findings had worked. Taking a closer look at the 55 items and the theorized scales indicated following the Cronbach's Alpha values: site design 0.86, site usability 0.77, information quality 0.76, privacy control 0.85, security control 0.79, situational normality 0.71, structural assurances 0.83, Internet risk 0.87, dispositional trust 0.76, trusting beliefs 0.90, trusting intention 0.86, risk of transaction with vendor 0.85, purchase intention 0.92, and return intention 0.93. No Cronbach's Alpha value was available for the four single-item control variables since this value may only be computed for multi-item scales. An additional item-to-total correlation analysis pointed to several problematic items in four of the scales. According to the item-to-total correlation the site design scale could be improved up to an Alpha of 0.88 if the first site design item would be deleted from the scale. Similarly, the data suggested that the site usability scale would increase marginally if the fourth usability item would be omitted from the usability scale. Again, deleting the first item of the Security Control scale would lead to a higher Alpha of 0.84, and deletion of the third Situational Normality item would improve the reliability of this scale significantly from 0.71 up to 0.76. Hence, these four items deemed to be problematic and were to be further investigated in the subsequent analyses. The item-to-total correlation analysis further indicated that the reliability levels of all other scales would not improve if any items would be deleted from their scales.

6.3.3.2. Exploratory Factor Analysis

In the next step the data were evaluated with the help of exploratory principal axis factor analyses (EFA), both at the individual scale-level and for all items of the instrument together. The major aims during this stage of testing were 1) to ensure unidimensionality of each sub-scale, and 2) to assess if all the items loaded on their hypothesized latent factors. Again, like for the pilot study data we checked for the convergent validity of each scale by computing an EFA. The analysis showed that all hypothesized sub-scales were itself unidimensional. The KMO levels ranged between 0.66 (i.e., moderate) for the security control scale to a value of

0.90 (i.e., very good) for the trusting beliefs scale, with most scales reaching a KMO of ≥ 0.70 (i.e., mediocre). Hence, not surprisingly, conducting the EFAs was found to be justified in all cases due to the relatively large sample size. The factor loadings of the items of the individual scales were quite satisfactory. Overall, the lowest loading was 0.552 for the first item of the security control scale, while most other loadings ranged between 0.600 and 0.700.

Following the analysis of the individual scales a simultaneous principal axis EFA for all 55 items, including the four control variables, was conducted to check for convergent validity of the scales. The Kaiser criterion was once more employed (i.e., factors need to obtain Eigenvalues above 1.0 to be taken into account) and the common cut-off value of 0.400 was used (i.e., only loadings higher than 0.400 are displayed in the output matrix since loadings below this value should rather be neglected or only be interpreted with caution). For the rotation of the data in the EFA the statistical package SPSS provides several different rotation methods, oblique as well as orthogonal. However, according to Conway and Huffcutt (2003) who conducted a review and critical assessment of EFA usage in the organizational research literature, an oblique rotation (e.g., Direct Oblimin rotation or Promax rotation, which allow latent factors to be correlated) should be used rather than an orthogonal rotation (e.g., Varimax rotation, which forces factors to be uncorrelated) if the researcher investigates latent constructs. Typically, an oblique rotation better matches reality, because in most cases factors will be correlated, and is likely to produce simpler and more interpretable solutions (Conway and Huffcutt, 2003). Following Conway and Huffcutt's findings we decided to use the Direct Oblimin rotation for the data. The Direct Oblimin rotation finds "the oblique solution balancing the criteria that (a) each variable be relatively unifactorial (ideally one high loading and other loadings near zero) and (b) the covariance between elements on factors be minimized" (Conway and Huffcutt, 2003, p. 153). For the result of the Principal Axis Exploratory Factor Analysis with Direct Oblimin Rotation see table 9. The KMO value for this EFA was 0.91 which indicates a very good applicability.

Item	Factor								
	Site Design	Site Usability	Informat. Quality	Privacy	Security	Situation. Normality	Struct. Assur.	Internet Risk	Disp. Trust
Site Design1	0,600								
Site Design2	0,864								
Site Design3	0,855								
Site Usability1		-0,709							
Site Usability2		-0,773							
Site Usability3		-0,580							
Site Usability4*		-0,289							
Infoquality1			0,651						
Infoquality2			0,563						
Infoquality3			0,404						
Infoquality4			0,464						
Privacy1				0,704					
Privacy2				0,756					
Privacy3				0,675					
Privacy4				0,577					
Security1					-0,544				
Security2					-0,559				
Security3					-0,555				
Situational Normality1						0,755			
Situational Normality2						0,713			
Situational Normality3						0,526			
Structural Assurances1							0,619		
Structural Assurances2							0,730		
Structural Assurances3							0,697		
Internet Risk1								0,808	
Internet Risk2								0,697	
Internet Risk3								0,704	
Internet Risk4								0,805	
Dispositional trust1									0,676
Dispositional trust2									0,753
Dispositional trust3									0,743

Table 9: Exploratory Factor Analysis of Measurement Model.

Item	Factor			
	Trusting Beliefs	Trusting Intention	Risk of Transaction	Intention to Purchase and to Return
Trusting Belief Benevolence1	0,644			
Trusting Belief Benevolence2	0,690			
Trusting Belief Integrity1	0,696			
Trusting Belief Integrity2	0,643			
Trusting Belief Integrity3	0,706			
Trusting Belief Competence1	0,601			
Trusting Belief Competence2	0,502			
Trusting Intention1		0,576		
Trusting Intention2		0,513		
Trusting Intention3		0,684		
Trusting Intention4		0,514		
Risk of Transaction1			0,526	
Risk of Transaction2			0,795	
Risk of Transaction3			0,664	
Purchase intention1				-0.672
Purchase intention2				-0.728
Purchase intention3				-0.703
Intention to return1				-0.865
Intention to return2				-0.886
Intention to return3				-0.756
Price Satisfaction*				-0,206
Satisfaction with terms*		0,192		
Product simplicity*		0,191		
Switching costs*				0,368

* Items with loadings printed in gray font were not exceeding the cut-off value of 0.400 but are included in the table for reasons of transparency.

Table 9: Exploratory Factor Analysis of Measurement Model (continued).⁸⁴

⁸⁴ In addition, although not recommended by Conway and Huffcutt (2003) for this kind of research question, we also computed an EFA with Varimax rotation for the data which is the common form of rotation used in EFAs in online trust research (see chapter three). This approach resulted in quite similar factor loadings, compared to the Direct Oblimin rotation, and also suggested that the two factors purchase intention and return intention collapsed into one factor. Furthermore, the EFA with Varimax rotation indicated problems with the factor trusting intention. With orthogonal Varimax rotation the items of the trusting intention scale loaded on the factor trusting intention but also marginally on trusting beliefs (namely, the trusting intention items two and four) and on the collapsed factor intention to purchase/return (namely the trusting intention items one and three). Varimax rotation also showed that the second security control item additionally cross-loaded with 0.411 on the privacy

The results of the EFA pointed to several problematic issues (see table 9). The most critical finding was that according to the EFA the two scales for purchase intention and intention to return collapsed into one combined factor, with relatively high loadings of all six items. In addition, the fourth item of the site usability scale – like in the preceding reliability analysis - once more turned out to be problematic and did not exceed the factor loading cut-off value of 0.400. Also the Information Quality scale, although having all four items loading on the right factor, only marginally exceeded the cut-off value of 0.400 with the third and the fourth information quality item. Furthermore, the four single-item control factors (satisfaction with terms, price satisfaction, switching costs, product simplicity) did not converge in the EFA but their items only showed minor loadings (below 0.400) on the factors trusting intention and the combined factor purchase/return intention.

While Homburg and Giering (1996) suggest that the EFA and the initial reliability analysis should be used to exclude problematic items already before conducting the confirmatory analysis we decided not to drop any item before computing the confirmatory factor analysis (CFA) with LISREL, since CFA is a more powerful analytical tool than EFA or reliability analysis with Cronbach's Alpha, and our experience suggests that sometimes CFA can lead to different outcomes. However, moving on to the next step in the measurement purification, the CFA, we kept the problematic items and scales strongly in mind and decided to assess the discriminant validity of the purchase intention and return intention scale as well as the internal consistency and convergent validity of the information quality scale and the suspect items of the site usability, site design, security control and situational normality scales carefully with LISREL.

6.3.3.3. Confirmatory Factor Analysis

Building on the suggested paradigms by Anderson and Gerbing (1988), Homburg and Giering (1996) and Segars (1997) we proceeded with the measure purification by estimating a CFA, using LISREL 8.5. In the CFA a number of different criteria can be used to assess the quality of the measurement instrument including potential problems and solutions. First of all the value of the factor loadings of all the items need to be assessed. However, the literature is not completely clear on how high the threshold should be set. According to Homburg and Giering

control factor. Again, the four control items did not form additional (four) factors either but had loadings below 0.400, just like reported in table 9.

(1996, p. 12) the loadings should exceed the threshold of ≥ 0.40 while Einwiller (2002, p. 171) suggest a minimum factor loading of ≥ 0.50 if the researcher has obtained bigger data-sets (valid cases ≥ 400). A quite conservative threshold is provided by Bhattacharjee (2002), based upon Fornell and Larcker's work (1981), who recommends a minimum factor loading of 0.70. Subsequently, faced with these quite different loading thresholds we decided to apply a threshold of 0.60 for our measurement model. In addition, to the factor loadings also the individual item reliabilities need to be assessed. These values are computed automatically by the LISREL program and should exceed the recommended threshold of 0.40 (Homburg and Giering, 1996; Einwiller, 2002). Following Fornell and Larcker (1981, p. 45) the reliability of each factor (i.e., the composite factor reliability) was calculated to assess the convergent validity and internal consistency of the scales. This measure is not provided by LISREL but can easily be computed by the square of the sum of the standardized factor loadings of all items of the scale divided by the square of the sum of the standardized factor loadings of all items of the scale plus the sum of the measurement error of all items of the scale (Fornell and Larcker, 1981, p. 45). Again, the recommended threshold for the composite factor reliability varies in the literature from ≥ 0.60 (Bagozzi and Yi, 1988; Homburg and Giering, 1996; Einwiller, 2002) to ≥ 0.70 (Segars, 1997) up to ≥ 0.80 (Bhattacharjee, 2002). In the following we applied a "compromise" threshold of ≥ 0.70 for the factor reliability, also in order to stick to the recommendations of Nunnally (1967) and to the threshold which we applied for the Cronbach's Alpha reliability analyses. Fornell and Larcker (1981) also suggested another measure for the evaluation of the validity of the scales, namely the average variance extracted (AVE) for each factor, which shows the amount of variance which is captured by the given factor in relation to the amount of variance caused by measurement error. Since LISREL is not providing the AVE of each factor automatically this measure needed to be calculated manually, too, following the formula of Fornell and Larcker (1981, p. 45). AVE of a scale/factor is the result of the sum of all individual squared standardized factor loadings of the scale's items divided by the sum of individual squared standardized factor loadings of the scale's items plus the sum of the measurement error of all items of the scale. Fornell and Larcker (1981, p. 46) recommend that the AVE of a factor should exceed 0.50 because if it is less then "the variance due to measurement error is larger than the variance captured by the construct". Contrary to the other thresholds mentioned above there is widespread agreement in the literature on the 0.50 AVE threshold (cf. Bagozzi and Yi, 1988; Homburg and Giering, 1996; Segars, 1997; Bhattacharjee, 2002; Einwiller, 2002).

Furthermore, the χ^2 -test and the numerous goodness-of-fit indices provided by the LISREL program also need to be evaluated to assess the quality of the (measurement) model. While the result of the χ^2 -test should be non-significant (i.e., p-value ≥ 0.05) if the hypothesized model is true, this criterion is very hard to satisfy because the χ^2 -test is very sensitive to sample size (the χ^2 -test tends to reject models if the sample size is large, even if the models is true) and deviations of the data from multivariate normal-distribution (cf. e.g., Jöreskog and Sörbom, 1996; Bagozzi and Yi, 1988). Therefore, the χ^2 value should not be used as a test statistic but rather as a goodness-of-fit measure which signals a comparatively good model fit if the χ^2 value is small and a comparatively bad model fit if the χ^2 value is large (Jöreskog and Sörbom, 1996). Regarding other fit indices provided by LISREL, e.g. the GFI (Goodness-of-Fit Index), the AGFI (Adjusted Goodness-of-Fit Index), the CFI (Comparative Fit Index), the IFI (Incremental Fit Index), the NFI (Normed Fit Index), the NNFI (Non-Normed Fit Index), the SRMR (Standardized Root Mean Square Residual), and the RMSEA (Root Mean Square Error of Approximation) relatively accepted thresholds are reported in the literature. Homburg and Giering (1996, p. 13) propose a threshold of ≥ 0.90 for the GFI and the AGFI for the evaluation of a model (contrary, Suh and Han, 2002, propose that a cut-off value ≥ 0.80 for the GFI and AGFI already represent an acceptable model fit). For the CFI, the NFI, the NNFI and the IFI usually a threshold of ≥ 0.90 is recommended (e.g. Suh and Han, 2002; Einwiller, 2002). The SRMR should be ≤ 0.11 (Bühner, 2004) and the RMSEA is generally assumed to be as small as possible and not to exceed 0.05 (Hancock and Freeman 2001; Einwiller, 2002). Homburg and Giering (1996) also recommend to calculate the χ^2 /d.f. ratio which should be ≤ 3 for models with a good model fit (for an overview of the fit indices see table 10).

Criterion	Recommended Threshold	Source
χ^2 test	χ^2 value at $p \geq 0.05$	Jöreskog and Sörbom (1996)
GFI	≥ 0.90 (≥ 0.80)	Homburg and Giering (1996) (Suh and Han, 2002)
AGFI	≥ 0.90 (≥ 0.80)	Homburg and Giering (1996) (Suh and Han, 2002)
CFI	≥ 0.90	Bentler (1990), Bühner (2004)
IFI	≥ 0.90	Einwiller (2002)
NFI	≥ 0.90	Bentler (1990), Suh and Han (2002)
NNFI	≥ 0.90	Einwiller (2002)
SRMR	≤ 0.11	Bühner (2004)
RMSEA	≤ 0.05	Jöreskog (1993), Hancock and Freeman (2001)
χ^2 /d.f.	≤ 3	Homburg and Giering (1996), Einwiller (2002)

Table 10: Model Fit Indices and their Thresholds for LISREL Analyses.

The initial measurement model for all 55 items was modeled fully exogenously with allowing the 18 factors to freely correlate with each other following the suggestions of Anderson and Gerbing (1988) (see figure 24 representing the LISREL output graph). Since the four control variables were chosen to be single-item constructs their measurement error in the model was constrained at zero, following the recommendations for this special case as laid out in the LISREL 8.5 program help (see help topic “Specification of Latent Variables with Single Indicators”). The model was estimated with ML estimation, converged without problems and resulted in a rather poor to mediocre model fit ($\chi^2_{1281}=2404.82$, $p=0.001$, GFI=0.83, AGFI=0.79, CFI=0.98, NFI=0.95, SRMR=0.047, RMSEA=0.046, $\chi^2/d.f.=1.9$) and suggested that improvements could still be made to the measurement model. An overview of the factor loadings of all items, their t-values, the individual item reliability, the composite/factor reliability and the AVA for each factor is presented in table 11.

Keeping in mind the problematic items and scales reported by the Cronbach’s Alpha reliability analyses and the EFA (see sections 6.3.3.1. and 6.3.3.2), we investigated the path diagram and the LISREL output file, especially the modification indices (Sörbom, 1989) and standardized residuals (for an overview of the factor loadings, t-values, reliabilities, and AVE see table 11). Not surprisingly the fourth site usability item, with a factor loading of 0.55 and an item reliability of 0.31, did not exceed the recommended thresholds and was eliminated from the scale as well as the third situational normality item which had a factor loading of 0.59 and an item reliability of 0.32. After each item elimination the modified measurement model was re-estimated and the remaining items, the overall fit indices and modification indices and residuals were investigated again. As predicted by the initial Cronbach’s Alpha reliability analysis and the item-to-total correlation analysis, reported above, the first security control item also did only reach an item reliability of 0.35 and was eliminated, just like the first site design item, for which, although having a relatively good factor loading and sufficient item reliability, the modification indices signaled a number of cross-loadings on other factors in the measurement model. The first item of the information quality scale turned out to have a lower item reliability, too. It did not pass the 0.40 threshold, although only being slightly below with an item reliability of 0.37 and having an acceptable factor loading of 0.61. Since this item covered an essential aspect of information quality, namely the amount of product information provided on the website, we did not eliminate this item from the scale as the loss of this item would have significantly distorted the conceptual meaning of this construct.

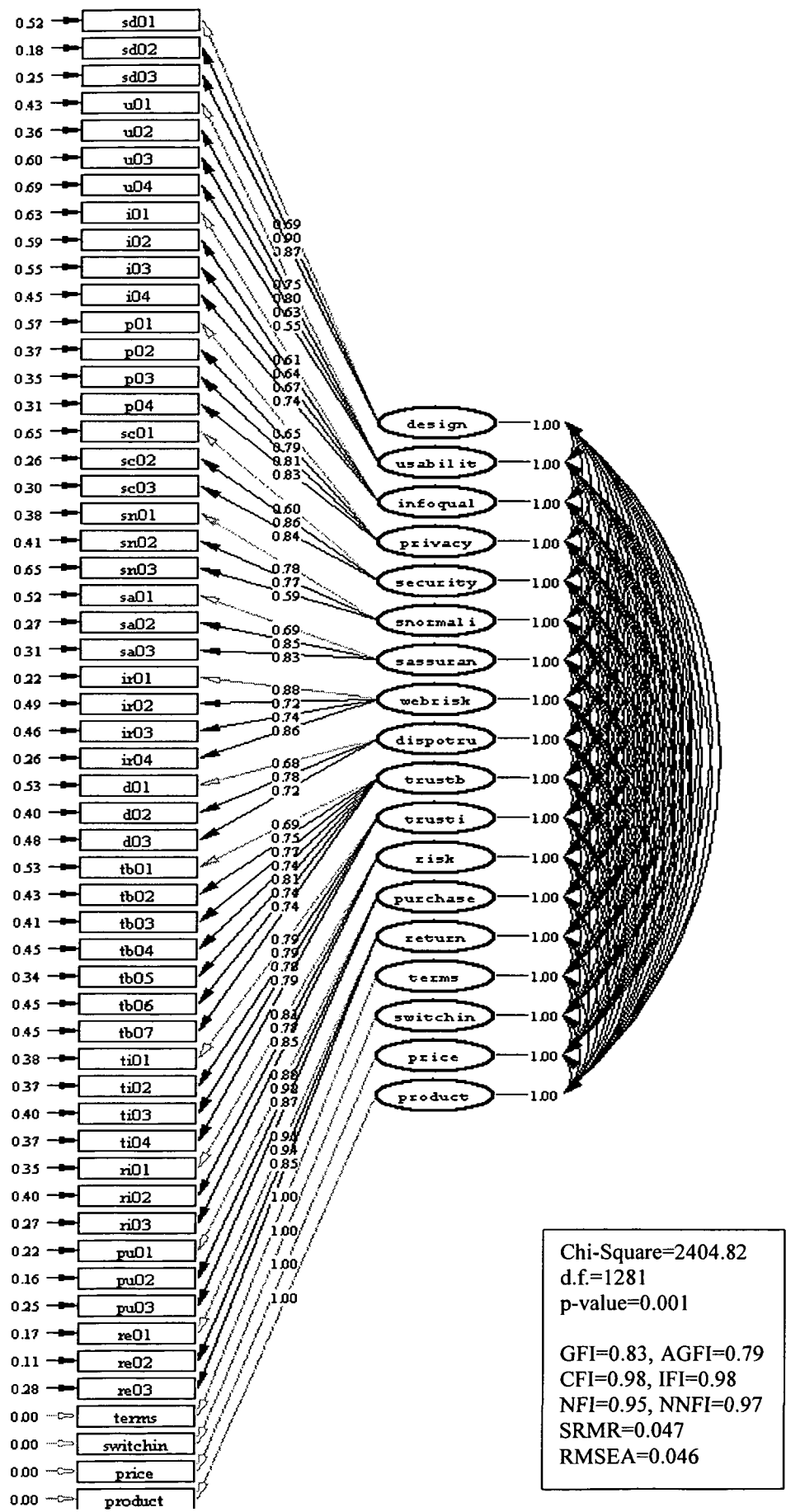


Figure 24: Initial (Fully Exogenous) Measurement Model.

Factor	Item	Loading	t-value	Measurement error	Item reliability	Composite reliability	AVE
Site Design	Sd01	0.69	-	0.52	0.48	0.86	0.68
	Sd02	0.90	15.84	0.18	0.82		
	Sd03	0.87	15.64	0.25	0.75		
Site Usability	U01	0.75	-	0.43	0.57	0.78	0.48
	U02	0.80	14.55	0.36	0.64		
	U03	0.63	11.83	0.60	0.40		
	U04	0.55	10.39	0.69	0.31		
Info. Quality	I01	0.61	-	0.63	0.37	0.76	0.44
	I02	0.64	10.07	0.59	0.41		
	I03	0.67	10.41	0.55	0.45		
	I04	0.74	11.07	0.45	0.55		
Privacy Control	P01	0.65	-	0.57	0.43	0.86	0.60
	P02	0.79	13.53	0.37	0.63		
	P03	0.81	13.70	0.35	0.65		
	P04	0.83	14.03	0.31	0.69		
Security Control	Sc01	0.60	-	0.65	0.35	0.81	0.60
	Sc02	0.86	12.50	0.26	0.74		
	Sc03	0.84	12.37	0.30	0.70		
Situat. Normality	Sn01	0.78	-	0.38	0.62	0.76	0.52
	Sn02	0.77	12.78	0.41	0.59		
	Sn03	0.59	10.66	0.65	0.32		
Struct. Assurances	Sa01	0.69	-	0.52	0.48	0.84	0.63
	Sa02	0.85	14.99	0.27	0.73		
	Sa03	0.83	14.71	0.31	0.69		
Internet Risk	Ir01	0.88	-	0.22	0.78	0.88	0.64
	Ir02	0.72	16.80	0.49	0.51		
	Ir03	0.74	17.45	0.46	0.54		
	Ir04	0.86	22.04	0.26	0.74		
Dispositional Trust	D01	0.68	-	0.53	0.47	0.77	0.53
	D02	0.78	11.32	0.40	0.60		
	D03	0.72	11.19	0.48	0.52		

Table 11: Confirmatory Factor Analysis Results of Initial Measurement Model.

Factor	Item	Loading	t-value	Mesurement error	Item reliability	Composite reliability	AVE
Trusting Beliefs	Tbb01	0.69	-	0.53	0.47	0.90	0.56
	Tbb02	0.75	14.09	0.43	0.57		
	Tbi03	0.77	14.40	0.41	0.59		
	Tbi04	0.74	13.88	0.45	0.55		
	Tbi05	0.81	15.09	0.34	0.66		
	Tbc06	0.74	13.84	0.45	0.55		
	Tbc07	0.74	13.90	0.45	0.55		
Trusting Intention	Ti01	0.79	-	0.38	0.62	0.87	0.62
	Ti02	0.79	17.09	0.37	0.63		
	Ti03	0.78	16.73	0.40	0.60		
	Ti04	0.79	17.11	0.37	0.63		
Risk of Transaction	Ri01	0.81	-	0.35	0.65	0.85	0.66
	Ri02	0.77	16.42	0.40	0.60		
	Ri03	0.85	18.13	0.27	0.73		
Purchase Intention	Pu01	0.88	-	0.22	0.78	0.92	0.79
	Pu02	0.92	27.27	0.16	0.84		
	Pu03	0.87	24.52	0.25	0.75		
Return Intention	Re01	0.91	-	0.17	0.83	0.93	0.81
	Re02	0.94	32.16	0.11	0.89		
	Re03	0.85	25.30	0.28	0.72		
Satisfaction with terms	Terms	1.00	-	0.00	1.00	1.00	1.00
Switching Costs	Switch	1.00	-	0.00	1.00	1.00	1.00
Satisfaction with Price	Price	1.00	-	0.00	1.00	1.00	1.00
Product Simplicity	Product	1.00	-	0.00	1.00	1.00	1.00

Table 11: Confirmatory Factor Analysis Results from Initial Measurement Model (continued).

However, as tradeoff the reliability of this particular item (i.e., the first information quality item) was relatively low and the AVE for the construct information quality did not reach the recommended 0.50 level but remained at 0.44. Also the site usability scale turned out to have an AVE of 0.48, thus, slightly below the recommended minimum value of 0.50, but as the model was still in the process of refinement no immediate action was taken at this point.

In addition, the modification indices and the standardized residuals further indicated considerable cross-loadings for the fourth privacy control item, the third Internet risk item, the

first and seventh trusting beliefs item, the first and third trusting intention item, the second risk of transaction item, the first purchase intention item and the second item of the Intention to return scale. Step by step, these items were all eliminated from their scales and after each elimination the measurement model was re-estimated with MLE and the results and fit indices and other criteria were investigated once more.

Before eliminating the ambiguous items from the initial scale we did not only rely on the statistical findings but investigated each problematic item in regard to its wording and potential misleading words or meanings. This approach is necessary as confirmatory factor analysis and LISREL should build on solid theory and theoretical meaningfulness (cf. e.g., Segars, 1997). Most of the time the item wordings were found to include potentially misleading cues. For example the fourth privacy control item covered the aspect of a “*clear privacy policy*” which resulted in a cross-loading on the factor information quality which covers aspects of the amount and the quality of web-site information. Also the first security control item included the wording “*uses common encryption methods*”, resulting in a cross-loading on the situational normality scale which covers the perception of the situation as being normal and customary. The first item of the site design scale asked for the perception of the “*professionalism*” of the visual appearance of the website which once more resulted in cross-loadings on the factors site usability and situational normality which also include notions of professionalism. At other times we suspected the applied methodology as potential sources of unexpected cross-loadings.

As a result of the refinements and purification, the initial measurement instrument of 55 items was reduced down to 42 items for the final, refined measurement model (see figure 25 and table 12). This final measurement model reached and/or exceeded almost all recommended thresholds with a GFI of 0.90, a CFI of 0.99, RMSEA of 0.035 and SRMR of 0.034 and a $\chi^2/d.f.$ ratio of 1.5. The IFI, NFI and NNFI also all exceeded their minimum thresholds. Only the AGFI remained slightly below the recommended minimum value of 0.90, yet several authors report that the a AGFI threshold of ≥ 0.90 is a very conservative criterion (e.g. Bagozzi and Yi, 1988) and that values above 0.80 are already indications of an acceptable fit (Suh and Han, 2002).

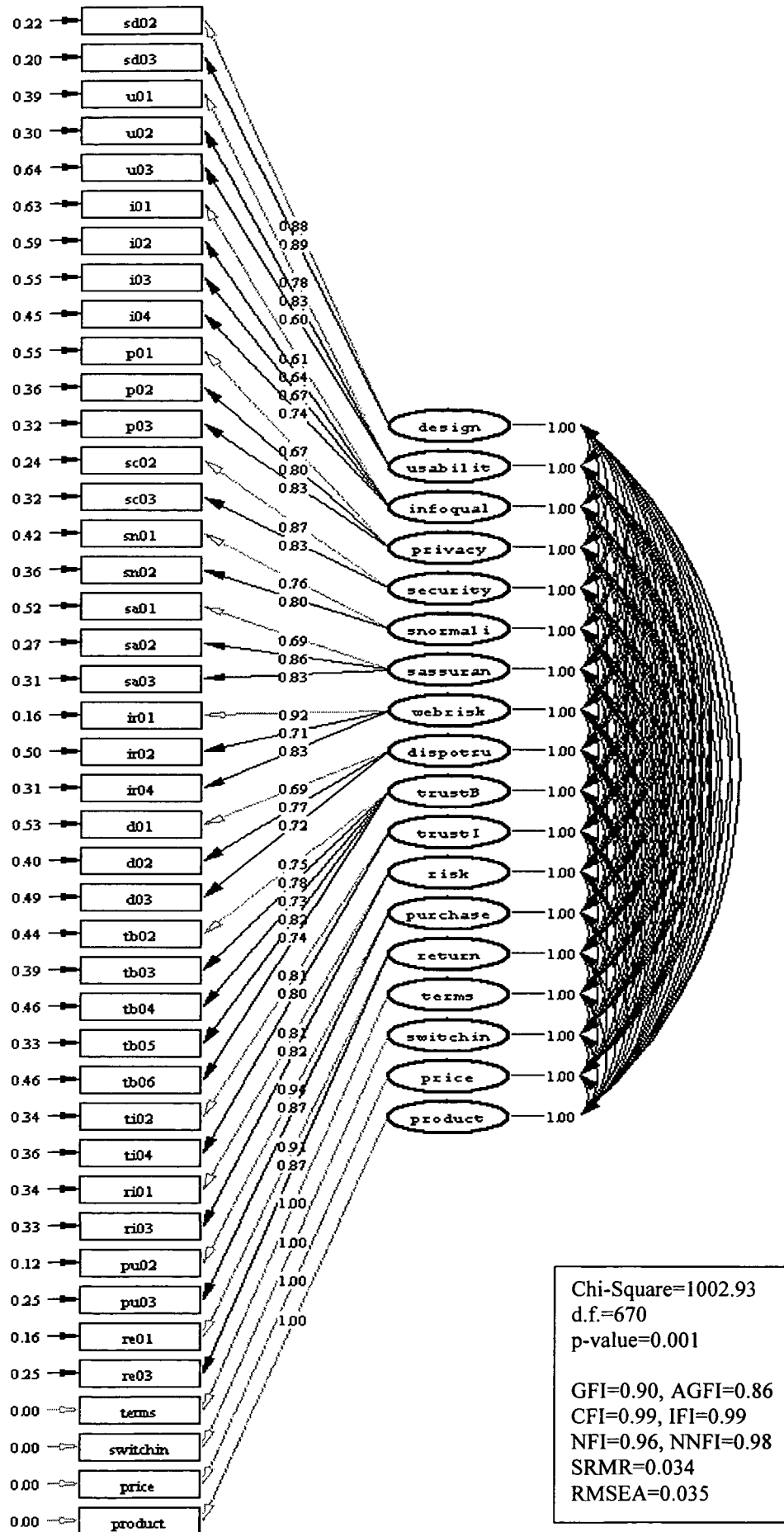


Figure 25: Final (Fully Exogenous) Measurement Model.

Factor	Item	Loading	t-value	Measurement error	Item reliability	Composite reliability	AVE
Site Design	Sd02	0.88	-	0.18	0.78	0.88	0.78
	Sd03	0.89	15.81	0.25	0.80		
Site Usability	U01	0.78	-	0.43	0.61	0.78	0.54
	U02	0.83	14.85	0.36	0.70		
	U03	0.60	11.43	0.60	0.36		
Info. Quality	I01	0.61	-	0.63	0.37	0.76	0.44
	I02	0.64	10.07	0.59	0.41		
	I03	0.67	10.39	0.55	0.45		
	I04	0.74	11.01	0.45	0.55		
Privacy Control	P01	0.67	-	0.57	0.45	0.80	0.58
	P02	0.80	13.30	0.37	0.64		
	P03	0.83	13.54	0.35	0.68		
Security Control	Sc02	0.87	-	0.26	0.76	0.84	0.72
	Sc03	0.83	17.42	0.30	0.68		
Situat. Normality	Sn01	0.76	-	0.38	0.58	0.75	0.61
	Sn02	0.80	10.66	0.41	0.64		
Struct. Assurances	Sa01	0.69	-	0.52	0.48	0.84	0.63
	Sa02	0.86	14.96	0.27	0.73		
	Sa03	0.83	14.69	0.31	0.69		
Internet Risk	Ir01	0.92	-	0.22	0.84	0.86	0.68
	Ir02	0.71	16.56	0.49	0.50		
	Ir04	0.83	20.51	0.26	0.69		
Dispositional Trust	D01	0.69	-	0.53	0.47	0.77	0.53
	D02	0.77	11.39	0.40	0.60		
	D03	0.72	11.23	0.48	0.51		
Trusting Beliefs	Tbb02	0.75	-	0.44	0.56	0.88	0.58
	Tbi03	0.78	15.81	0.39	0.61		
	Tbi04	0.73	14.76	0.46	0.54		
	Tbi05	0.82	16.65	0.33	0.67		
	Tbc06	0.74	14.84	0.46	0.54		
Trusting Intention	Ti02	0.81	-	0.34	0.66	0.79	0.65
	Ti04	0.80	16.51	0.36	0.64		
Risk of Transaction	Ri01	0.81	-	0.34	0.66	0.80	0.66
	Ri03	0.82	15.89	0.33	0.67		

Table 12: Confirmatory Factor Analysis Results of Refined Measurement Model.

Factor	Item	Loading	t-value	Measurement error	Item reliability	Composite reliability	AVE
Purchase Intention	Pu02	0.94	-	0.12	0.88	0.90	0.84
	Pu03	0.87	23.53	0.25	0.75		
Return Intention	Re01	0.91	-	0.16	0.84	0.89	0.79
	Re03	0.87	22.55	0.25	0.75		
Satisfaction with terms	Terms	1.00	-	0.00	1.00	1.00	1.00
Switching costs	Switch	1.00	-	0.00	1.00	1.00	1.00
Satisfaction with price	Price	1.00	-	0.00	1.00	1.00	1.00
Product simplicity	Product	1.00	-	0.00	1.00	1.00	1.00

Table 12: Confirmatory Factor Analysis Results of Refined Measurement Model (continued).

The χ^2 -test of the final measurement model turned again out to be significant at $p=0.001$ which doesn't satisfy the χ^2 threshold but as discussed above, the χ^2 -test is very sensitive to sample size and already to slight deviations from multivariate normal-distribution and should therefore rather not be used for as model test statistic (Jöreskog and Sörbom, 1996). Overall, the evaluation criteria for the final measurement model suggested that the theoretical measurement model fit the empirical data quite well, providing support for the measurement hypothesis H_{m1} . However, before continuing with the structural equation modeling the discriminant validity of all the scales needed to be investigated at first, especially due to the problematic findings of the EFA (see table 9). To test the discriminant validity of the scales Anderson and Gerbing (1988), Homburg and Giering (1996) and Segars (1997) suggest to estimate a series of two factor structural models for all the included factors in the model. In this pairwise analysis the correlation parameter $\phi(2,1)$ between the given two factors (ξ_1, ξ_2) (see also figure 23) is at first freely estimated, and then in a second estimation of the model the correlation parameter is fixed at the value 1.0 which means that the two factors would be perfectly correlated and actually represent one single factor. Afterwards the χ^2 values of both models need to be compared with each other. A significantly lower χ^2 value (χ^2 difference >3.841 at 1 degree of freedom) and CFI value (CFI difference >0.02) for the unconstrained model with the freely estimated correlation parameter indicates a better fit of the unconstrained, two factor model and signals that the two factors are discriminant from each other (cf. Anderson and Gerbing, 1988; Segars, 1997; Homburg and Giering, 1996; Vandenberg and Lance, 2000; Suh and Han, 2002). In the following, we have computed pairwise models for all the 14 multi-item factors in the research model including only the items left in the final, purified measurement model. All factors were found to be discriminant

from each other (Table 13 reports the results of these pairwise model tests. Only comparisons with correlations higher than 0.50 are reported, i.e., all other factors not reported in table 13 were also found to be discriminant from each other, but correlated lower than 0.50 with each other).

	Model with ϕ fixed at 1.00			Correlation coefficient	Model with freely estimated ϕ			χ^2 difference*
	d.f.	χ^2	CFI		d.f.	χ^2	CFI	
Trusting beliefs – Trusting intention	14	108.38	0.96	0.77	13	38.89	0.99	69.49
Trusting intention – Purchase intention	2	132.34	0.79	0.55	1	1.49	1.00	130.85
Trusting intention – Return intention	2	131.96	0.79	0.56	1	2.96	1.00	129.00
Trusting intention – Risk of Transact.	2	113.69	0.84	-0.65	1	2.39	1.00	111.30
Trusting beliefs – Risk of Transact.	14	181.19	0.90	-0.50	13	27.78	0.99	153.41
Purchase intention – Return intention	2	154.72	0.88	0.82	1	4.01	1.00	150.71
Site Design – Site Usability	5	122.73	0.84	0.55	4	1.67	1.00	121.06
Site Usability – Informat. Quality	14	297.17	0.81	0.53	13	40.78	0.98	256.39
Informat. Quality – Privacy Control	14	346.28	0.80	0.51	13	27.38	0.99	318.90
Informat. Quality – Security Control	9	200.31	0.85	0.63	8	23.56	0.98	176.75
Informat. Quality – Situat. Normality	9	144.53	0.84	0.52	8	25.12	0.98	119.41
Privacy Control – Security Control	5	157.24	0.87	0.70	4	21.08	0.98	136.16
Struct. Assurances – Internet Risk	9	374.22	0.81	-0.59	8	5.50	1.00	368.72

* A χ^2 difference >3.841 at 1 d.f. indicates that the factors are discriminant at $p=0.05$ level, while a χ^2 difference >6.634 at 1 d.f. indicates that the factors are discriminant at $p=0.01$ level.

Table 13: Test for Discriminant Validity of the Final Measurement Scales.

6.3.4. Hypotheses Testing

After purifying the measurement model to an acceptable level we proceeded with the simultaneous evaluation of the measurement and the structural model by modeling the research model exogenously and endogenously and linking the latent variables with the structural model, derived from our theoretical considerations (see chapter 4, section 5.6. and figure 20).

It is generally recommended for the case of theory construction and validation to consider rival hypotheses and to strive for testing rival hypotheses in the same study (Anderson and Gerbing, 1988). Therefore and given the different theoretical streams in the literature regarding the dimension of interpersonal consumer trust in electronic commerce we decided to specify two different models in order to evaluate which theoretical model would fit the empirical data best. Additionally, we wanted to evaluate each of the two models with and without the inclusion of the four control variables, to determine their effect on the behavioral intention factors (purchase intention and return intention) and the relative importance of consumer trust in the overall model. In the following, we estimated 1) the hypothesized research model with only one trust dimension, namely only the construct of trusting beliefs in the online vendor (i.e., our rival model) without the four control variables (model 1), 2) the hypothesized research model with the two trust dimensions of trusting beliefs and trusting intention (our main model, following the research stream led by McKnight and his colleagues) (model 2), 3) the rival model with only one trust dimension and including the four control variables (model 3), 4) the main model with the two trust dimensions and including the four control variables (model 4). All models used a covariance input matrix computed from 414 cases, were estimated with MLE and converged without problems. If the measurement is satisfactorily unidimensional, as a results of the refinements, then the item loadings on their designated factors should only marginally change when the researcher estimates the measurement submodel and the structural submodel simultaneously (Anderson and Gerbing, 1988). This was the case for all four models reported in the following.

6.3.4.1. Model 1: Unidimensional Trust - Trusting Beliefs

The first model only includes one-dimension of trust, namely consumer's trusting beliefs in the online vendor's benevolence, integrity and competence (see figure 26). The fit indices for the model turned out to be very acceptable with a GFI of 0.89, only marginally below the

conservative threshold of 0.90, and an AGFI of 0.87. The CFI, IFI, NFI and NNFI all strongly surpassed the recommended threshold of 0.90, while the RMSEA index with 0.039 fully satisfied its recommended threshold of ≤ 0.05 . Only the SRMR index showed a slightly higher value of 0.098, yet clearly below the recommended maximum of 0.11. The χ^2 test turned out to be significant which would suggest that the theorized model does not fit the empirical covariance matrix but as χ^2 is very sensitive to sample size and will tend to reject correct models with increasing sample size, this value may be ignored. The $\chi^2/d.f.$ ratio for this model was 1.63, indicating a satisfying fit, too. Regarding the explained variance of the dependent variables (i.e., the squared multiple correlation values), 47% were explained for trusting beliefs, 48% for risk of transaction, 20% of purchase intention and 63% of return intention.

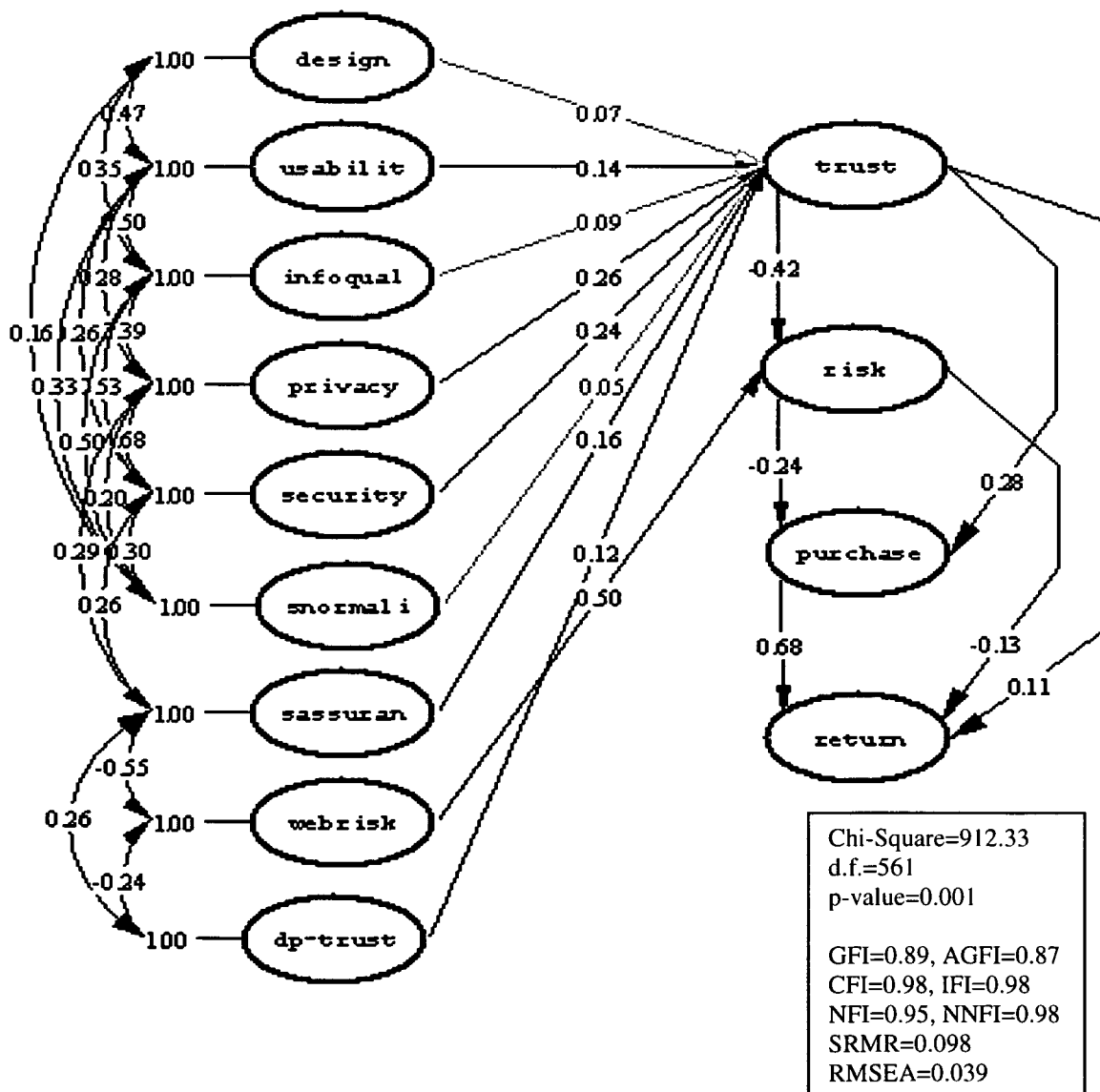


Figure 26: Reduced Rival Model with Trusting Beliefs (M1).⁸⁵

⁸⁵ The LISREL program is only capable of printing eight characters in the path model. Note the following abbreviations for all four models: design (perceived site design), usability (perceived site usability), infoqual

The model suggested that the three paths between site design, information quality, situational normality and trusting beliefs were non-significant (according to Einwiller, 2002, p. 199, t-values⁸⁶ below 1.965 are non-significant at $p < 0.05$ level; non significant paths are illustrated with a gray path and red font in figure 26). In other words, according to the data, these three independent variables had no influence on consumer's trusting beliefs in the vendor. All other paths were found to be significant at $p < 0.05$ level (i.e., t-values > 1.965) and showing the correct hypothesized signs. Regarding the proposed antecedents of trust, in model 1, privacy control ($\gamma = 0.26$) and security control ($\gamma = 0.24$) were found to be most influential, followed by structural assurances ($\gamma = 0.16$), site usability ($\gamma = 0.14$) and dispositional trust ($\gamma = 0.12$). The factor perceived risk of transaction was strongly affected by the independent variable perceived Internet risk with a path coefficient of $\gamma = 0.50$. The hypothesized relationships between the dependent variables were all supported. Consumer trust (trusting beliefs) had a considerable negative influence on risk of transaction ($\beta = -0.42$), as well as a modest positive impact on the consumer's purchase intention ($\beta = 0.28$) and the intention to return to the online vendor's website ($\beta = 0.11$). Risk of transaction was found to have a negative relationship with intention to purchase ($\beta = -0.24$) and intention to return ($\beta = -0.13$). As hypothesized there was a strong positive relationship found between intention to purchase from the online vendor and the intention to return to the online vendor's website ($\beta = 0.68$).

6.3.4.2. Model 2: Multidimensional Trust - Trusting Beliefs and Trusting Intention

The second model included two dimensions of trust, namely, consumer's trusting beliefs in the online vendor's benevolence, integrity and competence, and consumer's trusting intention to depend on the online vendor (see path model in figure 27). The goodness-of-fit indices for the model turned out to be acceptable again with a GFI of 0.89 and an AGFI of 0.87. The CFI, IFI, NFI and NNFI also all strongly surpassed the recommended threshold of 0.90 while the

(perceived information quality), privacy (perceived privacy control), security (perceived security control), snormali (perceived situational normality), sassurran (perceived structural assurance of the Internet), webrisk (perceived risk of the Internet), dp-trust/dispotru (disposition to trust), trust (trusting beliefs in the vendor; *in the rival models*), trustb (trusting beliefs in the vendor; *in the main models*), trusti (trusting intention to depend on the vendor), risk (perceived risk of transaction with the vendor), purchase (intention to purchase), return (intention to return), terms (satisfaction with vendor's terms and condition), switchin (perceived switching costs), price (satisfaction with prices), product (perceived product simplicity).

⁸⁶ t-values result from a division of the parameter estimates by their standard errors (Bagozzi, Yi and Phillips, 1991, p. 431).

RMSEA value minimally decreased to 0.038, again fully satisfying the recommended threshold of ≤ 0.05 . Like in first model in figure 26 the SRMR index showed a slightly higher, but still acceptable value of 0.097. The χ^2 test for the model 2 also turned out to be significant while the $\chi^2/d.f.$ ratio of 1.61 was marginally better than for the first model. 47% of variance could be explained for trusting beliefs, 68% of trusting intention, 53% for risk of transaction, 31% of purchase intention, and 63% of return intention. Yet, in this second model the number of non-significant parameters increased considerably (non-significant paths, with t-values below 1.965, are depicted with gray lines and red font). Overall, twelve paths were found not to be significant while all others were significant at the $p < 0.05$ level.

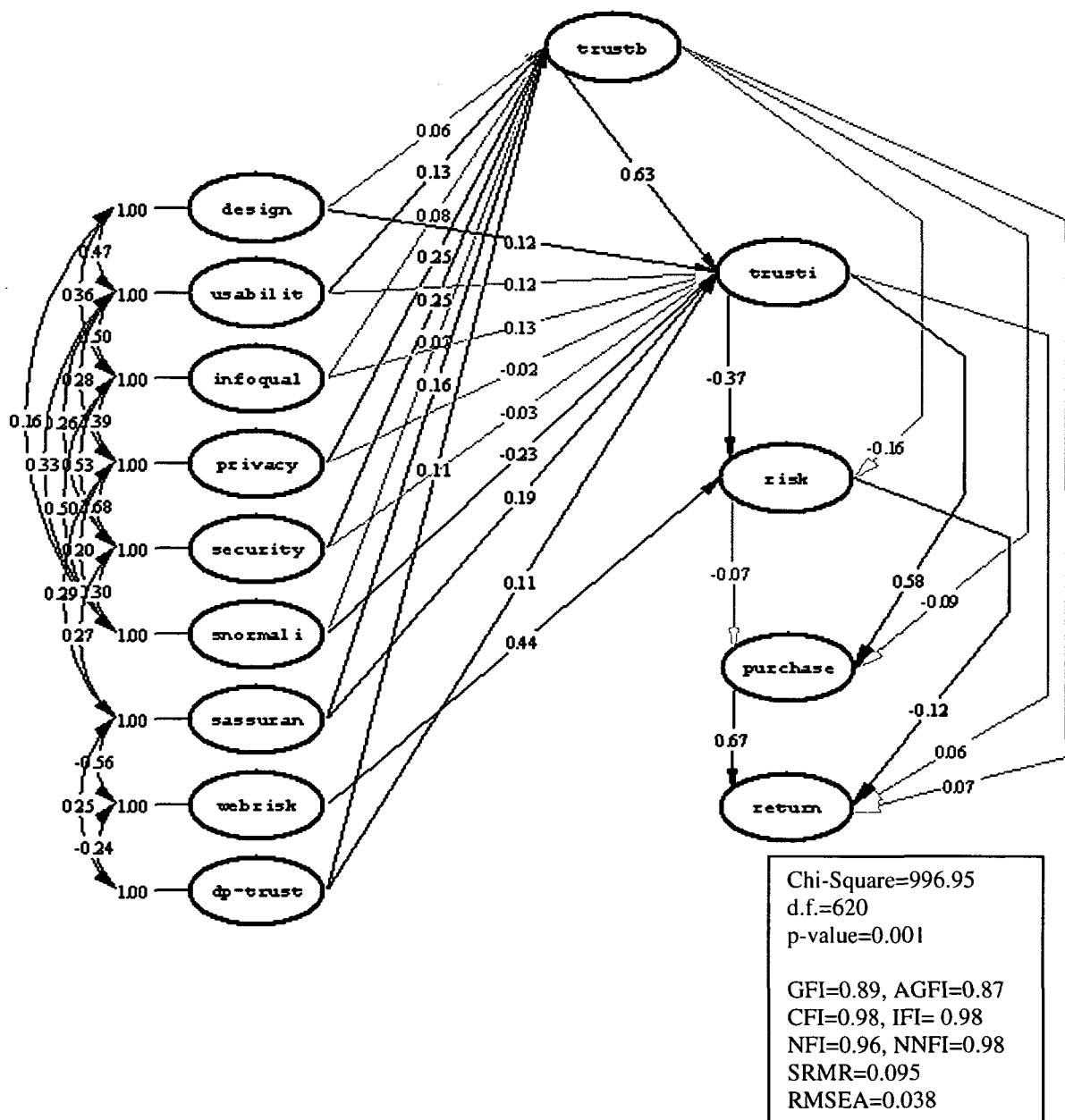


Figure 27: Reduced Main Model with Trusting Beliefs and Trusting Intention (M2).

Regarding the proposed antecedents of trusting beliefs, in model 2, namely, privacy control ($\gamma=0.25$) and security control ($\gamma=0.25$) were again found to be most influential, followed by structural assurances ($\gamma=0.16$), site usability ($\gamma=0.13$) and dispositional trust ($\gamma=0.11$), all at $p<0.05$. All other hypothesized predictors of trusting beliefs in the vendor (i.e., site design, information quality of the website, and situational normality) turned out not to have significant effects on this factor. Trusting intention was found to be positively influenced by structural assurances ($\gamma=0.19$), by site design ($\gamma=0.12$), and by dispositional trust ($\gamma=0.11$). Contrary to our expectations and our hypothesis, a negative relationship was found between perceived situational normality and trusting intention to depend on the vendor ($\gamma=-0.23$). Interestingly, the factors site usability, information quality, privacy control and security control had no significant impact on consumer's trusting intention. Again, like in the first model, the construct risk of transaction was strongly affected by the independent variable perceived Internet risk with a standardized path coefficient of $\gamma=0.44$. The hypothesized relationships between the dependent variables were partly supported. Consumer's trusting beliefs had a strong positive influence on consumer's trusting intention with a standardized path coefficient of $\beta=0.63$, while trusting intention on the other hand was negatively related to the construct risk of transaction with a standardized path coefficient of $\beta=-0.37$. Trusting intention was also found to have a strong positive relationship ($\beta=0.58$) with intention to purchase. However, trusting intention had no significant relationship with customers' intention to return. Interestingly, model 2 suggested that by including the construct trusting intention, the hypothesized second dimension of (interpersonal) consumer trust in the vendor in the model, the effect of trusting beliefs on consumer's intention to purchase, consumer's intention to return to the vendor's website and on consumer's perceived risk of transaction with the online vendor seems to be fully mediated by the construct trusting intention, resulting in these three paths to become insignificant (cf. Baron and Kenny, 1986, on mediational models and the effect of mediating variables). Contrary to our expectations, the proposed negative relationship between risk of transaction and purchase intention was found to be non-significant. Though, a small negative relationship was reported between risk of transaction and intention to return ($\beta=-0.12$), and again, like in the first model, intention to purchase and intention to return were found to be strongly linked with each other with a standardized path coefficient of $\beta=0.67$. The squared multiple correlation value (i.e., the percentage of variance explained) for the dependent variables trusting beliefs and trusting intention was 46% and 66% respectively. The structural equations accounted for a variance of 52% for risk of transaction, of 31% for purchase intention, and of 63% for the construct intention to return.

6.3.4.3. Model 3: Unidimensional Trust - Trusting Beliefs including the Control Variables

The third model extends the first model (i.e., trust only composed of trusting beliefs) by adding the four control variables: satisfaction with the vendor's terms, price satisfaction, perceived switching costs and product simplicity (see figure 28). The control variables were hypothesized to influence consumers' behavioral intention to purchase and to return.

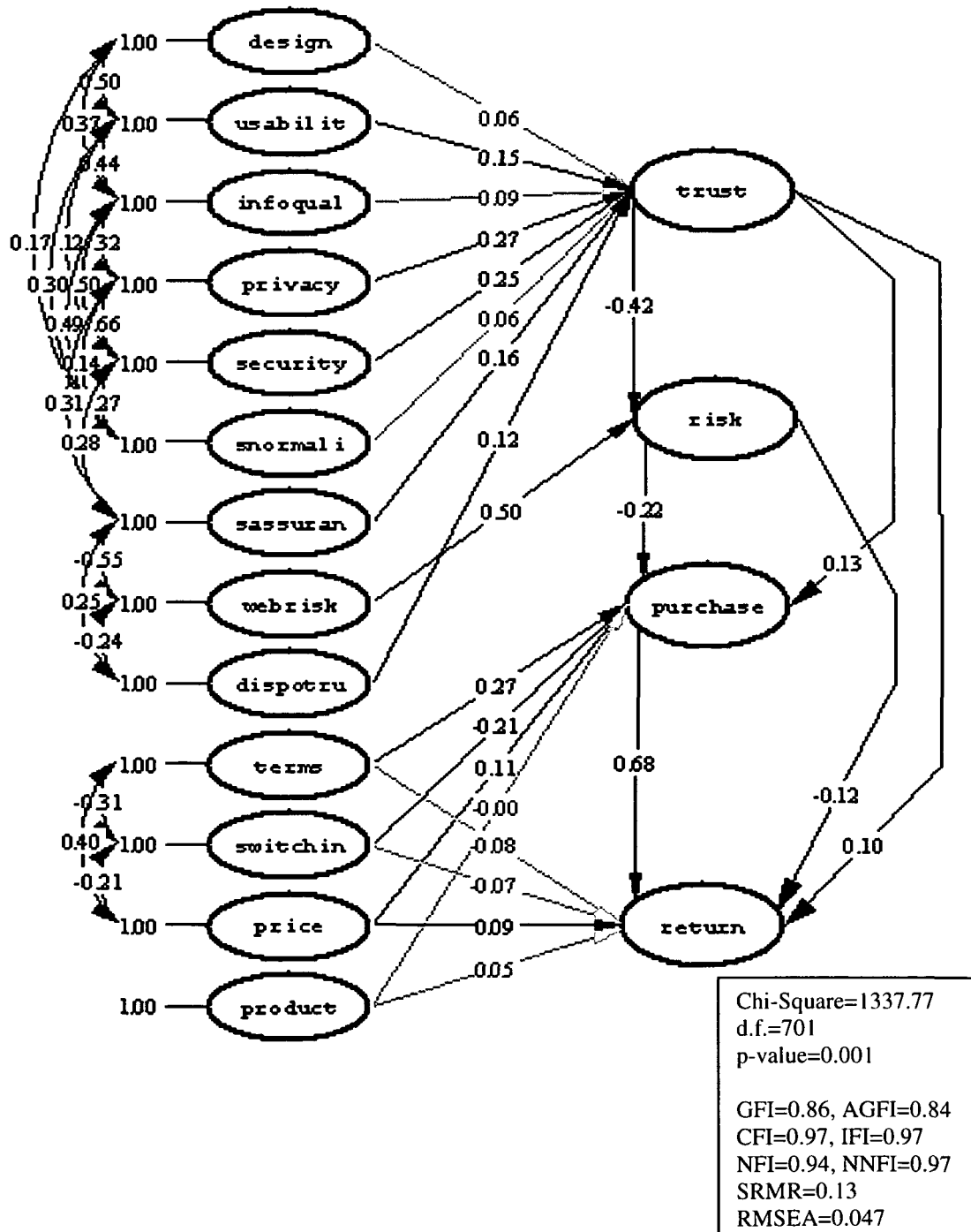


Figure 28: Full Rival Model with Trusting Beliefs and Control Variables (M3).

The fit indices for the third model turned out to be still acceptable but lower than for model 1. The GFI dropped by 3% down to 0.86 and the AGFI down to 0.84, while the CFI only marginally decreased to 0.97. Nevertheless, the CFI, IFI, NFI and NNFI all clearly surpassed the recommended threshold of 0.90 and the RMSEA increased to 0.047 but still remained below its threshold of ≤ 0.05 . The SRMR deteriorated compared to model 1 without the control variables and increased up to 0.13, slightly exceeding the SRMR cut-off value of 0.11 (Bühner, 2004). The χ^2 test for the third model once more turned out to be significant. The $\chi^2/d.f.$ ratio worsened in comparison to model 1 with a ratio of 1.91 but still was clearly within the recommended ratio of 3:1 (Homburg and Giering, 1996).

Regarding the magnitude of the relationship between the proposed antecedents of trust and trusting beliefs, in model 3 (see figure 28), the additional inclusion of the four control variables, had only a minimal effect on the paths between perceived site usability ($\gamma=0.15$, an increase by 0.01), privacy control ($\gamma=0.27$, an increase by 0.01), security control ($\gamma=0.25$, an increase by 0.01) and trusting beliefs. The number of non-significant paths between trusting beliefs and its antecedents remained the same as in model 1 with site design, information quality and situational normality being non-significant predictors of trust. The magnitude of the relationship between trusting beliefs and perceived risk of transacting with the vendor remained unchanged with $\beta=-0.42$. The relationship between perceived risk of transacting with the vendor and purchase intention was minimally reduced though (by -0.02), down to $\beta=-0.22$. However, the relation between trusting beliefs and consumer's purchase intention dropped considerably by more than 50% from $\beta=0.28$ (in model 1) to $\beta=0.13$ as a result of including the four control variables in the model. The relationship between consumer's purchase intention and intention to return remained unchanged with a path coefficient of $\beta=0.68$. Regarding the effect of the newly added control variables on purchase intention, consumer's satisfaction with the vendor's terms was found to have the largest path coefficient with ($\gamma=0.27$), followed by the perceived switching costs ($\gamma=-0.21$) and consumer's satisfaction with the price ($\gamma=0.11$). Perceived product simplicity had no significant relationship with purchase intention. Consumer's intention to return to the online vendor was found to have only a minor significant positive relationship with price satisfaction ($\gamma=0.09$). The paths between the other three control variables and consumer's intention to return turned out to be non-significant.

Adding the four control variables only slightly changed the squared multiple correlation values for the dependent variables in model 3. The percentage of explained variance for the construct trusting beliefs marginally decreased to 45% while the explained variance of consumer's purchase intention increased up to 29%. The squared multiple correlation for risk of transaction and intention to return remained the same with 48% and 61% respectively.

6.3.4.4. Model 4: Multidimensional Trust - Trusting Beliefs and Trusting Intentions including the Control Variables

The fourth model extended model 2 (i.e., consumer trust being composed of trusting beliefs and trusting intentions) by adding the four control variables, again hypothesizing that they would influence consumers' behavioral intention to purchase and to return (see figure 29 below). The fit indices for this model also turned out to be still acceptable but lower than for model 2. The inclusion of the four control variables led the GFI to drop to 0.86 and the AGFI to 0.84, while the CFI only marginally decreased to 0.97. The IFI, NFI and NNFI all clearly surpassed the recommended threshold of 0.90 and the RMSEA worsened to 0.045 but still remained below its threshold of ≤ 0.05 . The SRMR value increased up to 0.12, thereby minimally exceeding the recommended cut-off value of 0.11. The very sensitive χ^2 test for the third model once more turned out to be significant. The $\chi^2/d.f.$ ratio worsened in comparison to model 2 with a ratio of 1.84 but still was clearly within the recommended ratio of 3:1.

Regarding the magnitude of the relationship between its proposed antecedents and trusting beliefs, in model 4, the additional inclusion of the four control variables, had no or almost none effect on the significant paths between perceived privacy control ($\gamma=0.25$), security control ($\gamma=0.26$, increase by +0.01), site usability ($\gamma=0.13$) and trusting beliefs, which remained (almost) identical compared to model 2. Only the significant relationships between structural assurances and trusting beliefs marginally decreased to $\gamma=0.15$ (decrease by -0.03). The parameters of the other proposed antecedents of trusting beliefs (site design, information quality, situational normality) remained non-significant like in model 2. The magnitude of the relationship between trusting beliefs and trusting intention remained unchanged too, with a standardized path coefficient of $\beta=0.63$. However, the inclusion of the four control variables resulted in some changes of the magnitude of the proposed antecedents of trusting intention. Minimal changes occurred to the significant paths between situational normality and trusting

intention ($\gamma=-0.21$, a decrease by -0.02 , yet, still not showing the hypothesized sign) and disposition to trust and trusting intention ($\gamma=0.12$, an increase by $+0.01$). The path coefficient between site design and trusting intention remained unchanged with $\gamma=0.12$. The relationship between trusting intention and risk of transaction minimally decreased to a standardized path coefficient of $\beta=-0.36$ (decrease of -0.01). Again, the paths between trusting beliefs and perceived risk of transaction, purchase intention and return intention remained non-significant, signaling a mediating effect of the variable trusting intention. The inclusion of the four control variables considerably affected the relationship between trusting intention and purchase intention which decreased from $\beta=0.58$ (in model 2) down to $\beta=0.47$ (in model 4). The relationship between risk of transaction and purchase intention again turned out to be non-significant and the relationship between risk of transaction and return intention also almost remained unchanged with a standardized path coefficient of $\beta=-0.11$ (decrease by -0.01). The standardized path coefficient between purchase intention and return intention minimally dropped by -0.01 to $\beta=0.66$ in model 4.

Regarding the effect of the newly added control variables on the construct purchase intention, consumer's satisfaction with the vendor's terms was found to have the largest path coefficient with ($\gamma=0.23$), followed by the perceived switching costs ($\gamma=-0.21$) and consumer's satisfaction with the price ($\gamma=0.10$). Perceived product simplicity had no significant relationship with purchase intention. Consumer's intention to return to the online vendor was found to have only a minor significant positive relationship with price satisfaction ($\gamma=0.09$). The paths between the other three control variables and consumer's intention to return turned out to be non-significant, like in model 3.

Adding the four control variables again slightly changed the squared multiple correlation values for the dependent variables: The percentage of explained variance for the constructs trusting beliefs and risk of transaction marginally decreased to 47% and 52% respectively while the explained variance of consumer's purchase intention increased by 4% up to 35%. The squared multiple correlation value for intention to return remained the same with 61%, and 65% of variance were explained of the construct trusting intention.

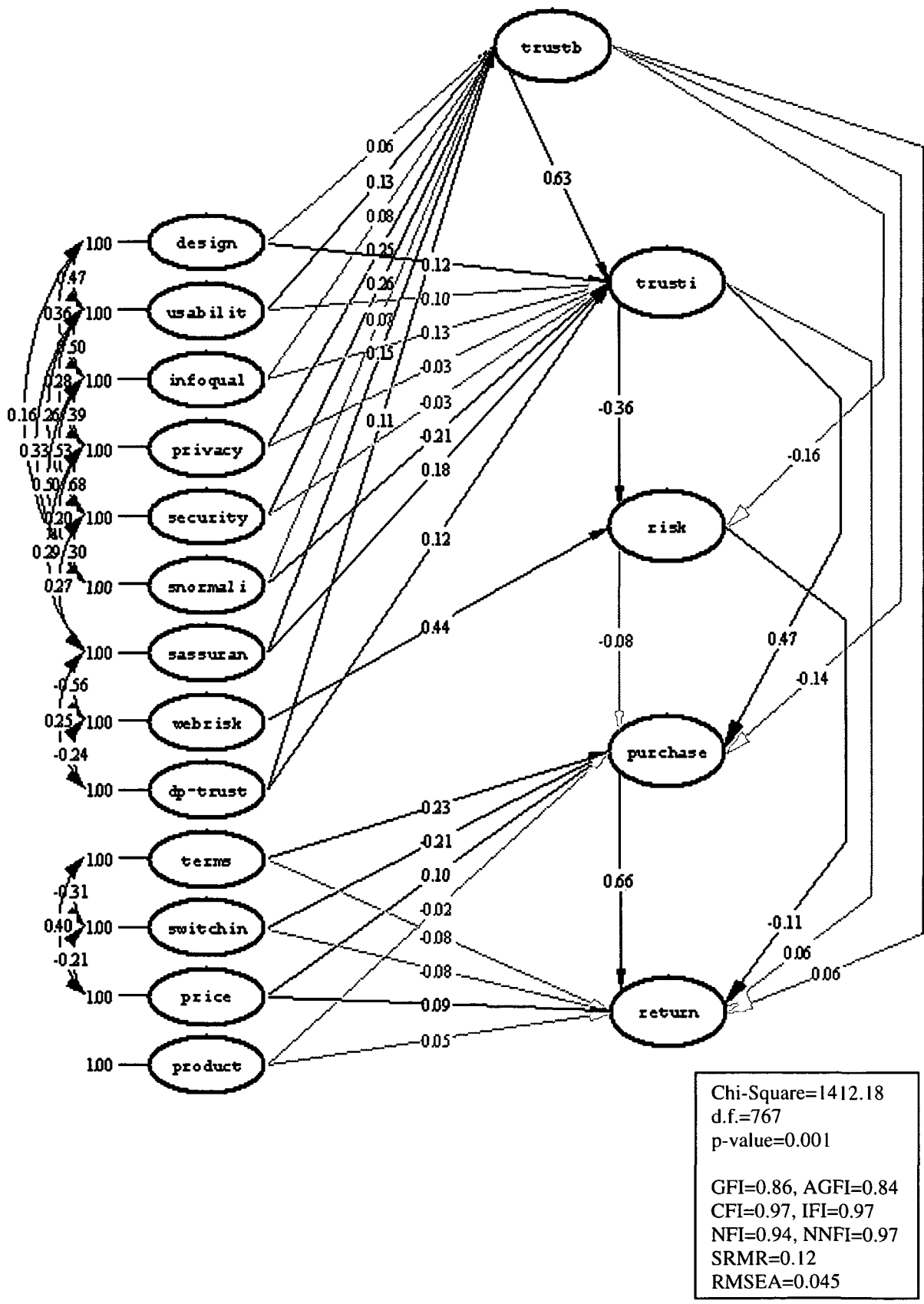


Figure 29: Full Main Model with Trusting Beliefs and Intention and Control Variables (M4).

6.3.4.5. Model Comparison

Keeping the four different models (see figures 26, 27, 28, 29) in mind, the following statement by Anderson and Gerbing (1988, p. 421) describes the resulting situation partially. They noted that in structural equation modeling “models are never confirmed by data; rather, they gain support by failing to be disconfirmed. Although a given model has acceptable goodness of fit, other models that would have equal fit may exist ...”. In our case, the first and the second model gain very similar fit indices as well as the third and the fourth model (see table 14).

Generally, given identical model fit, more parsimonious models, in other words, models with more restrictions should be favored (Jöreskog, 1993; Bühner, 2004). This is especially true for “nested model” comparisons, in which the rival models are including the same variables and only the number of paths/parameters linking the constructs is varied (i.e., in that case a model with more restrictions is “nested” within a more liberal model with more paths to be freely estimated; cf. Anderson and Gerbing, 1988). However, in the case of our four models the number of factors across the models varied, making the comparison more difficult because the models are not nested in each other. Yet, Jöreskog (1993) pointed out that comparisons of alternative/rival models – not necessarily only nested models – can be carried out by comparing their parsimony and fit.

Criterion	M ₁ (Rival)	M ₂ (Main)	M ₃ (Rival + CV)	M ₄ (Main + CV)
χ^2	912.33	996.95	1337.77	1412.18
p-value	0.001	0.001	0.001	0.001
d.f.	561	620	701	767
χ^2 /d.f.	1.63	1.61	1.91	1.84
GFI	0.89	0.89	0.86	0.86
AGFI	0.87	0.87	0.84	0.84
CFI	0.98	0.98	0.97	0.97
IFI	0.98	0.98	0.97	0.97
NFI	0.95	0.96	0.94	0.94
NNFI	0.98	0.98	0.97	0.97
SRMR	0.098	0.095	0.13	0.12
RMSEA	0.039	0.038	0.047	0.045

Table 14: Model Fit-Comparison of Rival Models.

According to Bagozzi and Yi (1988, p. 82) another criterion for the assessment of fit of the internal structure of a model is to evaluate if the model's parameter estimates correspond to the a priori hypothesized relations and to evaluate the parameters' significance (see also Morgan and Hunt, 1994). Jöreskog (1993, p. 314) similarly stated that "[d]ifferent equivalent models will give different parameter estimates, and some may give estimates that are not meaningful. This fact may be used to distinguish some equivalent models from others." Bollen and Long (1993, p. 6-7) additionally concluded that the fit of the components of the model is important and they mention: "By *components of the model* we refer to specific aspects, such as ... the magnitude of the coefficient estimates, whether the estimates are of the correct sign, and the presence of improper solutions or other unusual results." Applying these criteria to our four models it can be seen that while model 1 (i.e., the rival model without the control variables) included only three non-significant parameters (non-significant parameters: site design → trusting beliefs; information quality → trusting beliefs; situational normality → trusting beliefs) and all model parameters had correct signs according to our a priori hypotheses, in model 2 (i.e., our main model without the control variables) the number of non-significant parameters increased up to twelve and five model parameters – although four of them being non-significant - did not show the hypothesized signs (non-significant parameters: privacy control → trusting intention; security control → trusting intention; trusting beliefs → risk of transaction; trusting beliefs → purchase intention; situational normality → trusting intention). Most disturbing in the main model (model 2) were the findings that firstly, perceived situational normality, an element of institutional-based trust, had a relatively strong negative relationship with consumer's trusting intention (i.e., interpersonal trust), and secondly, that perceived risk of a transaction with the vendor had no significant influence on the consumer's intention to purchase from the online vendor. Finally, Morgan and Hunt (1994, p. 30-31) also proposed an additional measure for the comparison of rival models, namely the PGFI (Parsimony Goodness of Fit Index, ranging from 0 to 1), which is computed by LISREL and results from the goodness of fit of the model and its degree of parsimony. However, the PGFI for the main research model without the control variables (PGFI=0.74) and with the control variables (PGFI=0.73) was only marginally worse than those of the rival model without the control variables (PGFI=0.75) and with the control variables (PGFI=0.74) and thus, not revealing a strong, interpretable trend.

Given all these findings the rival model, with (interpersonal) trust in the vendor as a one-dimensional construct (i.e., trusting beliefs only) seemed to be superior regardless of the fact

that both, model 1 and 2 as well as model 3 and 4, reported almost identical goodness-of-fit indices. Hence, it seemed that, all other factors being equal, the one-dimensional view of trust fitted the empirical data better than the two-dimensional trust construct.

Regarding the models 3 and 4, which extended model 1 and 2 by adding the four control variables, the fit of both models deteriorated below the fit of the original models without the control variables. In model 3 (see figure 28), seven hypothesized parameters were found to be non-significant and two of these seven non-significant paths also showed wrong signs (non-significant paths with wrong signs: product simplicity → purchase intention; satisfaction with terms → intention to return). In model 4 (see figure 29), overall sixteen of the hypothesized paths turned out to be non-significant. Five of these 16 non-significant paths were additionally found to have negative signs contrary to the hypotheses (non-significant paths with wrong signs: privacy control → trusting intention; security control → trusting intention; trusting beliefs → purchase intention; satisfaction with terms → intention to return; product category → purchase intention). Like in model 2 also in model 4 the construct perceived situational normality was found to have a relatively strong significant negative relationship with consumer's trusting intention to depend on the online vendor. Yet, this structural relationship was a priori hypothesized to be positive. Based upon these findings the third model, including interpersonal trust in the vendor as a one-dimensional construct and the four control variables, deemed to be superior again in terms of internal structure, regardless of the fact that both, model 3 and 4, reported almost identical model-fit-indices.

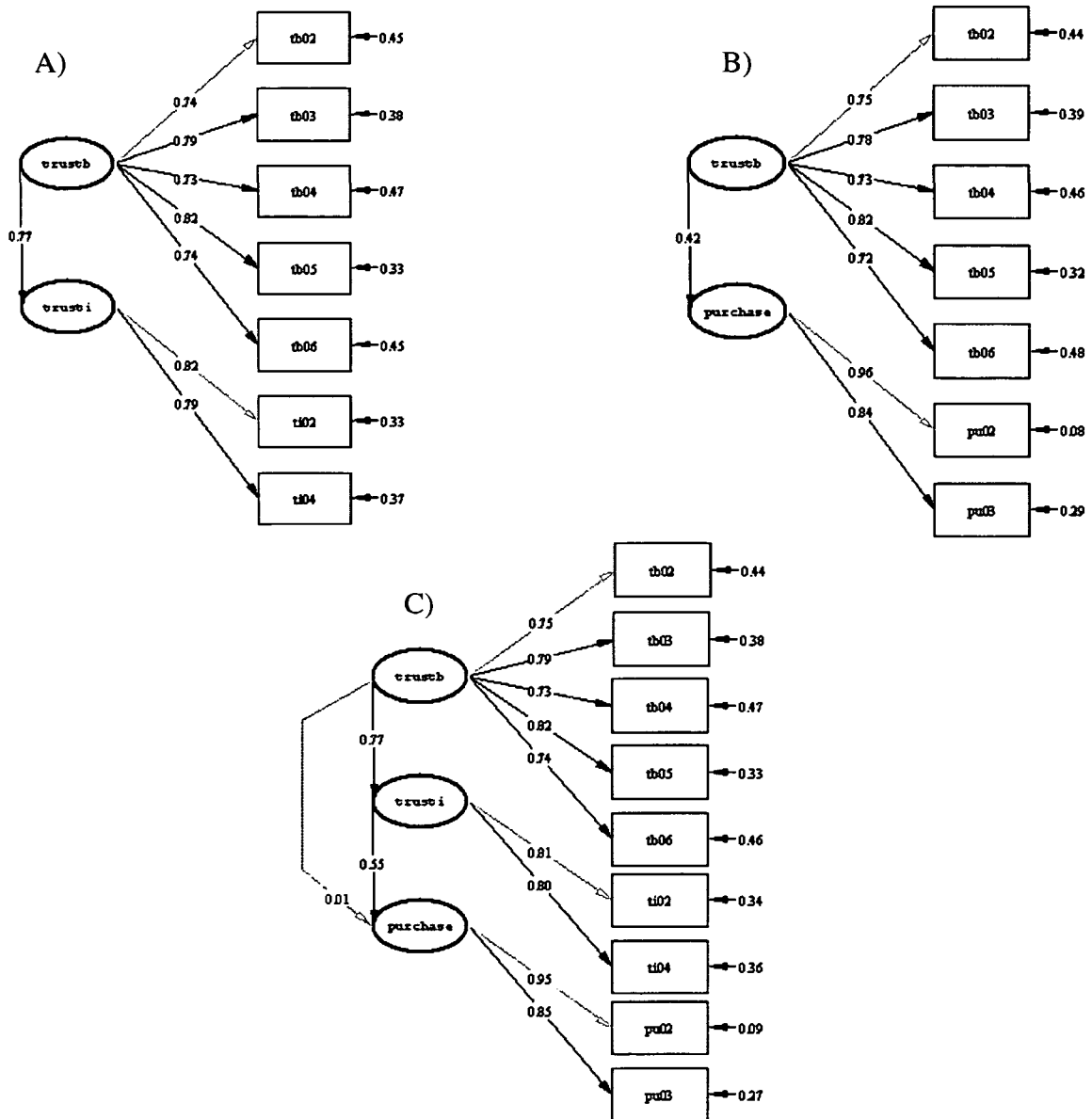
A pairwise comparison of model 1 and 3 and model 2 and 4 on the squared multiple correlation (SMC) value (i.e., the percentage of variance explained) in the dependent variables purchase intention and intention to return, revealed that the inclusion of the four control variables contributed to a higher portion of explained variance in the construct purchase intention (in model 3: an increase by +9% up to 29%; in model 4: increase by +4%, up to 35%) while the portion of explained variance in the construct intention to return was slightly reduced (in model 3 and 4: -2%, down to 61%). As mentioned above, the magnitude of the relationships between trusting beliefs with purchase intention in model 1 and 3 (before: 0.28, after: 0.13), and the magnitude of the relationship of trusting intention with purchase intention in model 2 and 4 (before: 0.61, after: 0.49) was significantly reduced by adding the four control variables. Furthermore, it is noteworthy that the inclusion of the control variables contributed to a worsened overall model fit in both, model 3 and 4. A number of modification

indices emerged for all of the four control variables indicating cross-loadings on most of the other exogenous constructs (i.e., the independent variables in the model). This may have been caused by the single-item measurement and the control variable items being overall judgements of the underlying constructs which might have been affected by notions of the independent variables as well.

Analyzing the standardized path coefficients in the models 1 and 3 (see figures 26 and 28), which appeared to fit the empirical data better in terms of internal structure, the most important antecedents of consumers' (interpersonal) trust in the online retail store (trusting beliefs) were found to be the factors perceived privacy control and perceived security control. The magnitudes of these two predictors of trusting beliefs were significantly higher than of all other significant antecedent factors. Structural assurances of the Internet (i.e., an institutional-based trust belief), perceived website usability and the individual's general disposition to trust others were also found to affect consumer's trusting beliefs in the online vendor. Interestingly, perceived site design, information quality of the vendor's website and perceived situational normality had no impact on consumer's trusting beliefs in our sample.

Another interesting finding was revealed by comparing all the four models 1 and 2 and 3 and 4 with each other, namely that by adding the construct trusting intention to depend on the vendor - the second hypothesized interpersonal trust factor - to the research model, the relationship between trusting beliefs and risk of transaction, as well as between trusting beliefs and purchase intention and intention to return respectively, was fully mediated and became insignificant (Baron and Kenny, 1986, p. 1176). According to Baron and Kenny (1986, p. 1177) a mediating effect can be generally tested using three regression equations: "To establish mediation, the following conditions must hold: First, the independent variable must effect the mediator in the first equation; second, the independent variable must be shown to affect the dependent variable in the second equation; and third, the mediator must affect the dependent variable in the third equation. If these conditions all hold in the predicted direction, then the effect of the independent variable on the dependent variable must be less in the third equation than in the second. Perfect mediation holds if the independent variable has no effect when the mediator is controlled." Baron and Kenny (1986) furthermore state that with multiple-item scales a mediating effect may also be evaluated with the help of structural equation modeling. Following these recommendations we adapted Baron and Kenny's approach for our LISREL models and formally tested the relationship between the three

constructs: trusting beliefs in the vendor (“trustb”), trusting intention to depend on the vendor (“trusti”) and consumer’s intention to purchase from the vendor (“purchase”). The result of this exploratory post-hoc analysis (see figure 30), clearly supported the suspected mediating effect of trusting intention.



Model A:
 Chi-Square=38.89, d.f.=13,
 p-value=0.001,
 GFI=0.97, AGFI=0.94,
 CFI=0.99, RMSEA=0.069

Model B:
 Chi-Square=33.99, d.f.=13,
 p-value=0.001,
 GFI=0.98, AGFI=0.95,
 CFI=0.99, RMSEA=0.063

Model C:
 Chi-Square=67.02, d.f.=24,
 p-value=0.001,
 GFI=0.97, AGFI=0.93,
 CFI=0.99, RMSEA=0.066

Figure 30: Testing the Mediation Effect of Trusting Intention.

Afterwards, the same mediating test was also computed for the relationship between trusting beliefs – trusting intention – intention to return, and for the relationship between trusting beliefs – trusting intention – risk of transaction, in both latter cases with the same result. In all three cases trusting intention turned out to fully mediate the effect of trusting beliefs on each of the three dependent variables.

Furthermore, the results of the structural equation models (see sections 6.3.4.1. to 6.3.4.4.) generally supported the nomological/predictive validity of the measurement instrument and its scales (i.e., the a-priori hypothesized predictions within our theoretical network were confirmed in the vast majority of scales/factors).

6.3.5. Limitations

„Part of the strength of a study lies in the recognition of its limitations.“
(de Ruyter et al., 2001, p. 202).

Just as any other study, the quantitative study reported in this chapter is also not without a number of limitations, which of course need to be recognized and mentioned:

It is important to note that our quantitative study solely relied on a non-random convenience sample of 497 undergraduate students of the University of Klagenfurt. The majority of respondents fell in the age group between 20-29 years, all had at least a high-school or equivalent degree, were computer literate and 87% of the respondents had at least three years of Internet experience and almost 70% of respondents reported that they had conducted an online purchase once in the past. While several authors (e.g., Wolfinbarger and Gilly, 2003) argue that such characteristics (i.e., younger users, with higher education and income etc.), still represent a big portion of the Internet population recent findings of Austrian market research institutions suggest that this may not anymore be the case for the Austrian Internet population due to high penetration rates (see section 1.1. and 6.3.1.). Thus, while the homogenous sample contributed to a higher internal validity, which is beneficial for the case of theory development, the external validity of the study remains in question (Koufaris and Hampton-Sosa, 2004). Therefore, one should be cautious in generalizing our findings directly to the general (Austrian) Internet population.

In addition, there are a few critical methodological aspects which need to be discussed, too: First of all, our respondents were presented with the website of the selected online vendor and the purchase process with the help of a high-resolution beamer and big screens in lecture rooms. Hence, there was no direct interaction of the respondents with the vendor's website which may have resulted in lack of realism for the respondents. Although the structure of the website presentation tried to simulate steps typical for an initial visit to an online retail store and typical for an initial purchase attempt, including a product (a course book) the respondents could relate to, the information presented to the respondents might have still deviated from the one they would have retrieved if they would have been allowed to navigate through the website individually. Furthermore, respondents may generally not have experienced the amount of perceived risk of transacting with the vendor as they would have, if they had interacted with the website themselves. In addition, our study measured only behavioral intentions but no overt behavioral manifestations of trust, which might also have influenced the amount of perceived risk experienced by the respondents and may be one possible explanation of the non-significant relationship between perceived risk of transaction and purchase intention in research model 2 and 4 (see figures 27 and 29).

Secondly, our study employed a cross-sectional design using a survey approach, which did not allow to investigate causal effects. Causation can only be determined by experiments or longitudinal studies. Another potential concern related to the cross-sectional design of our study is common-method variance, as uniform response behavior may have occurred because all information was gathered at one point in time with the same instrument (cf. Pavlou 2003, Gefen et al. 2003). Yet, Pavlou (2003) stated that lack of discriminant validity of the scales is one indicator of common-method variance, but an assessment of discriminant validity of our scales indicated no such problem in our study.

Since we used a real online vendor's website as stimulus in our study, which was accessed in real-time over the Internet at different times of the day, the speed of the Internet connection and site access minimally varied across the 15 lectures and seminars which were used to gather the data. Yet, we did not specifically control this factor which still might influence respondents perception of a website.

Another aspect which needs to be taken into account about our findings is the fact that we used the website of an online retailer offering books, CDs, DVDs/videocassettes and PC-

games/software as stimulus for our respondents and only the purchase of a course book, a relatively standardized low-touch product, was simulated. Hence, the magnitude of the relationships in our research models might have been influenced by the type of the vendor and the selected product category. For other types of products such as for example consumer electronics or computer hardware or for services (e.g. financial services), the strengths of the structural relationships might change. In other words, our findings might not be directly transferable to other online industries and product groups.

As we willingly choose the scenario of initial consumer trust formation in an unfamiliar online retail store for this thesis, our findings reflect this context and generalizations toward trust in a familiar online vendor and ongoing trust relationships remain in question. As pointed out in chapters four and five, under such circumstances other antecedents of trust might come into play such as for example corporate brand, vendor reputation, and word-of-mouth, as well as other consequences such as for example customer loyalty, satisfaction with prior transactions with the vendor, or switching intentions.

Although we conducted a rigorous literature review and a qualitative focus groups study prior to the development of our final research model(s) and its empirical validation there might still be important antecedents and/or consequences of initial interpersonal trust in the online vendor (trusting beliefs) not be included in the model, especially since the portion of variance explained in the construct trusting beliefs in model 3 only reached a moderate value of 45%. In addition also the relatively small portion of explained variance (SMC or R^2) of consumer's purchase intention (20% in model 1; 31% in model 2; 29% in model 3; 35% in model 4) also suggests the presence of other, additional influence factors on purchase intention which were not included in the present model. Yet, this study is not the first experiencing a relatively low portion of explained variance in consumer's purchase intention. Similarly, McKnight et al., (2002) reportedly had only 23% of variance explained in their construct intention to purchase and 35% in intention to share personal information with the vendor, Koufaris and Hampton-Sosa (2002a, 2002b) only had an R^2 of 27% and 28% respectively of purchase intention explained by trust and their other antecedents, Gefen and Straub (2003) managed to explain 38% of variance of consumer's purchase intention in their model and Bhattacharjee (2002) reached an R^2 of 31% of his related construct willingness to transact.

Aside from conceptual and methodological issues there are a few statistical concerns as well potentially affecting the results of this study: Firstly, it needs to be mentioned that most sophisticated statistical analyses such as t-tests, regression analyses, variance analyses, exploratory and confirmatory factor analyses and structural equation modeling rest upon the analysis of data measured by interval scales⁸⁷, yet, strictly speaking the rating scales used in our study were ordinal scales which should have been rather analyzed with nonparametric statistics (cf. e.g., Nunnally, 1967; Bortz, 1999). However, in many fields of research such as in psychology, marketing or management information systems research this interval-scale requirement is not strictly complied with and very often such seven-point unipolar rating-scales, ranging from strongly agree to strongly disagree, are used by scholars to measure beliefs and intentions (in fact this was the case in all 24 reviewed studies in chapter three). Although there is a widely accepted, liberal convention that such scales, with seven or more points, may be treated like interval scales and analyzed with the more sophisticated statistical test which take intervals seriously (see Nunnally, 1967, pp. 13-30; Bortz, 1999, pp. 27-28). Nevertheless, it should be mentioned that the usage of this widely-accepted convention for our study might have had some impact on our findings (cf. Jöreskog and Sörbom, 1996, p. 239).

Furthermore, structural equation modeling, such as conducted with LISREL, is based on the assumption of linear relationships between the variables, however, this may not be always the case (cf. Gefen, 2002b). Additionally, while LISREL's MLE requires multivariate-normality of the observed variables (Jöreskog and Sörbom, 1996) the fulfillment of this requirement may currently only be assumed at bona fide since SPSS or LISREL are not offering a sound test for multivariate normal-distribution of the data. Therefore, one basically may only analyze the histogram of each observed variable for ordinary normal-distribution and/or compute a KS test. Nevertheless, even if both, histograms and KS test, suggest that the data are normally distributed, this is still no valid test for multivariate normal-distribution.

A potential limitation may also result from the refinement of our measurement model, which although rigorously following well-recognized paradigms of Anderson and Gerbing (1988), Fornell and Larcker (1981) and Segars (1997) as well as suggestions by Homburg and Giering

⁸⁷ "An interval scale is one in which (1) the rank ordering of objects is known with respect to an attribute and (2) it is known how far apart the objects are from one another with respect to the attribute, but (3) no information is available about the *absolute* magnitude of the attribute for any object." (Nunnally, 1967, p. 13).

(1996), purified the scales by dropping problematic items. While all these refinements were conducted with great care and grounded in theoretical considerations (e.g., ambiguous wordings, problems due to the used methodology) there is still the potential danger that some changes might have resulted due to special characteristics of our sample. Therefore, there is also a need for cross-validations of our final measurement model.

While almost all scales of our measurement instrument model reached very good reliability values and passed the employed tests for validity, the scale for perceived information quality of the vendor's website indicated minor problems in regard to the item reliability of its first item as well as for the AVE value of the overall scale which remained slightly below the recommended value of 0.50 (Fornell and Larcker, 1981). This should be kept in mind by the reader when interpreting our findings that information quality had no significant relationships with the consumers' trusting beliefs and trusting intentions. Furthermore, the refinement of the measurement model resulted in the exclusion of one perceived benevolence and one perceived competence item from the trusting beliefs scale, yet, leaving three perceived integrity items in the scale. Hence, the notion of perceived integrity is relatively stronger present in our final trusting beliefs scale.

Another potential concern about our measurement instrument which needs to be noted for the sake of completeness, is that due to the large number of constructs included in the instrument there was a trade-off regarding the ratio of manifest items per scale/latent construct, which was relatively small. Since it is common knowledge that if the questionnaire exceeds a certain length, respondents tend either not to finish the questionnaire or tend to employ uniform responses which may distort the data analyses, we tried to keep the length of the questionnaire at a practical minimum. As a result there are seven scales in the final, refined measurement model which only rely on two manifest items (i.e., the website design scale, the security control scale, the situational normality scale, the trusting intention scale, the risk of transaction scale, as well as the purchase intention and return intention scales) and the four control variables are single-item constructs for reasons of parsimony. While it is often suggested to use a minimum of three manifest items per latent construct to gain more robust parameter estimates and to reduce the danger of non-converging solutions (cf. e.g., Einwiller, 2002) this convention still remains in question and is often discussed by scholars (for a brief overview on different opinions about the ratio between manifest and latent variables see for example Bühner, 2004, p. 209, who also reports that the number of items per factor seems to

have no impact on model fit). One problem also arose due to the single-item measurement of the four control variables, namely, that some modification indices pointed to latent cross-loadings of the control variables on some of the exogenous variables, which contributed to a lower model fit for the models 3 and 4 (for more information on potential problems with single-item scales see Nunnally, 1967, Churchill, 1979, or Anderson and Gerbing, 1988). These concerns should be kept in mind by the reader.

Two final limitations we would like to mention are the facts that, 1) we did not separate the data of the e-commerce adopters from the one of the non-adopters for the LISREL analyses because only very few differences were found with the help of independent sample t-tests regarding the item means (only five items out of 42 of the final scale had significant mean differences at $p < 0.05$, namely the items: usability-U02 - minimally lower for adopters; situational normality-N01 - higher for adopters; risk of transaction-R01 - lower for adopters; satisfaction with terms-ST - lower for adopters; perceived switching costs-SW - higher for adopters; see appendix C), and 2) we did not separate the data by gender although five items of the 42 were found to have mean differences at $p < 0.05$ (perceived situational normality-N01 – higher for women; trusting intention-Ti2 – lower for women; risk of transaction-R01 and risk of transaction-R03 – both higher for women; return intention-Re1 – lower mean for women). Although a separate model estimation for adopters versus non-adopters and for women versus men would have been theoretically possible by applying a multi-group analysis (cf. Jöreskog and Sörbom, 1996, pp. 277-296) the number of parameters of our very large models would have been too high for these considerably smaller sub-samples, making such an analysis inadmissible.

Following the presentation the results of the survey the next chapter will discuss and interpret our empirical findings.

7. Discussion, Implications and Conclusion

In this final chapter we will synthesize, discuss and interpret the outcomes of our study. Furthermore, we will point out how our findings contribute to the existing body of literature on consumer trust in B2C electronic commerce and which theoretical implications can be drawn from our findings, also in regard to future studies. Afterwards, we will provide several managerial implications for online vendors based on our research. Finally, a general conclusion ends this thesis.

7.1. Summary of Findings

In the course of this thesis we have combined existing findings from such different research fields like relationship marketing, management information systems (especially online trust literature), social psychology, organizational theory, sociology, or economics and created an interdisciplinary theoretical framework as background for our empirical studies.

Based upon a comprehensive presentation and discussion of the general trust literature in chapter two and a rigorous conceptual meta-analysis of prior empirical studies on consumer trust in e-commerce in chapter three we have built a complex research model of initial consumers' trust in an unfamiliar online retailer in the context of B2C e-commerce. We have conceptualized initial (interpersonal) consumer trust in an online retail store as a two-dimensional construct consisting of the related factors TRUSTING BELIEFS IN THE VENDOR and TRUSTING INTENTION TO DEPEND ON THE VENDOR. Subsequently, we have defined initial consumer trust in an (previously) unfamiliar online vendor as *the willingness (trusting intention) of the consumer to be vulnerable to the actions of the online vendor, based on beliefs (trusting beliefs) about the online vendor's competence, integrity, and benevolence, resulting from the first interaction with the vendor irrespective of the ability to monitor or control the online vendor*. In the following, we have developed a comprehensive (preliminary) 14 factor research model, in which the two-dimensional interpersonal trust construct was posited to be the "center piece", linking consumer's beliefs about the online vendor and its website as well as about the Internet and other people in general with perceptions of risk of a prospective transaction with the vendor and the behavioral intentions of the consumer to purchase a product from the vendor and to return to the vendor in the

future. In addition, we also formulated a rival research model in which initial consumer trust was conceptualized as a one-dimensional construct, only consisting of trusting beliefs in the online vendor's competence, benevolence and integrity. This one-dimensional view of trust is propagated by a number of scholars, especially by Morgan and Hunt (1994), by Bhattacharjee (2002) but also by Suh and Han (2002), Gefen et al. (2003) and Gefen and Straub (2003) and we wanted to test if our two-factorial conceptualization of interpersonal trust - following the research stream of McKnight and Chervany (1996, 2001; 2001-2002) and McKnight et al. (1998, 2000, 2002) - would be superior in terms of overall model fit. The usage of such alternative or rival models in structural equation modeling is often suggested and applied in theory construction (cf. Anderson and Gerbing, 1988; Jöreskog, 1993; Morgan and Hunt, 1994).

Furthermore, a qualitative focus group study was conducted, in order to gather additional data and insights directly from Austrian consumers about their experiences and/or opinions about e-commerce and online vendors. The findings of this qualitative, exploratory study pointed us to several adaptations of our preliminary research models (see figures 15 and 16): The factor perceived website quality was split into the two separate factors perceived visual website design and perceived website usability, while the factor perceived willingness of the vendor to share information was adapted and transformed into the new factor perceived information quality of the vendor's website, whereas the factor perceived social presence on the website was dropped from the research model but notions of this variable remained as part of the new construct perceived information quality of the vendor's website. As a direct result of the focus group study we also added four control variables to our model, namely consumer's satisfaction with the terms of the vendor, consumer's satisfaction with the vendor's prices, perceived switching costs and perceived product simplicity. All these adaptations were implemented in the final, main research model as well as in the rival model (see figure 20). The resulting, final research model was consistent with 1) Fishbein and Ajzen's *Theory of Reasoned Action* (Fishbein and Ajzen, 1975; see also section 3.3.1.) due to the separation of beliefs and intentions and the assumption that behavioral intentions are predicted by beliefs, 2) with Thibaut and Kelley's *Social Exchange Theory* (SET) framework (Thibaut and Kelley, 1969; see also Blau, 1964 and section 3.3.7.) because the uncertainty of outcomes of social interactions was incorporated in our model by the factor perceived risk of transaction whereas our control variable perceived switching costs is related to SET's concept of level of comparison of the transaction parties, and 3) our research model was also consistent with the

concepts of *Signaling Theory* (Spence, 1974; Boulding and Kirmani, 1993; see section 3.3.5.) as we posited the vendor's website to provide cues (i.e., signals) for the prospective customers regarding the trustworthiness of the online retailer.

With the data of 414 usable questionnaires, gathered in a quantitative full-scale survey at the University of Klagenfurt, we were able to purify and successfully validate our measurement model with exploratory and confirmatory factor analyses and subsequently test our hypothesized main research model and the rival model with structural equation modeling techniques using LISREL 8.5.

7.1.1. Conceptualization of Initial Consumer Trust in the Online Vendor

A comparison of the main research model (figures 27 and 29), including initial interpersonal consumer trust in the online vendor as a two-dimensional construct consisting of the factors trusting beliefs and trusting intention, with the rival model (figures 26 and 28), including initial interpersonal consumer trust in the online vendor as a one-dimensional construct only consisting of trusting beliefs, resulted in almost equal goodness-of-fit indices for the two alternative models (see section 6.3.4.5.). However, a comparative analysis of the internal structure of the models (Bagozzi and Yi, 1988; Bollen and Long, 1993; Jöreskog, 1993), based on an evaluation of the parameter strengths (path coefficients and t-values) and the meaningfulness and signs of the parameters, indicated that the main research model was troubled with considerably more non-significant parameters (+13% more non-significant paths in relation to the model's total number of structural paths) compared to the rival model and a few parameter estimates showing incorrect, non-hypothesized signs (e.g., a statistically significant negative path between institutional-based situational normality and trusting intention). Therefore, we concluded that the rival model (i.e., the model including the one-dimensional trust construct) fit the empirical data better than the main model. In other words, the one-dimensional conceptualization of interpersonal trust in the rival model resulted in a more stable model with all significant parameters being meaningful and having their correct signs.

This interesting finding contradicts with the empirical findings of the study on online consumer trust of McKnight et al. (2002) who found support for their two-factorial trust construct. However, our finding is consistent with the research on customer trust of Morgan

and Hunt (1994) who argued against a conceptualization of trust which also incorporates a behavioral intention (i.e., the willingness to depend on other party). Morgan and Hunt (1994, p. 23-24) stated: “We argue that willingness to transact is implicit in the conceptualization of trust and, therefore, one could not label a trading partner as ‘trustworthy’ if one were not willing to take actions that otherwise would entail risk. More simply, genuine confidence that a partner can rely on another indeed will imply the behavioral intention to rely. If one is confident one would be willing; if one is not willing, then one is not genuinely confident. We believe that, though it certainly would be appropriate to have items incorporating ‘stated willingness’ in a measure of trust, willingness is unnecessary or redundant in its definition. Thus, ... ‘willingness to rely’ should be viewed as an outcome (or, alternatively, a potential indicator) of trust and not as part of how one defines it.”

Hence, our finding suggests that the two-dimensional or two-factorial conceptualization of interpersonal trust in the online vendor, divided into trusting beliefs and a resulting trusting behavioral intention to depend on the other party, may be a skewed academic model of the empirical reality. According to our study’s results one could argue for a modification of our original conceptualization of INITIAL CONSUMER TRUST IN THE ONLINE VENDOR and a re-definition of it as *a set of specific beliefs held by the trustor (i.e., the consumer) about the trustee (i.e., the online vendor) including perceived competence, integrity and benevolence resulting from the first contact with the trustee* (cf. Gefen et al., 2003, for a similar definition).

Yet, the reader should keep in mind that the findings of our quantitative survey still require a cross-validating follow-up study before final conclusions can be drawn, especially since our main research model with the two-dimensional interpersonal trust construct at its core, although being inferior to our rival model in terms of internal structure, did gain quite acceptable goodness-of-fit indices after all (see 6.3.4.5.). In other words, before the more-dimensional concept of consumer trust should be completely rejected our empirical findings need to be backed up by additional empirical studies, in order not to hastily reject a potentially valid concept. Recent studies of Gefen (2002b) and Gefen and Straub (2004) also provide indications that consumer trust in e-commerce might be a more-dimensional construct after all.

7.1.2. Influence Factors on Initial Consumer Trust in the Online Vendor

In the rival research model, which was found to fit the data better, five significant influence factors on consumer trust (i.e., trusting beliefs) in the vendor were identified based on the structural equation modeling results: 1) Perceived privacy control, 2) perceived security control, 3) perceived structural assurance of the Internet, 4) perceived website usability, and 5) the consumer's general disposition to trust. The first two influence factors, perceived privacy and security control, represent beliefs about characteristics of the online vendor, whereas the factor perceived structural assurances of the Internet is an institutional-based trust belief (see also sections 2.7.2.1. and 2.7.5). The factor perceived website usability represents a belief about the online vendor's website interface while the factor disposition to trust is a construct representing a personality trait of the consumer (see also sections 2.7.1. and 2.7.5.).

Perceived privacy control

Perceived privacy control was found to have the strongest positive relationship with interpersonal-trusting beliefs in the online vendor. The standardized path coefficient reported by LISREL for this structural path was $\gamma=0.27$ ($t=3.55$, $p<0.05$, in the full rival model including the four control variables; see figure 28 on page 233).

In our study the construct perceived privacy control was defined as *the consumer's belief that the collection and subsequent access, use, and disclosure of consumer's personal information by the vendor meets the consumer's expectations*. Accordingly, the items which were used to operationalize the construct covered the perceived level of assurance by the vendor in regard to not selling customer information to third-parties, the perception of the degree to which the vendor seemed to care about the protection of customer information, and the perception if the vendor would be likely to disclose customer information to unrelated third-parties which do not take part in the order-fulfillment process (see also appendix C).⁸⁸

Our finding corresponds with the results of Pavlou and Chellappa (2001) and Koufaris and Hampton-Sosa (2002b) who also found empirical support for a positive relationship between perceived privacy control and interpersonal consumer trust. Similar to Pavlou and Chellappa's study, we too gained support for a significant positive correlation between the factor

⁸⁸ Note that the respondents in our survey were shown the privacy policy (German: "Datenschutzerklärung") of the selected stimulus online vendor in the course of the presentation of the vendor's website.

perceived privacy control and the factor perceived security control (standardized correlation coefficient $\phi=0.66$, $t=8.40$, at $p<0.05$, in the full rival model including the four control variables). However, a χ^2 -analysis on the discriminant validity of these two factors also provided significant support for our assumption that the two factors are interrelated but distinct from each other (see table 13 in chapter six), just like it was reported in the studies of Pavlou and Chellappa (2001) and Koufaris and Hampton-Sosa (2002b).

Perceived security control

The construct perceived security control was found to be the second strongest predictor of consumer's initial trusting beliefs in the online vendor. The standardized path coefficient reported by the LISREL program for this structural path was $\gamma=0.25$ ($t=2.88$, $p<0.05$, in the full rival model including the four control variables; see figure 28 on page 233).

Perceived security control was defined as *the consumer's belief that the vendor's technical efforts to protect any of the consumer's private or financial information - electronically transferred to or stored by the vendor - from the unauthorized access and manipulation of inappropriate third-parties (e.g., hackers), meet the consumer's expectations*. The items used to operationalize the construct treated the consumers perception of the comprehensiveness of technical safety measures employed by the online vendor and the vendor's usage of technical safeguards for the protection of its consumers.⁸⁹

Our finding that perceived security control positively predicted consumer trust in the vendor again corresponds with the empirical results of Pavlou and Chellappa (2001), Koufaris and Hampton-Sosa (2002b) and Koufaris and Hampton-Sosa (2004) who all reportedly found support for this relationship. While Koufaris and Hampton-Sosa (2002b) also reported that security control had a smaller impact on trust than privacy control, like in our study, Pavlou and Chellappa (2001) found the magnitudes of these relationships to be the other way around (i.e., perceived security had a stronger impact on trust in their study).

⁸⁹ Note that in the course of presenting the stimulus website to the survey respondents they were shown the online vendor's privacy policy, which included some vendor statements on technical safety, and they were shown a short section of the website with vendor information on its data security measures. Both sections are relatively easy accessible via links at the footer-bar of the specific stimulus website (www.bol.de). Furthermore, during the course of simulating the purchase of a course book during the presentation, upon entering the sub-site featuring the registration-form for new customers, a browser message appeared on the screen informing the user that this was a secure area. Hence, these were the stimuli for the participants.

Perceived structural assurance of the Internet

The third-strongest significant influence factor on consumer's initial trust in the online retailer was the perceived structural assurance of the Internet. The standardized path coefficient of this path was $\gamma=0.16$ ($t=2.89$, $p<0.05$, in the full rival model including the four control variables; see figure 28 on page 233). This result corresponds with the studies of McKnight et al. (2002) and Gefen et al. (2003) who also found empirical support for a positive relationship between structural assurance beliefs toward the Internet (an element of institutional-based trust) and interpersonal trusting beliefs in the online vendor. Similarly, Einwiller (2002) found her conceptually related construct perceived system reputation (i.e., reputation of the Internet as shopping environment) to be a predictor of consumer's trust in an online vendor.

In our study we have conceptualized this institutional-based trust belief in accordance with McKnight et al. (2002) and used their definition for the construct. Subsequently, perceived structural assurance of the Internet was defined as *the consumer's belief that the Internet has protective legal and technological structures that assure that the online business can be conducted in a safe and secure manner* (cf. McKnight et al., 2002, p. 304-305). Following this definition we operationalized this factor with items treating the respondent's perception of online consumer rights protection by Austrian and European laws and perceptions about the general protection of online shoppers through encryption techniques and other technical and legal structures on the Internet (see also appendix C).

Perceived website usability

Perceived usability of the vendor's website was another factor reportedly having a significant positive relationship with interpersonal-trusting beliefs in our study. This construct was defined as *the user's (i.e., consumer's) belief that the online vendor's website satisfies the user's expectations of clarity and user-friendliness and that it enables easy navigation during all tasks the user wants to perform on the website*. In the final measurement model this construct was operationalized with three items covering the perceived ease of use of the website, the perception of how easy it is to conduct a transaction at the website, and the perception of the navigational effort needed to retrieve information (see also appendix C). The standardized path coefficient of the causal relationship between perceived website usability and trusting beliefs in the online vendor was $\gamma=0.15$ ($t=2.35$, $p<0.05$, in the full rival model including the four control variables; see figure 28 on page 233). This result provides support for prior empirical findings by other scholars. Perceived ease of use of the website was also

previously found to be a significant predictor of interpersonal consumer trust by Koufaris and Hampton-Sosa (2002a, 2004) and Gefen et al. (2003), while McKnight et al. (2002) found their conceptually related construct perceived website quality to be an important antecedent of trusting beliefs, too (McKnight et al., 2002). Furthermore, Roy et al. (2001) gained empirical support for their hypothesis that perceived usability (especially the ease of navigation) has a positive influence on consumer's perceived trustworthiness of an online vendor. Hence, our finding corresponds well with those of prior empirical studies.

Disposition to trust

The construct disposition to trust, grounded in social psychology literature (Rotter, 1967; McKnight et al., 1998; see also section 2.7.1.), was conceptualized in this study as *a generalized belief held by the individual that people are generally trustworthy (faith in humanity) and that generally better outcomes will be reached by cooperating with people (trusting stance) regardless if they really are reliable or not*. The three items used to operationalize this personality trait asked respondents for their level of agreement on statements regarding the trustworthiness of other people in general, their tendency to rely on other people and their general willingness to trust other people (see appendix C). The standardized path coefficient of the structural relationship between the consumer's disposition to trust and trusting beliefs in the online vendor turned out to be $\gamma=0.12$ ($t=2.27$, $p<0.05$, in the full rival model including the four control variables; see figure 28 on page 233). This finding corresponds with the research of Gefen (2000) and Teo and Liu (2002), who also found the consumer's general disposition to trust other people to be a direct antecedent of trust in the online vendor, and it fits with the work of Lui and Jamieson (2003) who reported disposition to trust to be a significant predictor of consumer trust in the transaction system of the online vendor.

A final summary of the results of our study regarding the support or rejection of all our a-priori research hypotheses is provided in table 15. A graphical overview of the final (rival) research model and its empirically supported underlying structural relationships is presented in figure 31 below.

Hypothesis	Description	Part of Model:	Finding
H ₁	Consumer's trusting beliefs will be positively related to consumer's trusting intention to depend on the online vendor.	M2 and M4	Supported
H ₂	Perceived privacy control is positively related to consumer's trusting beliefs in the vendor.	M1 to M4	Supported
H ₃	Perceived privacy control is positively related to consumer's intention to depend on the vendor.	M2 and M4	Rejected
H ₄	Perceived security control is positively related to consumer's trusting beliefs in the vendor.	M1 to M4	Supported
H ₅	Perceived security control is positively related to consumer's trusting intention to depend on the vendor.	M2 and M4	Rejected
H _{6*}	Perceived information quality is positively related to consumer's trusting beliefs in the online vendor.	M1 to M4	Rejected
H _{7*}	Perceived information quality is positively related to consumer's trusting intention to depend on the online vendor.	M2 and M4	Rejected
H _{8*}	The perceived visual design of the website is positively related to consumer's trusting beliefs in the vendor.	M1 to M4	Rejected
H _{9*}	The perceived visual design of the website is positively related to consumer's trusting intention to depend on the vendor.	M2 and M4	Supported
H _{10*}	The perceived usability of the website is positively related to consumer's trusting beliefs in the vendor.	M1 to M4	Supported
H _{11*}	The perceived usability of the website is positively related to consumer's trusting intention to depend on the vendor.	M2 and M4	Rejected
H ₁₂	Perceived situational normality is positively related to consumer's trusting beliefs in the vendor.	M1 to M4	Rejected
H ₁₃	Perceived situational normality is positively related to consumer's trusting intention to depend on the vendor.	M2 and M4	Rejected
H ₁₄	Perceived structural assurance of the Internet is positively related to consumer's trusting beliefs in the vendor.	M1 to M4	Supported
H ₁₅	Perceived structural assurance of the Internet is positively related to consumer's trusting intention to depend on the vendor.	M2 and M4	Supported
H ₁₆	Disposition to trust is positively related to consumer's trusting beliefs in the vendor.	M1 to M4	Supported
H ₁₇	Disposition to trust is positively related to consumer's trusting intention to depend on the vendor.	M2 and M4	Supported
H ₁₈	Perceived risk of the Internet is positively related to consumer's perceived risk of transacting with the online vendor.	M1 to M4	Supported

Table 15: Summary of Research Hypotheses and Findings of the Quantitative Survey.

Hypothesis	Description	Part of Model:	Finding
H ₁₉	Perceived design of the website is correlated with perceived usability of the website.	M1 to M4	Supported
H _{20*}	Perceived information quality is correlated with perceived design of the website.	M1 to M4	Supported
H _{21*}	Perceived information quality is correlated with perceived usability of the website.	M1 to M4	Supported
H ₂₂	Perceived privacy control is positively correlated with perceived security control.	M1 to M4	Supported
H ₂₃	Structural assurance of the Internet is negatively correlated with perceived Internet risk.	M1 to M4	Supported
H ₂₄	Structural assurance of the Internet is positively correlated with disposition to trust.	M1 to M4	Supported
H ₂₅	Perceived Internet risk is negatively correlated with disposition to trust.	M1 to M4	Supported
H ₂₆	Structural assurance of the Internet is positively correlated with perceived privacy control.	M1 to M4	Supported
H ₂₇	Structural assurance of the Internet is positively correlated with perceived security control.	M1 to M4	Supported
H _{28*}	Perceived situational normality is positively correlated with perceived information quality.	M1 to M4	Supported
H ₂₉	Perceived situational normality is positively correlated with perceived privacy control.	M1 to M4	Supported
H ₃₀	Perceived situational normality is positively correlated with perceived security control.	M1 to M4	Supported
H _{31*}	Perceived situational normality is positively correlated with perceived design of the website.	M1 to M4	Supported
H ₄₁	Perceived situational normality is positively correlated with perceived usability of the website.	M1 to M4	Supported
H ₃₂	Trusting beliefs in the vendor are positively related to intended purchase.	M1 to M4	Part. supp. in M1, M3
H ₃₃	Trusting intention to depend on the vendor is positively related to intended purchase.	M2 and M4	Supported
H ₃₄	Trusting beliefs in the vendor are positively related to intended return.	M1 to M4	Part. supp. in M1, M3
H ₃₅	Trusting intention to depend on the vendor is positively related to intended return.	M2 and M4	Rejected

Table 15: Summary of Research Hypotheses and Findings of the Quantitative survey
(continued).

Hypothesis	Description	Part of Model:	Finding
H ₃₆	Trusting beliefs in the vendor is negatively related to perceived risk of transacting with the vendor.	M1 to M4	Supported
H ₃₇	Trusting intention to depend on the vendor is negatively related to perceived risk of transacting with the vendor.	M2 and M4	Supported
H ₃₈	Perceived risk of transacting with the vendor is negatively related to intended purchase.	M1 to M4	Supported
H ₃₉	Perceived risk of transacting with the vendor is negatively related to intended return.	M1 to M4	Supported
H ₄₀	Intended purchase is positively related to intended return.	M1 to M4	Supported
H ₄₂	Satisfaction with the vendor's terms and conditions will be positively related to consumer's intention to purchase from the online vendor.	M3 and M4	Supported
H ₄₃	Satisfaction with the vendor's terms and conditions will be positively related to consumer's intention to return to the online vendor.	M3 and M4	Rejected
H ₄₄	Product simplicity is positively related to consumer's intention to purchase from the online vendor.	M3 and M4	Rejected
H ₄₅	Product simplicity is positively related to consumer's intention to return to the online vendor.	M3 and M4	Rejected
H ₄₆	Price satisfaction is positively related to consumer's intention to purchase from the online vendor.	M3 and M4	Supported
H ₄₇	Price satisfaction is positively related to consumer's intention to return to the online vendor.	M3 and M4	Supported
H ₄₈	Perceived switching costs are negatively related to consumer's intention to purchase from the online vendor.	M3 and M4	Supported
H ₄₉	Perceived switching costs are negatively related to consumer's intention to return to the online vendor.	M3 and M4	Rejected
H ₅₀	Satisfaction with the terms of the vendor is positively correlated with price satisfaction.	M3 and M4	Supported
H ₅₁	Perceived switching costs are negatively correlated with satisfaction with terms of the vendor.	M3 and M4	Supported
H ₅₂	Perceived switching costs are negatively correlated with price satisfaction.	M3 and M4	Supported

* An asterisk next to a hypothesis indicates that the original hypothesis (see chapter four) was adapted after the analysis of the qualitative focus group study (see chapter five).

Hypotheses written in gray font represent hypotheses which were *only* included in the reduced main research model (figure 27) and the full main research model (figure 29) which were found to fit the data worse than the reduced rival model (figure 26) and the full rival model (figure 28) (cf. chapter 6).

Table 15: Summary of Research Hypotheses and Findings of the Quantitative Survey
(continued).

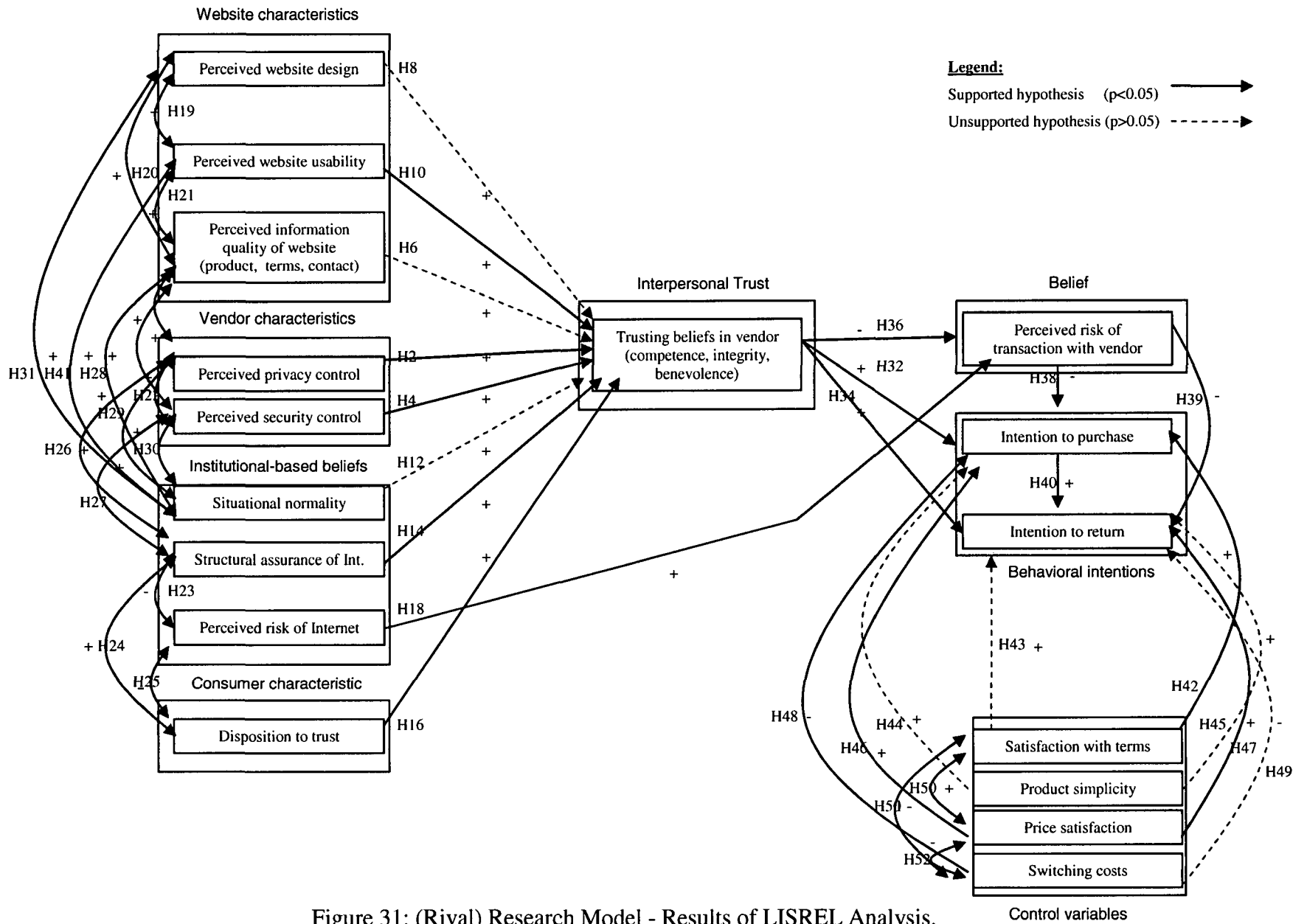


Figure 31: (Rival) Research Model - Results of LISREL Analysis.

7.1.3. Relative Importance of Trust in the Consumer's Decision to Transact with the Online Vendor

Due to many of the participants in our exploratory focus group study (see chapter five) mentioning that for them, the online vendor's terms and conditions of business, the product characteristics, as well as the vendor's prices are very important in their decision to adopt a certain online vendor, we included the control variables satisfaction with the vendor's terms, perceived product simplicity and satisfaction with the vendor's prices in our research model. Furthermore, a number of focus group participants additionally stated that they are less likely to adopt a new online vendor if they already have successfully transacted with another online vendor in the past selling the specific product or the product category they are looking for. Therefore, we also included the fourth control variable perceived switching costs in our model. The inclusion of these four control variables enabled us to test a very interesting scenario, namely the relative importance of the "soft" factor initial consumer's trust in the online vendor for the consumer's decision to engage in a transaction with an (previously) unfamiliar online vendor, if more objective, "hard" factors, like the perceived satisfaction with the vendors terms (e.g. regarding payment and delivery) and its prices or perceived switching costs are taken into account as well.

To date many empirical studies on online consumer trust (see chapter three) have analyzed research models in which either only interpersonal consumer trust was used to predict consumer's behavioral intention to purchase (e.g., in Koufaris and Hampton-Sosa, 2002a), or interpersonal consumer trust and such factors like perceived risk and attitudes toward the transaction were used to predict consumer's intention to purchase (e.g. in Teo and Liu, 2002; McKnight et al., 2002; Suh and Han, 2002). Several online trust studies additionally included perceived ease of use and/or perceived usefulness of the vendor's website, two major constructs of the Technology Acceptance Model, as predictors of intended purchase with or usage of the vendor (e.g. in Koufaris and Hampton-Sosa, 2002b; Gefen et al., 2003 ; Lui and Jamieson, 2003; Pavlou, 2003). However, the vast majority of online trust studies did not at all include *economic* aspects like for example the perceived price level or consumer's perceptions of the vendors terms of business. Only Gefen (2002a) did include the construct perceived costs to switch to another vendor in his model as predictor of consumers' loyalty toward an online vendor and Chiou (2003) included consumer trust and the monetary factor perceived value (i.e., the perception of the services as being a good buy/good value for the

money paid) among other factors in a study on consumer loyalty in an Internet provider. Aside from Gefen's and Chiou's studies (cf. chapter three) to best of our knowledge to date no other empirical work on consumer trust in e-commerce has investigated the relative impact of factors like our four control variables (i.e., satisfaction with the vendor's terms, perceived product simplicity, satisfaction with the vendor's prices and perceived switching costs) on consumer's behavioral intention to transact with an online vendor in comparison to consumer's trust in that vendor.

The findings of our quantitative survey (reported in chapter six) revealed that our rival model without the four control variables (see figure 26 in section 6.3.4.1.), indicated a standardized path coefficient of $\beta=0.28$ for the relationship between initial consumer's trust in the online vendor and consumer's intention to purchase from the online vendor as well as a standardized path coefficient of $\beta=0.11$ for the relationship between initial consumer's trust and consumer's intention to return to the online vendor. However, after the four control variables were added to the research model the causal relationship between initial consumer trust and consumer's intention to purchase from the online vendor was re-evaluated and found to have lost significantly in magnitude, dropping to a standardized path coefficient of $\beta=0.13$ (i.e., it was reduced by -0.15). On the other hand, the standardized path coefficient for the relationship between initial consumer trust and consumer's intention to return to the online vendor remained almost unchanged with $\beta=0.10$.

At the same time the relationship between the newly added control variable consumer's satisfaction with the vendor's terms and the variable consumer's intention to purchase resulted in a standardized path coefficient of $\gamma=0.27$, hence, double the magnitude of the relationship between initial consumer's trust and purchase intention in the final, full rival model (cf. figure 28). Perceived costs to switch to the online vendor were also found to have a relatively strong negative relationship with consumer's purchase intention, resulting in a standardized path coefficient of $\gamma=-0.21$, while the control variable consumer's satisfaction with the vendor's prices ($\gamma=0.11$) had an almost equally strong influence on consumer's purchase intention like consumer's initial trust in the online vendor. However, the fourth control variable, perceived product simplicity, did not affect consumer's behavioral intention to purchase nor to return to the online vendor.

Based on these findings we may conclude that (initial) consumer's trust in the online retailer is an important factor in the consumer's decision to engage with an online vendor but there is strong empirical evidence that it is certainly not the most important one. Comparatively "harder" facts like price and the terms of business (e.g., accepted means of payment, terms of delivery such as delivery charges to be paid by the customer or the delivery period, etc.) and perceived costs to switch to the online vendor seem to play an even stronger role. Hence, the consumer's perceived ratio between costs (monetary costs, psychological costs, etc.) and benefits of selecting the online vendor given other online and offline alternatives to purchase products is more important than just the initial perception that the given online vendor is trustworthy (i.e., perceived to be competent in doing its job and benevolent and honest towards its customers).

While many scholars, like for example Urban, Sultan and Qualls (2000, p. 39) state that "Consumers make Internet buying decisions on the basis of trust." our findings put such statements into a little perspective. Based on the results of both, our qualitative focus group study and our quantitative survey we can conclude that consumers' interpersonal trust in the online vendor is important *but* it is definitely not the sole and single most important basis for consumers to adopt an online vendor. In fact it is not too surprising that the price and the vendor's terms are not just important for consumers in deciding if they should buy at an offline retail store "around the corner" but also when it comes to purchasing products on the Internet.⁹⁰ Nevertheless, we clearly acknowledge that online consumers still need to be able to trust the information the vendor is presenting on its website and the promises made by the vendor, especially because there are fraudulent, opportunistic parties with fake websites operating on the Internet too, trying to trick consumers and to get their credit-card information, a risk consumers are very aware of due to strong media coverage of such incidents (Chellappa and Pavlou, 2002; The US Federal Trade Commission, 2004). In other words, perceived trustworthiness and credibility of the online vendor are surely important prerequisites for a consumer's decision to remain at the website of an unfamiliar vendor, to browse through its offers and to consider purchasing from the online store. Although price, terms of business and switching costs turned out to be more important in our study when it comes to the consumers' decision of buying from the online vendor, we assume that

⁹⁰ Also Ring and Van de Ven (1992, p. 489), in developing a theoretical framework for inter-firm cooperations and trust, proposed that „[t]rust is a necessary, but not sufficient condition for market transactions, *ceteris paribus*.“

consumers' initial trust in the online vendor is strongly interrelated with all other perceptions of the vendor, its website and all information provided there. Hence, trust is likely to color and influence consumer's perceptions and decisions in the online purchase situation. For example a very competitive price and very liberal terms of delivery or a liberal return policy may still not be tempting at all if the consumer has a very bad feeling about the vendor's intentions, honesty, integrity or technical competence (see also section 3.3.5.).

As we already have mentioned in our limitations section in section 6.3.5. we once more would like to point the reader to the fact that the respondents in our study did not interact themselves with the stimulus website and filled out the questionnaire based on the information they had seen during the presentation of the vendor's website (for details on the content and structure of the presentation see section 6.1.3.). While we believe that the perceived switching costs and the satisfaction with the terms of vendor were relatively easy to evaluate by our survey respondents, the participants in our study might have not have remembered the prices of the products they had seen during the website-presentation and therefore the factor price satisfaction may have been harder to evaluate for the respondents. In addition, the factor perceived product simplicity turned out to have no effect on consumers' purchase or return decisions. This finding might have also been due to the relatively standardized, low-touch product (i.e., course books) chosen for the presentation and simulation of the online purchase. Therefore, the reader should keep these aspects in mind.

7.1.4. Additional Exploratory Findings

In addition to testing our formal a-priori research models we also conducted a few exploratory post-hoc analyses with our data, as already reported in sections 6.3.4.5. and 6.3.5, in chapter six:

First of all, we detected a very strong mediating effect of the construct trusting intention to depend on the vendor, if it is included in the path model between the constructs trusting beliefs in the vendor and perceived risk of transacting with the vendor and the two behavioral intentions to purchase from and to return to the online vendor respectively. Although our main research model, with trusting beliefs and trusting intention (i.e., both interpersonal trust dimensions) at its core, was rejected based on problems with its internal structure, this mediating effect may still be regarded a valid finding since we subsequently tested these

factors (i.e., trusting beliefs, trusting intention, perceived risk, purchase intention and return intention) independently from the rest of the constructs included in the full model, following Baron and Kenny's (1986) recommendations and thereby eliminating potential misleading interaction effect of these other factors (see section 6.3.4.5.). This finding strongly suggests trusting intention to be a (full) mediating variable for the effect of trusting beliefs on the three dependent variables, if trusting intention is added to the nomological network linking these constructs (see figure 30). This finding is contrary to our initial conceptualization in the main research model in which, following the works of McKnight and Chervany (1996, 2001, 2001-2002) and McKnight et al. (2000, 2002), we had posited trusting beliefs and trusting intention both having significant positive causal relationships with perceived risk and consumer's behavioral intentions to purchase and to return (i.e., the dependent variables).

Secondly, as already reported in chapter six (section 6.3.5.), we computed independent sample t-tests⁹¹ to explore the effects of gender and past online purchase experience (i.e., e-commerce adopters versus e-commerce non-adopters) on the means of the items included in our final measurement model. Regarding the effect of the gender of the respondents only the first item of the intention to return scale (its item-wording covered the likelihood to return to the online vendor) was found to have a significantly lower mean among women and all items of the factor perceived risk of transacting with the online vendor were found to have significantly higher means among the women, signaling that women generally perceived higher risks than men (mean difference of 0.29 for the first risk item and a mean difference of 0.28 for second risk item at, both at $p < 0.05$ level). Yet, these were the only gender differences detected in the t-test. In other words, the gender of the respondents had no significant influence on the means of the items forming the latent factors perceived privacy control, perceived security control, perceived structural assurance of the Internet, perceived website usability, and consumer's disposition to trust (Similarly, Gefen, 2002a, did not find gender differences in his research model on online consumer trust, except for the variable perceived risk with the online vendor, like in our study; see also similarly Akhter, 2003, Garbarino and Strahilevitz, 2004, and Powell and Ansic, 1997, for studies reporting gender differences in the perception of risk).

⁹¹ The overall number of cases used in these t-tests was 433 (i.e., only cases/respondents non-familiar with the stimulus website were used, just like in our LISREL analyses). Missing values were excluded by the option "analysis per analysis" provided by SPSS. Furthermore, Lvene's test for equality of variances was used, with the cut-off value $p \leq 0.05$.

The effect of prior online shopping experience was marginally higher in terms of the number of items showing mean differences in the t-test. It was found that the second usability item, covering the ease of use of the website, turned out to have a minimally lower mean among e-commerce adopters (German item wording: “Diese Webseite ist einfach zu bedienen.”, English translation of item: “This website is easy to use.”). One potential explanation for this finding might be that e-commerce adopters may generally be more experienced Internet users and thus, adopters may be more experienced in navigating through websites and are therefore more critical when it comes to site usability than non-adopters, who may generally rather be novice or semi-experienced Internet users. Also the first item of the factor perceived risk of transacting with the online vendor was found to have a lower item-mean among e-commerce adopters, suggesting that respondents who already had bought something online in the past perceived less risk of a potential transaction with the vendor. Furthermore, two of the control variables, namely, the satisfaction with the vendor’s terms and the perceived switching costs were found to have significant mean differences, too. E-commerce adopters perceived the terms of the vendor generally less favorable (i.e., their item-mean being lower by 0.21, at $p < 0.05$) and e-commerce adopters also perceived higher switching costs (i.e., higher item-mean by 0.34, at $p < 0.05$) (for an overview of the measurement instrument’s items and their German wordings see appendix C).

These findings primarily suggest that 1) women perceive online purchases as more risky⁹², 2) consumers who already have conducted online purchases in the past are more critical when it comes to the vendor’s terms, and 3) people who already are e-commerce adopters perceive higher costs of switching to a new online vendor, most likely because they are satisfied with and loyal to the online vendor(s) they already patronize. The latter, third finding may be caused by the fact that we presented our survey respondents with books, which are a relatively standardized product category and where price differences usually are marginal or do not exist at all due to Austrian and German price legislation. Therefore, consumers may have less motivation to switch to another online bookstore and struggle through the registering process there if they already are a client of e.g., Amazon.de.

⁹² In fact of the 497 respondents in our study 64.1% of the women (i.e., 175 women) were online-shoppers compared to 79.3% of the men (i.e., 169 men) being online shoppers. 11 respondents did not answer the relevant questions in the questionnaire, resulting in 11 non-interpretable missing cases.

7.2. Theoretical Implications and Future Research

In terms of theory building, this thesis contributes in a number of ways to the growing body of literature on consumer trust in electronic commerce:

In the course of this thesis we have developed a comprehensive research model for the context of initial consumer trust formation in electronic commerce, including nine antecedents of interpersonal trust and four (i.e., in the main model) as well as three consequences (i.e., in the rival model) of interpersonal trust (trusting beliefs) respectively. Furthermore, we have added four control variables to our research model, based upon the findings of the qualitative, exploratory focus group study, subsequently showing that three of these four control variables additionally predicted consumers intention to purchase from the online vendor and one of these three control variables also predicted consumer's intention to return to the online vendor in the future. Overall, the superior rival model gained very acceptable goodness-of-fit indices, especially in the light of the size and complexity of our model. Hence, our research model, which synthesized findings of 24 prior empirical studies on online trust, makes an important contribution to the online trust literature and can be used as valuable starting point for future conceptual and empirical trust research. Additionally, this study was one of the very first to empirically test theoretical concepts and nomological networks on consumer trust in e-commerce, (primarily) developed by US-scholars based on studies conducted in the USA, for their suitability in explaining initial trust formation of Austrian Internet users. Summarizing our findings, the adoption of these concepts for the case of Austrian respondents proved to be relatively successful, suggesting that US-American trust-models are transferable into the Austrian context.

Our findings furthermore suggest that the two-dimensional conceptualization of interpersonal trust, as suggested by McKnight and his colleagues (see also section 2.7.3.), may not be the optimal theoretical conceptualization of the empirical reality (see also the criticism of Morgan and Hunt, 1994, on the two-dimensional view of trust, in section 7.1.1.). Indeed, our findings resulting from a comparison of our main model and our rival model propose that consumer's interpersonal trust in an online vendor may be only consisting of trusting beliefs in the vendors' competence, integrity and ability, rather than being a combination of trusting beliefs and the trusting intention to depend on the vendor. While the latter view of interpersonal trust has been propagated by McKnight and his colleagues in a number of conceptual papers (e.g.,

McKnight et al., 1998; McKnight and Chervany 1996, 2001, 2001-2002) our study is only the second empirical study testing this assumption, following a first empirical study by McKnight et al. (2002). While McKnight et al. (2002) found support for their hypothesis our study did not satisfactorily support this view of interpersonal trust. These contradicting findings provide other trust researchers with a promising starting point for future studies on the nature of consumer trust in e-commerce.

Regarding the antecedents of interpersonal trust in the online vendor, our findings suggest privacy and security activities of the vendor being most important for consumers' initial trust formation, followed by perceived structural assurances protecting consumers conducting online purchases (i.e., institutional-based trust beliefs), by the usability of the vendor's website, and by the consumers' general disposition to trust other people. Regarding the consequences of interpersonal trust we found perceived risk of transacting with the online vendor, consumer's purchase intention and return intention to be affected by initial trust in the online vendor. Interestingly, the visual design of the vendor's website, the information quality of the website and perceived situational normality (another institutional-based trust belief) were found to have no impact on initial interpersonal trust in the online vendor. While one may accept that the website's visual design may not be crucial for consumers' initial trust formation, contrary to our expectations also the information-quality of the vendor's website and the perception that the situation is normal and customary did not affect consumers' initial trust. Future studies may want to further explore and cross-validate these unexpected findings and test if these results prove to be replicable in other studies.

Although our research model (see figure 31, in section 7.1.2.) incorporated a relatively large number of trust-antecedents, the relatively mediocre squared multiple correlation value of 0.45 for the construct trusting beliefs (in the full rival model) suggests that there are still other antecedents of initial consumer trust in the vendor which are currently not included in the model. The same seems to be true for the construct purchase intention, which gained a relatively low squared multiple correlation value of 0.29.⁹³ Future studies on (initial) consumer trust in online vendors should try to explore and include additional antecedents of trust, as well as of the consumer's behavioral intention to purchase from the online vendor.

⁹³ The squared multiple correlation value (or coefficient of determination or R²) for an endogenous variable in the LISREL program may range between 0 and 1, with higher values signaling a larger amount of variance explained by the structural equations (cf. Jöreskog and Sörbom, 1996, pp. 26-27; Homburg and Giering, 1996).

Since our multi-method research design, which merged qualitative (i.e., the focus group study) and quantitative methods (i.e., the survey), successfully supported us to end up with a number of new insights and hypotheses not reported in past online trust literature (see chapter five and specifically section 5.4.), future studies may also want to employ such multi-method designs in determining additional antecedents of (initial) consumer's trust and purchase intention. Fellow trust-researchers may already find some ideas for additional antecedents of interpersonal trust in chapters three and five of this thesis.

In addition, our study also has significant implications for research on the relative importance of interpersonal trust in the consumer's decision to engage in a transaction with an (previously) unfamiliar online vendor. The inclusion of the control variables in our final research models showed that when the factors perceived satisfaction with the vendor's terms, perceived satisfaction with the vendor's prices and perceived switching costs are added, the relative importance of initial trust in the online vendor on consumer's intention to purchase from the online vendor is significantly reduced. Especially consumers' satisfaction with the vendor's terms of business and consumer's perceived costs to switch to the vendor have significantly more impact on the purchase intention than has trust. Consequently, this rather exploratory finding on the impact of these factors may act as a promising basis for future research trying to investigate the relative importance of interpersonal trust in the online purchase decision process of consumers. In the light of these findings it might be also interesting for future studies to test if consumer trust in the online vendor rather acts as a moderating variable than a mediating variable between consumers' perceptions of characteristics of the vendor and its website and consumers' intentions to transact with the vendor.⁹⁴

Although online consumer trust research in Austria and other Germanic countries is still in its infancy and essentially no validated Germanic trust-scales for our context of research existed at the time we started working on this doctoral thesis, we were able to generate and validate a comprehensive measurement instrument for the case of initial consumer's trust formation in an online vendor and for all other theoretical constructs used in our models by adapting and

⁹⁴ According to Baron and Kenny (1986, p. 1174) "a moderator is a qualitative (e.g. sex, race, class) or quantitative (e.g. level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent variable or criterion variable" and "moderation implies that the causal relation between two variables changes as a function of the moderator variable".

translating suitable English items taken from international scholarly journal publications and by creating several new items from scratch. A lot of time and effort went into the rigorous pretests and the pilot study to ensure content validity and construct validity (i.e., construct reliability, convergent and discriminant validity) of our newly-developed scales, which are important prerequisites of valid and meaningful measurement. Our final 42-item measurement instrument passed all recommended tests for validity and the final scales all gained quite satisfactorily Cronbach's Alpha reliability values between 0.76 and 0.89 and composite factor reliabilities between 0.76 and 0.93 respectively.⁹⁵ Consequently, this thesis provides scholars in Austria and other Germanic countries with a solid, validated measurement instrument, ready to be employed in future studies on (initial) consumer trust in electronic commerce.

This thesis provides fellow online trust researchers also with a number of other fruitful avenues for future research. First of all there is a definite need for cross-validating studies to check for the generalizability of our findings. Researchers should use our measurement instrument and our research model and try to replicate our findings with other, more representative samples of the current (Austrian) Internet population. It would as well be interesting to try to replicate this study in other Germanic countries such as Germany or Switzerland. Furthermore a translated version of our measurement instrument could be used for cross-validating studies in other regions of the world, for example North-America. This would additionally provide the opportunity to investigate if cultural differences exist and their effect on the structural relationships in the research model. Since our construct dispositional trust is derived from social psychological research and considered to be a personality trait influenced by the individual's upbringing and social environment, especially this factor is likely to vary across different cultures (Gefen, 2000) but also perceived risk may vary across cultures (Weber and Hsee, 1998).

Secondly, while we relied on a cross-sectional, quantitative paper-pencil survey in this thesis, future studies should not only rely on surveys but try to employ different methodologies. A major shortcoming in the field of online consumer trust research is the current lack of experimental research and longitudinal studies. While almost all empirical research in this field (see chapter three), including our study, only measured consumer's behavioral intentions to transact with an online vendor, experiments and longitudinal studies would enable

⁹⁵ Note that only the information quality scale did not exceed the recommended AVE-value of 0.50 (Fornell and Larcker, 1981) and reached an AVE minimally below 0.50.

researchers to investigate causation. Hence, such studies could provide trust researchers with the opportunity to go beyond behavioral intentions and measure real, overt behavioral manifestations of consumer trust.

Since we have pointed out the dynamic nature of trust in this thesis in section 2.6. and limited ourselves to the phase of initial trust formation, future studies may want to investigate different phases and stages of consumer trust in an online vendor. For example the phase of trust building and ongoing trust or situations of re-building of trust. Focusing on different phases of trust future studies may also include additional antecedents and consequents of interpersonal trust in their research models (e.g., satisfaction with prior online purchases at the specific vendor – customer satisfaction, loyalty, word-of-mouth, switching intentions, brand-effects, etc.)

Furthermore, while our study used an online retail store selling books, CDs, DVDs, PC games and software as stimulus for the survey respondents, future studies may want to test our research model for other online industries and product groups (e.g., consumer electronics, computer hardware, financial services, etc.), too. Different industries or products may potentially result in considerably different outcomes regarding the significance and importance of the antecedents of consumer trust as well as its consequences.

Finally, we would like to point out that scholars engaging in online trust research should not only try to test (completely) new research models in each new study, as it is currently mostly the case (see the literature review chapter three) but more often try to replicate and cross-validate existing models. In addition, there is a need for more programmatic research among online trust researchers because as Bagozzi and Yi (1988, p. 92) stated: “In any event, programmatic research is likely to be easier to evaluate and to generate more valid knowledge than one-shot studies.”

7.3. Managerial Implications

The field of B2C electronic commerce is a very fast-moving market in which the few big leading companies are very dynamic and care a great deal about innovations and the improvement of their transaction processes and online storefronts, frequently by the usage of

own large R&D teams. In such a fast-moving sector, academic research tends to lag behind a lot of times, being limited to analyzing why some companies are more successful than others, or why some industry innovations succeed and others fail and their influence on consumers' purchasing behavior. Nevertheless, there are still a number of interesting managerial implications which can be drawn from the findings presented in the course of this thesis. Since we deliberately limited the major scope of this research to initial consumer's trust formation in an online retail store the consumer was not previously aware of before the initial contact with the vendor's website, our findings tend to be limited to this context. However, our results may be especially valuable for the numerous smaller, regional online vendors not being in possession of such well-known global brand names like Amazon.com, Dell.com or eBay.com or even well-known national or regional brand names such as the companies Quelle.de and Otto.de or the brick-and-click shop Eduscho.at/Tchibo.at.

The first managerial implication for online retailers is derived from our finding that perceived privacy control contributed most to consumer's initial trust in the online vendor. This strongly suggests that the information presented at the vendor's website on how personal information of customers will be handled, used and protected by the company is very important to online shoppers. Clearly one of the major sources of information on this issue is the vendor's privacy policy. While in recent years it almost became an industry standard to provide a privacy policy somewhere on the website - a standard which more and more online vendors adopt - our findings once more indicate this feature to be of great importance in the eyes of the consumers. Having a privacy policy is one way of signaling the customers that the company has thought about this issue and that it takes peoples privacy concerns serious. Generally, the privacy policy should be easy accessible for the customer on the vendor's website, for example by placing a constantly visible link at the footer- or header-bar of the site. Yet, just having a privacy policy on the website is not enough. The privacy policy should be clear and easy understandable for the readers and should assure that customers' privacy is protected. One way of signaling privacy awareness to customers could also be to use "opt-in" rather than "opt-out" privacy policies. Such a privacy policy, protecting customers' interests, possibly also assuring customers to ask them for their consent before their personal information is shared with third parties (i.e., informed-consent), or including information on how long customer data will be stored, or even providing the customer with the right to order the company to delete her/his personal information upon request from its database, may act as a strong trust-builder (although such restrictive privacy policies can be troublesome for the

company due to partner programs and commerce networks; see Rosencrance, 2000a on such privacy problems faced by Amazon.com; see also Sama and Shoaf, 2002, and Koehn, 2003). Furthermore, the company should severely stick to its privacy policy, announce any changes to it at least prominently on its website and add the date of last change to the privacy policy if it wants to raise customer trust. Honesty towards the customers when it comes to privacy is very important even for “big players” on the Internet as was recently shown by the case of Amazon.com which faced considerable trouble and bad press when changing its original privacy policy to permit the disclosure of personal customer information to third parties (cf. Rosencrance, 2000a, 2000b; see also Roberts, 2003, pp. 364-367 for other online companies receiving bad press due to customer privacy violations). It may also build consumer’s trust if the online vendor provides each customer with the opportunity to access and change her or his stored customer profile at any time (cf. Doherty, 2001). While in North America the additional usage of trusted third-party seals (e.g., seals from TRUSTe www.truste.org, VeriSign www.verisign.com, BetterBusinessBureau’s BBBOnline www.bbbonline.com, CPA Web Trust www.cpawebtrust.org) on commercial websites is quite common and the scholarly trust literature basically agrees on the importance of trusted third-party seals (e.g., Froomkin, 1996; de Laat, 2001), the findings of our focus group study and those of an additional unpublished follow-up snowball survey (see section 5.4. and Kaluscha et al., 2003) indicated that Austrian Internet users are currently still not aware of reputable trusted third-parties granting credible trust-seals to online vendors. Therefore, the benefit of such regional trust-seals (e.g., E-Commerce Quality – Handelsverband <http://www.handelsverband.at/ecommercequality/ecommercequality.htm>, Trusted-Shops <http://www.trustedshops.de>, Eurolabel - Österreichisches E-Commerce Gütezeichen <http://www.guetezeichen.at>), which are of course not without costs for the online vendor, is currently still questionable for Austrian online stores.

The second most important influence factor on consumer’s initial trust formation in the online vendor, closely related to privacy, is security control. Our findings imply that online vendor’s should clearly communicate the usage of encryption techniques, fire-wall systems and other technical safety measures employed to protect the customers’ personal information during and after the online transaction. Online vendors need to employ at least minimum standards such as SSL (Secure Socket Layer) and TLS (Transport Layer Security) and robust encryption, but to gain consumer trust they should do more than that and use state of the art systems (cf. also Pavlou and Chellappa, 2001). However, just employing advanced safety measures is not

enough. Once more communication is the key to consumers' trust. Only few Internet users and online shoppers are experienced IT experts, therefore the online vendor should clearly point out its security measures on its website in an understandable style also suitable and comprehensible for novice Internet users. One potential location for this kind of information is again the vendor's privacy policy but it may also be additionally presented to the user during the purchase process before she or he needs to submit personal and financial information to the vendor over the Internet.

In respect to the vendor's website the findings of our survey suggest that its perceived level of usability contributes to initial consumer trust as well. In other words, when it comes to online shopping a website with good usability will not only enable customers to submit their online orders more easily and facilitate online purchases but good usability will also act as an important trust-building measure. Hence, good usability is likely to be interpreted by the customers as a signal that the vendor is competent and tries to make the online purchase a positive and efficient experience for its customers and that the vendor cares about its customers (i.e., that the vendor is benevolent) (cf. Roy et al., 2001). Online vendors should therefore strive for ensuring that their websites are easy to use, even in the eyes of inexperienced Internet users.⁹⁶ Furthermore, good usability will not only increase trust but also reduce consumers' perceived switching costs which impact consumers' intentions to purchase from the online vendor. Just as one of the participants in our focus group study stated: *"If the website is confusing and I can't find my way through it, I leave the site."* (see table 4, chapter five). Especially procedural switching costs which involve customer's expenditure of time and effort (Burnham, Frels and Mahajan, 2003) are likely to be reduced by such features like an efficient on-site search, an easy to use registration and login procedure and a user-friendly online ordering process (see also Koehn, 2003).

Both, our qualitative and quantitative study additionally suggest that the vendor's terms of business (i.e., accepted means of payment, delivery costs, delivery duration, return

⁹⁶ There are a few scholars and consultants providing their knowledge and experience on web-usability on the Internet. Guidelines and suggestions for good usability can be found at the website of Jacob Nielsen at <http://www.useit.com>, or of Martijn van Welie at <http://www.welie.com/patterns> (van Welie provides a number of usability design patterns on his site which represent best practice solutions for the most common interaction elements of commercial websites). See also Kaluscha and Grabner-Kräuter (2003), Grabner-Kräuter and Kaluscha (2003c) and Van Duyne, Landay and Hong (2003) for a discussion and examples of trustworthy and usable online store design.

guarantees, etc.) are a crucial influence factor when it comes to the consumer's decision to purchase from the online store. In fact, our findings indicate that the consumer's satisfaction with the vendor's terms of business significantly stronger affect consumer's purchase intention with the online vendor than consumer's initial trust in the vendor. Generally speaking, the more the terms of business shift risks, costs and efforts from the customer onto the online vendor, the more favorable the customers should be likely to perceive the vendor's terms. While it is always a matter of costs for the vendor regarding how many concessions the vendor is willing to make in favor of the (prospective) customer, newly established, relatively unknown online vendors with little brand equity and few customers strongly need to consider offering very "customer-friendly" terms of business to attract customers. Especially when the vendor tries to compete in e-markets which are highly competitive and covered by many online vendors (e.g., the online book-market). But even in niche markets online vendors may still be able to gain considerably more clients by offering rather liberal terms of business with lower risks and lower costs for prospective customers. Since many Internet users and online shoppers are still very worried about using a credit-card on the Internet and a number of Germanic Internet users not having an own credit-card at all (cf. e.g., Hermanns and Sauter, 2001, p. 29) (in fact only 165 of the 497 respondents in our sample stated that they are in possession of an own credit-card, see table 8) other means of payment should be accepted too by the vendor (e.g., payment via bank transfer of the money, cash/collect on delivery or payment by paying-in slips).⁹⁷ In addition, the online vendor should try to keep delivery durations to a minimum and if possible cover the delivery costs if the customer purchases goods worth more than a certain amount (e.g., for a purchase of more than EUR 20.- German-based Amazon.de covers all delivery costs for orders from Austria). Although this might be hard for newly established or lesser known online vendors, such "customer-friendly" terms of business may be considered as a crucial investment by the vendor in order to attract more customers (see also Grabner-Kräuter and Kaluscha, 2003d).

Not surprisingly and as hypothesized, we also found empirical support for the importance of the consumer's satisfaction with the prices of the vendor regarding consumer's intention to purchase from the vendor and to return to the online store. Since the Internet provides online vendor's with the potential to cut costs on business premises, personnel, etc. compared to their offline competitors, online vendors should be aware that online shoppers may often tend

⁹⁷ According to Singh, Jayashankar and Singh, 2001, pp. 11-12, in the USA there are on average 1480 credit cards per 1000 customers while in Europe the number is only 390.

to expect prices of goods sold online to be lower than offline. Hence, online vendors should try to realize potential cost advantages and pass them on to their customers to provide their goods at lower prices than at least their offline competitors.

Additionally, the results of our survey suggest that institutional-based structural assurance beliefs toward the Internet and consumer's disposition to trust positively affect consumer's initial trust in the online store. Yet, both of these two factors are outside of the direct control of the online vendor. The first factor, consumer's belief about structural assurance of the Internet, represents peoples perception that there are legal and technical safeguards and guarantees in place protecting consumers conducting online purchases on the Internet. While this aspect cannot be directly influenced by an online vendor there is still the opportunity for online vendors to collaborate and to conduct joint marketing and image campaigns, informing the public about the shopping opportunities on the Internet, the available technical safety measures, the protection of e-consumer rights due to national and European laws or the availability and power of trusted third-party seals. Such campaigns could also be organized jointly with such organization, like for example the Austrian chamber of commerce, federal and regional governments or trusted third-party organizations, such as TrustedShops or Handelsverband. Another long-term strategy for online vendors of indirectly affecting consumer's structural assurance beliefs toward the Internet is also to provide first-class service to their customers, with high technical safety standards and strong privacy protection, which should lead to positive word-of-mouth spreading among consumers and leading to a more positive image of the Internet as being a safe and favorable shopping environment. The second factor, the consumer's disposition to trust, represents a personality trait which might not be influenced by the online vendor. Yet, the online vendor may still need to react to this consumer characteristic. Consumers' disposition to trust is the result of an individual's lifelong experience when interacting with others and may tend to vary across cultures. Hence, online vendors with regional "online outlets" may need to react to countries with generally lower levels of trust by engaging in additional trust-building measures (Gefen, 2000) (e.g., the website of Amazon.com differs from the websites Amazon.de/Amazon.at not only by the language but also by several other different features on the Austrian-German site, like additional payment options, etc.).

Since we focused on initial consumer trust formation in this study, we once more would like to point out that consumer trust is a dynamic concept that changes over time due to the

experiences made in the course of the interactions with the vendor. Positive initial perceptions and initial trust are very important for any (business) relationship, but it is just the very start for everything else to come afterwards. While online vendors need to gain consumers' initial trust this marks only the beginning of a hopefully fruitful, mutually beneficial business relationship. To build and maintain consumers' trust it is crucial that the online vendor sticks to all its promises made on its website for example when it comes to the fulfillment of consumers' orders, the handling of return merchandise or regarding the further usage of consumer's personal data. Attracting new customers and gaining their initial trust is very important for online vendors. However, consumer retention is essential for online vendors because as Reichheld and Scheffer (2000, p. 106) pointed out, "acquiring customers on the Internet is enormously expensive, and unless those customers stick around and make lots of repeat purchases over the years, profits will remain elusive."

7.4. General Conclusion

This thesis presented a survey on consumers' initial trust formation in a previously unfamiliar online retail store, grounded in a solid analysis of the state of the art of general trust literature, a conceptual meta-analysis of prior empirical research on online trust in B2C electronic commerce, an exploratory focus group study and a rigorous scale development including several pre-tests and a pilot study.

The findings gathered, presented and discussed in the course of this thesis provide a number of contributions to the existing body of online trust research. Although we started with a conceptual view of interpersonal consumer trust being a two-factorial construct the findings of our survey suggested that a one-dimensional view of consumer trust, consisting of trusting beliefs in the online vendor's competence, integrity and benevolence, fit the empirical reality better. Initial consumer trust was found to be of considerable importance for consumers' behavioral intentions to transact with the online vendor, although consumers' satisfaction with the vendor's terms and price and perceived costs to switch to the vendor were found to affect consumers' purchase intention even more or at least equally. Regarding the antecedents of initial consumer trust in an online vendor five factors were identified, namely, perceived privacy control, perceived security control, perceived structural assurance of the Internet, perceived website usability and the consumer's disposition to trust. These findings and a

number of others reported in the course of this thesis provide plenty of starting points for future work on online consumer trust. In addition, fellow researchers are provided with a rigorously validated measurement instrument covering 18 theoretical constructs. Furthermore, several managerial implications were drawn from our findings and suggestions for practitioners from the field of B2C electronic commerce were made regarding the opportunities of promoting initial consumer trust.

In a recent article McKnight, Choudhury and Kacmar (2002, p. 298) concluded, that “lack of consumer trust, both in the attributes of specific web-based vendors and in the overall web environment, has been, and remains a hindrance to electronic commerce”. Finally, we believe that this thesis contributes to overcoming this hindrance.

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Appendix A - Initial Item Pool

Items (<i>German wording</i>)	Source
Website Design	
This website is visually appealing.* (<i>Diese Webseite ist optisch ansprechend.</i>)*	adapt. Loiacono et al. (2002)
The website design is creative. (<i>Das Webseiten-Design ist kreativ.</i>)	adapt. Loiacono et al. (2002)
The website's visual appearance is professional.* (<i>Das optische Erscheinungsbild dieser Webseite ist professionell.</i>)*	adapt. Wolfinger and Gilly (2003)
I don't like the design of this website. (<i>Ich mag das Design dieser Webseite nicht.</i>) (reverse item)	adapt. Roy et al. (2001)
The website uses pleasant colors. (<i>Die Webseite verwendet angenehme Farben.</i>)	new item
The design of this online vendor's homepage looks inviting.* (<i>Das Design der Homepage dieses Händlers sieht einladend aus.</i>)*	new item
Website Usability	
It is quick and easy to complete a transaction at this website.* (<i>Es ist schnell und einfach auf dieser Webseite eine Transaktion durchzuführen.</i>)*	Wolfinger and Gilly (2003)
On this website you can find what you want in a minimum number of clicks.* (<i>Auf dieser Webseite kann man alles was man will mit einem Minimum an Mausklicks finden.</i>)*	adapt. Wolfinger and Gilly (2003)
The website has easy-to-understand online order forms. (<i>Die Webseite hat leicht zu verstehende Online Bestellformulare.</i>)	adapt. Janda et al. (2002)
This website offers useful help functions.* (<i>Diese Webseite bietet nützliche Hilfsfunktionen.</i>)*	adapt. Yoon (2002)
The text on the Web site is visually easy to read. (<i>Der Text auf der Webseite ist optisch einfach zu lesen.</i>)	adapt. Loiacono et al. (2002)
On this site, it is easy to find the information I want. (<i>Auf dieser Seite ist es einfach die Informationen zu finden die ich will.</i>)	adapt. McKnight et al. (2002)
Information quality	
This website is a very good source of information (<i>Diese Webseite ist eine sehr gute Informationsquelle.</i>)	adapt. Wolfinger and Gilly (2003)

Table A1. Initial Item Pool.

Items (<i>German translation</i>)	Source
The Web site adequately meets my information needs. (<i>Die Webseite entspricht meinen Informationsbedürfnissen.</i>)	Loiacono et al. (2002)
This online vendor provides accurate product information. (<i>Die Webseite bietet genaue Produktinformationen.</i>)	adapt. Janda et al. (2002)
On this website, sufficient information can be found about the vendor's terms of business.* (<i>Auf dieser Webseite finden sich ausreichende Informationen über die Geschäftsbedingungen des Händlers.</i>)*	new item
The website provides sufficient product information.* (<i>Die Webseite bietet ausreichende Produktinformationen.</i>)*	new item
At this website, sufficient information about the company can be found. (<i>Auf dieser Webseite finden sich ausreichende Informationen über das Unternehmen.</i>)	new item
Overall, the information provided on this website meets my information needs.* (<i>Alles in allem entsprechen die Informationen, die auf dieser Webseite angeboten werden, meinen Informationsbedürfnissen.</i>)*	new item
At this website, comprehensive information can be found on how to get in touch with the company.* (<i>Auf der Webseite finden sich umfassende Informationen darüber, wie man sich mit dem Unternehmen in Verbindung setzen kann.</i>)*	new item
Privacy Control	
This online vendor assures me that information about my online activities will not be shared with other companies.* (<i>Dieser Online Händler sichert mir zu, Informationen über meine Online Aktivitäten nicht mit anderen Unternehmen zu teilen.</i>)*	adapt. Janda et al. (2002)
This company will sell my personal information to third parties without my permission. (<i>Dieses Unternehmen wird meine persönlichen Daten, ohne meine Einwilligung, an Dritte verkaufen.</i>) (reverse item)	Koufaris and Hampton-Sosa (2002b)
This company is concerned about consumer privacy.* (<i>Dieses Unternehmen ist besorgt um die Privatsphäre der Konsumenten.</i>)*	Koufaris and Hampton-Sosa (2002b)
The vendor has clearly stated policies about the proper use of personal and financial information collected during an online purchase. (<i>Dieser Händler hat klar dargelegte Richtlinien für die ordnungsgemäße Verwendung von persönlichen und finanziellen Daten, die während eines Online Einkaufes gesammelt werden.</i>)	adapt. Kim and Prabhakar (2002)

Table A1. Initial Item Pool (continued).

Items (<i>German translation</i>)	Source
I believe that I have control over how the information I provide will be used by this store. <i>(Ich glaube, dass ich die Kontrolle darüber habe, wie die Daten, die ich angebe, von diesem Händler verwendet werden.)</i>	Pavlou and Chellappa (2001)
This online vendor would not pass on my personal data to third parties.* <i>(Dieser Online Händler würde meine persönlichen Daten nicht an Dritte weitergeben).*</i>	new item
Security Control	
This online vendor implements security measures to protect its online shoppers.* <i>(Dieser Online Händler verwendet Sicherheitsmaßnahmen, um seine Online Käufer zu schützen).*</i>	adapt. Koufaris and Hampton-Sosa (2002b)
The web site ensures that transactional information is protected from being accidentally altered or destroyed during transmission on the Internet. <i>(Der Händler stellt sicher, dass Transaktionsdaten davor geschützt werden bei der Übertragung im Internet unbeabsichtigt verändert oder zerstört zu werden.)</i>	adapt. Koufaris and Hampton-Sosa (2002b)
I can verify that this online vendor implements security. <i>(Ich kann bestätigen, dass dieser Online Händler Sicherheitsmaßnahmen verwendet.)</i>	adapt. Kim and Prabhakar (2002)
This online vendor uses sufficient security measures.* <i>(Dieser Online Händler verwendet ausreichende Sicherheitsmaßnahmen).*</i>	new item
This vendor employs encryption techniques to protect the information that customers need to transmit over the Internet.* <i>(Dieser Händler verwendet Verschlüsselungsverfahren zum Schutz der Daten, die Kunden über das Internet versenden müssen).*</i>	new item
The company is anxious to protect customer information from the access or manipulation of third-parties. <i>(Das Unternehmen bemüht sich Kundendaten vor dem Zugriff oder der Manipulation durch Dritte zu schützen.)</i>	new item
Situational Normality	
The steps required to search for and order a book are identical with similar Web sites.* <i>(Die Schritte die notwendig sind, um ein Buch zu suchen und zu kaufen, sind gleich wie bei ähnliche Webseiten).*</i>	adapt. Gefen et al. (2003)

Table A1. Initial Item Pool (continued).

Items (<i>German translation</i>)	Source
<p>The structure of the website of this online vendor resembles those of other websites I know.*</p> <p><i>(Die Webseite dieses Online Händlers ist ähnlich aufgebaut wie andere Webseiten, die ich kenne)*</i></p>	new item
<p>The information requested of me at this Web site is the type of information most similar type Web sites request.</p> <p><i>(Die Informationen die von mir auf dieser Webseite verlangt werden sind von der selben Art wie sie die meisten ähnlichen Webseiten verlangen.)</i></p>	Gefen et al. (2003)
<p>Visually, this site resembles other sites I think highly of.</p> <p><i>(Diese Webseite anderen Seiten, über die ich sehr positiv denke.)</i></p>	adapt. McKnight et al. (2002)
<p>The steps required to purchase a product at this online vendor are unusual compared to similar sites I know.</p> <p><i>(Die Schritte die notwendig sind, um ein Produkt bei diesem Online Händler zu kaufen sind ungewöhnlich, verglichen mit anderen Seiten die ich kenne.)</i> (reverse item)</p>	new item, based upon Gefen et al. (2003)
<p>This website reminds me of other sites I use regularly.*</p> <p><i>(Diese Webseite erinnert mich an andere Seiten die ich regelmäßig verwende.)*</i></p>	new item
Structural assurance of the Internet	
<p>The Internet has enough safeguards to make me feel comfortable using it to transact personal business.</p> <p><i>(Das Internet hat genügend Schutzvorrichtungen, um mich sicher zu fühlen, wenn ich es nutze, um persönliche Geschäfte durchzuführen.)</i></p>	McKnight et al. (2002)
<p>I feel assured that legal and technological structures protect me from problems on the Internet.*</p> <p><i>(Ich bin sicher, dass mich gesetzliche und technische Strukturen vor Problemen im Internet beschützen.)*</i></p>	adapt. McKnight et al. (2002)
<p>I feel confident that encryption and other technological practices on the Internet make it safe for me to do shopping there.*</p> <p><i>(Ich bin sicher, dass Verschlüsselung und andere technische Verfahren im Internet es für mich sicher machen, dort Einkäufe zu tätigen.)*</i></p>	adapt. McKnight et al. (2002)
<p>In general, the Internet is now a robust and safe environment in which to conduct purchases.</p> <p><i>(Im allgemeinen ist das Internet gegenwärtig ein stabiles und sicheres Umfeld, um darin Einkäufe zu tätigen.)</i></p>	adapt. McKnight et al. (2002)

Table A1. Initial Item Pool (continued).

Items (<i>German translation</i>)	Source
The existing legal framework is adequate for the protection of interests of those relying on online services. <i>(Die bestehenden gesetzlichen Rahmenbedingungen sind angemessen, um die Interessen derer zu schützen, die sich auf Online Dienste verlassen.)</i>	adapt. Lui and Jamieson (2003)
I believe that Austrian and European laws also protect consumers' rights on the Internet.* <i>(Ich glaube, dass österreichische und europäische Gesetze die Rechte der Konsumenten auch im Internet schützen.)*</i>	new item
Risk of the Internet	
Entering credit card information over the Internet is unsafe.* <i>(Kreditkarteninformationen über das Internet einzugeben ist unsicher.)*</i>	adapt. McKnight et al. (2002)
I think it is risky to provide one's credit card information to Internet-based vendors. <i>(Ich glaube es ist riskant seine Kreditkarteninformationen einem Internet-basierten Händler zu geben.)</i>	adapt. McKnight et al. (2002)
I would hesitate to enter personal information like my name, address and phone number on the Internet. <i>(Ich würde zögern meine persönlichen Daten wie etwa meinen Namen, Adresse und Telefonnummer im Internet einzugeben.)</i>	adapt. McKnight et al. (2002)
I find it dangerous to shop on the Internet. <i>(Ich finde es gefährlich im Internet einzukaufen.)</i>	Cheung and Lee (2000)
Internet shopping is risky.* <i>(Einkaufen im Internet ist riskant.)*</i>	Cheung and Lee (2000)
Compared with other ways of shopping, buying on the Internet would be more risky.* <i>(Verglichen mit anderen Einkaufsmöglichkeiten wäre es riskanter im Internet einzukaufen.)*</i>	Jarvenpaa et al. (2000)
Disposition to trust	
In dealing with strangers one is better off to be cautious until they have provided evidence that they are trustworthy. <i>(Im Umgang mit Fremden ist man besser solange vorsichtig, bis sie bewiesen haben, dass sie vertrauenswürdig sind.)</i>	Rotter (1967) translation by Petermann (1992)

Table A1. Initial Item Pool (continued).

Items (<i>German translation</i>)	Source
I generally trust other people unless they give me reason not to.* (<i>Im allgemeinen vertraue ich anderen Menschen, es sei denn, sie liefern mir Gründe das nicht zu tun.</i>)*	Gefen (2000)
I tend to count upon other people.* (<i>Ich tendiere dazu, mich auf andere Menschen zu verlassen.</i>)*	Gefen (2000)
Most people are trustworthy.* (<i>Die meisten Menschen sind vertrauenswürdig.</i>)*	Yamagishi and Yamagishi (1994)
Most people are basically honest. (<i>Die meisten Menschen sind im Grunde genommen ehrlich.</i>)	Yamagishi and Yamagishi (1994)
Generally one gains better outcomes relying on other people. (<i>Im allgemeinen erzielt man bessere Ergebnisse wenn man sich auf andere Menschen verlässt.</i>)	new item
Trust - Trusting Beliefs	
I believe that this online vendor would act in my interest, too.* (<i>Ich glaube, dass dieser Online Händler auch in meinem Interesse handeln würde.</i>)*	adapt. McKnight et al. (2002)
This online vendor would be interested in my well being, not just its own.* (<i>Dieser Online Händler wäre an meinem Wohl interessiert, nicht nur an seinem eigenen.</i>)*	adapt. McKnight et al. (2002)
I expect that this online vendor's intentions are benevolent. (<i>Ich erwarte, dass die Absichten dieses Online Händlers wohlwollend sind.</i>)	adapt. Gefen (2002b)
This online vendor seems to be open and receptive to customer needs.* (<i>Dieser Online Händler scheint offen und empfänglich für die Bedürfnisse der Kunden zu sein.</i>)*	adapt. Gefen (2002b)
This online vendor would keep its commitments. (<i>Dieser Online Händler würde seine Verpflichtungen einhalten.</i>)	adapt. McKnight et al. (2002)
This online vendor is sincere and genuine. (<i>Dieser Online Händler ist ehrlich und aufrichtig.</i>)	adapt. McKnight et al. (2002)
I expect that this online vendor will keep promises it makes.* (<i>Ich rechne damit, dass dieser Online Händler Versprechen, die er macht, halten wird.</i>)*	adapt. Gefen (2002b)
This online vendor is fair in its conduct of customer transactions. (<i>Dieser Online Händler ist fair in der Handhabung von Geschäften mit Kunden.</i>)	adapt. Bhattacharjee (2002)

Table A1. Initial Item Pool (continued).

Items (<i>German translation</i>)	Source
I think this online vendor is competent in fulfilling online orders.* (<i>Ich glaube, dieser Online Händler ist kompetent bei der Erfüllung von Online Bestellungen.</i>)*	adapt. McKnight et al. (2002)
Overall, I believe that ... is a capable and proficient online bookstore.* (<i>Alles in allem glaube ich, dass ... ein fähiger und tüchtiger Online Buchhändler ist.</i>)*	adapt. McKnight et al. (2002)
This online vendor has the skills and expertise to perform transactions in an expected manner. (<i>Dieser Online Händler die Sachkenntnis und die Fähigkeiten Transaktionen wie erwartet durchzuführen.</i>)	adapt. Bhattacharjee (2002)
This online vendor knows about books. (<i>Dieser Online Händler kennt sich bei Büchern aus.</i>)	adapt. Gefen (2002b)
Trust - Trusting intention to depend	
I can rely on this online vendor if I urgently need one of its products. (<i>Wenn ich eines seiner Produkte dringend benötige, kann ich mich auf diesen Online Händler verlassen.</i>)	adapt. McKnight et al. (2002)
Faced with a situation that required me to get a book offered at this website, I would purchase it from this online vendor. (<i>Wenn ich mit einer Situation konfrontiert wäre, in der ich ein Buch bräuchte das auf dieser Webseite angeboten wird, würde ich es von diesem Online Händler kaufen.</i>)	adapt. McKnight et al. (2002)
I feel that I could rely on this online vendor to fulfill an important order promptly.* (<i>Ich glaube, ich könnte mich auf diesen Online Händler verlassen, eine wichtige Bestellungen prompt zu erfüllen.</i>)*	adapt. McKnight et al. (2002)
If I required a certain specialist book, I would trustfully turn to this online vendor.* (<i>Wenn ich ein spezielles Fachbuch bräuchte, würde ich mich vertrauensvoll an diesen Online Händler wenden.</i>)*	new item
I feel that I could always rely on this vendor if I need a book. (<i>Ich glaube, ich könnte mich immer auf diesen Händler verlassen, wenn ich ein Buch benötige.</i>)	new item
If I urgently needed a specific book, I would be willing to rely on this online vendor.* (<i>Wenn ich dringend ein bestimmtes Buch bräuchte, wäre ich bereit, mich auf diesen Online Händler zu verlassen.</i>)*	new item

Table A1. Initial Item Pool (continued).

Items (<i>German translation</i>)	Source
Risk of transaction	
I believe that the risk of purchasing from this vendor is very high.* (<i>Ich glaube, das Risiko bei diesem Händler einzukaufen ist sehr hoch.</i>)*	adapt. Teo and Liu (2002)
The risk of suffering financial losses is high with this online vendor.* (<i>Die Gefahr einen finanziellen Verlust zu erleiden ist bei diesem Online Händler hoch.</i>)*	new item
There is a high probability of losing a great deal by purchasing from this online vendor. (<i>Es besteht eine hohe Wahrscheinlichkeit bei einem Einkauf bei diesem Online Händler viel zu verlieren.</i>)	adapt. Teo and Liu (2002)
Overall, I would label the option of purchasing from this online vendor as something negative. (<i>Alles in allem würde ich die Option bei diesem Online Händler einzukaufen als etwas Negatives einstufen.</i>)	adapt. Teo and Liu (2002)
My credit card information would not be secure with this vendor. (<i>Meine Kreditkarteninformationen wären nicht sicher bei diesem Händler</i>)	adapt. Gefen (2002a)
The risk of getting a defective product delivered from this online vendor is high.* (<i>Das Risiko ein fehlerhaftes Produkt von diesem Online Händler geliefert zu bekommen ist hoch.</i>)*	new item
Purchase intention (anchors: very likely/high - not very likely/high)	
If you needed a book right now, how likely is it that you would purchase it from this online vendor?*	adapt. Koufaris and Hampton-Sosa (2002b)
(<i>Wenn Sie jetzt ein Buch benötigen würden, wie wahrscheinlich ist es, dass Sie es von diesem Online Händler kaufen würden?</i>)*	
My willingness to buy a product from this online vendor is:*	adapt. Teo and Liu (2002)
(<i>Meine Bereitschaft ein Produkt bei diesem Online Händler einzukaufen ist:</i>)*	
How likely is it that you would provide this vendor with the number of your bank account?	new item
(<i>Wie wahrscheinlich ist es, dass Sie diesem Händler die Nummer Ihres Bankkontos geben würden?</i>)	
How likely is it that you would use your credit card to purchase from this vendor?	new item
(<i>Wie wahrscheinlich ist es, dass Sie Ihre Kreditkarte verwenden würden um bei diesem Händler einzukaufen?</i>)	

Table A1. Initial Item Pool (continued).

Items (<i>German translation</i>)	Source
How likely is it that you would purchase a product from this vendor?*	new item
<i>(Wie wahrscheinlich ist es, dass Sie ein Produkt bei diesem Online Händler kaufen würden?)*</i>	
How likely is it that you would provide this vendor with financial information (e.g. credit card number)?	new item
<i>(Wie wahrscheinlich ist es, dass Sie diesem Händler finanzielle Informationen bekannt geben würden (z.B. Kreditkartennummer)?)</i>	
Intention to return (anchors: very likely/high - not very likely/high)	
How likely is it that you would return to this store's website?*	Jarvenpaa et al. (2000)
<i>(Wie wahrscheinlich ist es, dass Sie auf die Webseite dieses Online Händlers zurückkehren werden?)*</i>	
If you need to purchase a similar product in the future, how likely is it that you would return to this website?*	adapt. Koufaris and Hampton-Sosa (2002b)
<i>(Wenn Sie in Zukunft ein ähnliches Produkt kaufen müssen, wie wahrscheinlich ist es, dass Sie zu dieser Webseite zurückkehren würden?)*</i>	
How likely is it that you will return to this store's website in the next 3 months?*	adapt. Jarvenpaa et al. (2000)
<i>(Wie wahrscheinlich ist es, dass Sie in den nächsten 3 Monaten auf die Webseite dieses Händlers zurückkehren werden?)*</i>	
How likely is it that you would use this vendor for some of your future purchases?	adapt. Bhattacharjee (2002)
<i>(Wie wahrscheinlich ist es, dass Sie diesen Händler für einige Ihrer zukünftigen Einkäufe nutzen werden?)</i>	
The likelihood that I would return to this vendor's Website is:	adapt. Teo and Liu (2002)
<i>(Die Wahrscheinlichkeit, dass ich auf die Webseite diese Händlers zurückkommen werde ist:)</i>	
Satisfaction with terms	
Overall, how satisfied are you with the terms of business of this online vendor (e.g., payment options, terms of delivery, ...)*	new item
<i>(Wie zufrieden sind Sie insgesamt mit den Geschäftsbedingungen dieses Online Händlers (z.B., Zahlungsmöglichkeiten, Lieferbedingungen,...)*)</i>	

Table A1. Initial Item Pool (continued).

Items (<i>German translation</i>)	Source
Product simplicity	
Even without special product knowledge I could purchase the products offered at this website over the Internet.* <i>(Die Produkte auf dieser Webseite könnte ich auch ohne spezielles Produktwissen über das Internet einkaufen.)*</i>	new item
Price satisfaction	
How satisfied are you with the prices of this online vendor?* <i>(Wie zufrieden sind Sie mit den Preisen dieses Online Händlers?)*</i>	new item
Switching costs	
Switching to this online vendor would cost me more effort than it would bring benefits.* <i>(Zu diesem Online Händler zu wechseln würde mich mehr Anstrengungen kosten, als es Vorteile mit sich bringen würde.)*</i>	new item

Table A1. Initial Item Pool (continued).⁹⁸

⁹⁸ All items marked with an asterisk * in table A1 were included in the pilot study questionnaire, following the item refinement procedures.

Appendix B – Pilot Study

Pilot Study – Construct operationalization:

Website Design: (stimme völlig zu – stimme gar nicht zu)

- SD01) Das optische Erscheinungsbild dieser Webseite ist professionell.
- SD02) Diese Webseite ist optisch ansprechend.
- SD03) Das Design der Homepage dieses Online Händlers sieht einladend aus.

Website Usability: (stimme völlig zu – stimme gar nicht zu)

- U01) Es ist schnell und einfach auf dieser Webseite eine Transaktion durchzuführen.
- U02) Auf dieser Webseite kann man alles, was man will, mit einem Minimum an Mausklicks finden.
- U03) Diese Webseite bietet nützliche Hilfsfunktionen.

Information Quality: (stimme völlig zu – stimme gar nicht zu)

- I01) Diese Webseite bietet ausreichende Produktinformationen.
- I02) Auf dieser Webseite finden sich umfassende Informationen darüber, wie man sich mit dem Unternehmen in Verbindung setzen kann.
- I03) Auf dieser Webseite finden sich ausreichende Informationen über die Geschäftsbedingungen des Händlers.
- I04) Alles in allem entsprechen die Informationen, die auf dieser Webseite angeboten werden, meinen Informationsbedürfnissen.

Privacy Control: (stimme völlig zu – stimme gar nicht zu)

- P01) Dieser Online Händler sichert mir zu, Informationen über meine Online Aktivitäten nicht mit anderen Unternehmen zu teilen.
- P02) Dieser Online Händler würde meine persönlichen Daten nicht an Dritte weitergeben.
- P03) Dieser Online Händler ist besorgt um die Privatsphäre der Konsumenten.

Security Control: (stimme völlig zu – stimme gar nicht zu)

- Sc01) Dieser Händler verwendet Verschlüsselungsverfahren zum Schutz der Daten, die Kunden über das Internet versenden müssen.
- Sc02) Dieser Online Händler verwendet Sicherheitsmaßnahmen, um seine Online Käufer zu schützen.
- Sc03) Dieser Online Händler verwendet ausreichende Sicherheitsmaßnahmen.

Situational Normality: (stimme völlig zu – stimme gar nicht zu)

- N01) Die Webseite dieses Online Händlers ist ähnlich aufgebaut wie andere Webseiten, die ich kenne.
- N02) Die Schritte, die notwendig sind, um ein Buch zu suchen und zu kaufen, sind gleich wie bei ähnlichen Webseiten.
- N03) Diese Webseite erinnert mich an andere Seiten die ich regelmäßig verwende.

Trusting Beliefs: (stimme völlig zu – stimme gar nicht zu)

- TBb01) Dieser Online Händler wäre an meinem Wohl interessiert, nicht nur an seinem eigenen.
- TBb02) Ich glaube, dass dieser Online Händler auch in meinem Interesse handeln würde.
- TBi01) Ich rechne damit, dass dieser Online Händler Versprechen, die er macht, halten wird.
- TBi02) Dieser Online Händler scheint offen und empfänglich für die Bedürfnisse der Kunden zu sein.
- TBc01) Ich glaube, dieser Online Händler ist kompetent bei der Erfüllung von Online Bestellungen.
- TBc02) Alles in allem glaube ich, dass BOL.de ein fähiger und tüchtiger Online Buchhändler ist.

Trusting Intention: (stimme völlig zu – stimme gar nicht zu)

- Ti01) Wenn ich ein spezielles Fachbuch bräuchte, würde ich mich vertrauensvoll an diesen Online Händler wenden.
- Ti02) Ich glaube, ich könnte mich auf diesen Online Händler verlassen, eine wichtige Bestellung promptly zu erfüllen.
- Ti03) Wenn ich dringend ein bestimmtes Buch bräuchte, wäre ich bereit, mich auf diesen Online Händler zu verlassen.

Risk of Transaction: (stimme völlig zu – stimme gar nicht zu)

- R01) Ich glaube, das Risiko bei diesem Online Händler einzukaufen ist sehr hoch.
R02) Das Risiko ein fehlerhaftes Produkt von diesem Online Händler geliefert zu bekommen ist hoch.
R03) Die Gefahr einen finanziellen Verlust zu erleiden ist bei diesem Online Händler hoch.

Purchase Intention: (sehr hoch – gar nicht hoch / sehr wahrscheinlich – sehr unwahrscheinlich)

- Pu01) Meine Bereitschaft ein Produkt bei diesem Online Händler einzukaufen ist:
Pu02) Wie wahrscheinlich ist es, dass Sie ein Produkt bei diesem Online Händler kaufen würden?
Pu03) Wenn Sie jetzt ein Buch benötigen würden, wie wahrscheinlich ist es, dass Sie es von diesem Online Händler kaufen würden?

Intention to Return: (stimme völlig zu – stimme gar nicht zu)

- Re01) Wie wahrscheinlich ist es, dass Sie auf die Webseite dieses Online Händlers zurückkehren werden?
Re02) Wenn Sie in Zukunft ein ähnliches Produkt kaufen müssen, wie wahrscheinlich ist es, dass Sie zu dieser Webseite zurückkehren würden?
Re03) Wie wahrscheinlich ist es, dass Sie in den nächsten 3 Monaten auf die Webseite dieses Online Händlers zurückkehren werden?

Structural Assurance of the Internet: (stimme völlig zu – stimme gar nicht zu)

- Sa01) Ich glaube, dass österreichische und europäische Gesetze die Rechte der Konsumenten auch im Internet schützen.
Sa02) Ich bin sicher, dass Verschlüsselung und andere technische Verfahren im Internet es für mich sicher machen, dort Einkäufe zu tätigen.
Sa03) Ich bin sicher, dass mich gesetzliche und technische Strukturen vor Problemen im Internet beschützen.

Risk of Internet: (stimme völlig zu – stimme gar nicht zu)

- IR01) Einkaufen im Internet ist riskant.
IR02) Verglichen mit anderen Einkaufsmöglichkeiten wäre es riskanter im Internet einzukaufen.
IR03) Kreditkarteninformationen über das Internet einzugeben ist unsicher.

Dispositional Trust: (stimme völlig zu – stimme gar nicht zu)

- TBb01) Die meisten Menschen sind vertrauenswürdig.
TBb02) Ich tendiere dazu, mich auf andere Menschen zu verlassen.
TBi01) Im allgemeinen vertraue ich anderen Menschen, es sei denn, sie liefern mir Gründe das nicht zu tun.

Price Satisfaction: (sehr zufrieden – gar nicht zufrieden)

- PS) Wie zufrieden sind Sie mit den Preisen dieses Online Händlers?

Satisfaction with Terms: (sehr zufrieden – sehr unzufrieden)

- ST) Wie zufrieden sind Sie insgesamt mit den Geschäftsbedingungen dieses Online Händlers? (Zahlungsarten, Lieferbedingungen, usw)

Product Simplicity: (stimme völlig zu – stimme gar nicht zu)

- PC) Die Produkte auf dieser Webseite könnte ich auch ohne spezielles Produktwissen über das Internet bestellen.

Switching Costs: (stimme völlig zu – stimme gar nicht zu)

- SW) Zu diesem Online Händler zu wechseln würde mich mehr Anstrengungen kosten, als es Vorteile mit sich bringen würde.

Descriptive Statistics and Cronbach's Alpha for Pilot Study Data

Item	N	Mean	Std. Deviation	Skewness	Kurtosis	Cronbach's Alpha for Scale
Website Design 1	47	2.87	1.44	1.01	0.53	0.89
Website Design 2	49	3.47	1.47	0.55	0.06	
Website Design 3	47	3.55	1.63	0.39	-0.67	
Website Usability 1	48	3.25	1.41	0.59	0.13	0.59
Website Usability 2	49	2.92	1.24	0.85	1.12	
Website Usability 3	49	2.98	1.52	0.48	-0.67	
Information Quality 1	48	3.44	1.71	0.36	-0.84	0.76
Information Quality 2	49	2.90	1.54	0.74	-0.44	
Information Quality 3	49	2.57	1.49	1.07	0.85	
Information Quality 4	49	3.41	1.73	0.69	-0.35	
Privacy Control 1	49	2.92	1.86	0.96	-0.11	0.65
Privacy Control 2	49	2.80	1.79	1.07	0.16	
Privacy Control 3	49	3.22	1.48	0.77	0.31	
Security Control 1	49	2.22	1.48	1.42	1.67	0.79
Security Control 2	49	2.33	1.45	1.28	1.42	
Security Control 3	49	2.90	1.60	1.04	0.25	
Situational Normality 1	49	1.96	1.17	1.13	0.35	0.80
Situational Normality 2	49	1.88	1.09	1.15	0.43	
Situational Normality 3	49	3.39	1.77	0.21	-0.86	
Structural Assurance1	49	3.86	1.70	0.53	-0.63	0.82
Structural Assurance2	48	3.67	1.68	0.39	-0.53	
Structural Assurance3	49	4.24	1.64	0.15	-1.02	
Internet Risk1	49	3.53	1.58	-0.12	-0.81	0.72
Internet Risk2	49	2.88	1.56	0.42	-0.92	
Internet Risk3	49	2.57	1.53	0.85	0.21	
Dispositional trust1	49	5.22	1.56	-0.77	0.07	0.77
Dispositional trust2	49	4.73	1.87	-0.48	-0.93	
Dispositional trust3	49	3.61	2.01	0.21	-1.18	
Trusting Belief Benevolence 1	49	4.18	1.55	0.24	-0.78	0.84
Trusting Belief Benevolence 2	49	4.29	1.62	0.16	-0.99	
Trusting Belief Integrity 1	49	3.45	1.57	0.69	-0.10	
Trusting Belief Integrity 2	49	3.59	1.31	-0.12	0.59	
Trusting Belief Competence 1	49	2.65	1.36	0.87	-0.05	
Trusting Belief Competence 2	49	2.76	1.44	1.15	1.08	
Trusting Intention 1	49	5.02	1.83	-0.35	-1.26	0.81
Trusting Intention 2	49	3.84	1.74	0.59	-1.05	
Trusting Intention 3	49	4.63	1.94	-0.18	-1.36	

Item	N	Mean	Std. Deviation	Skewness	Kurtosis	Cronbach's Alpha for Scale
Risk of Transaction 1	49	4.76	1.69	-0.68	-0.44	0.82
Risk of Transaction 2	49	4.76	1.69	-0.43	-0.67	
Risk of Transaction 3	49	4.43	1.68	-0.25	-0.71	
Purchase intention 1	49	5.06	1.63	-0.19	-1.16	0.88
Purchase intention 2	49	5.49	1.60	-0.77	-0.72	
Purchase intention 3	49	5.78	1.45	-1.05	-0.03	
Intention to return 1	49	4.92	1.72	-0.31	-0.97	0.90
Intention to return 2	49	5.06	1.77	-0.42	-1.17	
Intention to return 3	49	5.41	1.75	-0.59	-1.18	
Price Satisfaction	49	4.29	1.26	0.74	0.32	n/a
Satisfaction with terms	48	4.63	1.59	0.26	-1.31	n/a
Product simplicity	49	3.10	1.50	0.93	0.38	n/a
Switching costs	49	3.76	1.75	0.00	-0.78	n/a

Appendix C – Full-Scale Survey

Full-scale Survey – Construct operationalization:

Website Design: (stimme völlig zu – stimme gar nicht zu)

- SD01) *Das optische Erscheinungsbild dieser Webseite ist professionell.*⁹⁹
SD02) Diese Webseite ist optisch ansprechend.
SD03) Das Design der Homepage dieses Online Händlers sieht einladend aus.

Website Usability: (stimme völlig zu – stimme gar nicht zu)

- U01) Es ist schnell und einfach auf dieser Webseite eine Transaktion durchzuführen.
U02) Diese Webseite ist einfach zu bedienen.
U03) Auf dieser Webseite kann man alles, was man will, mit einem Minimum an Mausclicks finden.
U04) *Diese Webseite bietet nützliche Hilfsfunktionen.*

Information Quality: (stimme völlig zu – stimme gar nicht zu)

- I01) Diese Webseite bietet ausreichende Produktinformationen.
I02) Auf dieser Webseite finden sich umfassende Informationen darüber, wie man sich mit dem Unternehmen in Verbindung setzen kann.
I03) Auf dieser Webseite finden sich ausreichende Informationen über die Geschäftsbedingungen des Händlers.
I04) Alles in allem entsprechen die Informationen, die auf dieser Webseite angeboten werden, meinen Informationsbedürfnissen.

Privacy Control: (stimme völlig zu – stimme gar nicht zu)

- P01) Dieser Online Händler sichert mir zu, Informationen über meine Online Aktivitäten nicht an andere Unternehmen zu verkaufen.
P02) Dieser Online Händler würde meine persönlichen Daten nicht an unbeteiligte Dritte weitergeben.
P03) Dieser Online Händler ist besorgt um die Privatsphäre der Konsumenten.
P04) *Dieser Online Händler hat klare Datenschutzrichtlinien für die Verwendung von Kundendaten.*

Security Control: (stimme völlig zu – stimme gar nicht zu)

- Sc01) *Dieser Händler verwendet übliche Verschlüsselungsverfahren zum Schutz der Kundendaten.*
Sc02) Dieser Online Händler verwendet umfassende technische Schutzvorrichtungen.
Sc03) Dieser Online Händler verwendet ausreichende technische Sicherheitsmaßnahmen, um seine Online Käufer zu schützen.

Situational Normality: (stimme völlig zu – stimme gar nicht zu)

- N01) Die Webseite dieses Online Händlers ist ähnlich aufgebaut wie andere Webseiten, die ich kenne.
N02) Die Schritte, die notwendig sind, um ein Buch zu suchen und zu kaufen, sind gleich wie bei ähnlichen Webseiten.
N03) *Diese Webseite erinnert mich an andere Seiten die ich regelmäßig verwende.*

Trusting Beliefs: (stimme völlig zu – stimme gar nicht zu)

- TBb01) *Dieser Online Händler wäre an meinem Wohl interessiert, nicht nur an seinem eigenen.*
TBb02) Ich glaube, dass dieser Online Händler auch in meinem Interesse handeln würde.
Tbi01) Ich rechne damit, dass dieser Online Händler Versprechen, die er macht, halten wird.
Tbi02) Dieser Online Händler scheint offen und empfänglich für die Bedürfnisse der Kunden zu sein.
Tbi03) Dieser Online Händler scheint ehrlich und aufrichtig zu sein.
TBc01) Ich glaube, dieser Online Händler ist kompetent bei der Erfüllung von Online Bestellungen.
TBc02) *Alles in allem glaube ich, dass BOL.de ein fähiger und tüchtiger Online Buchhändler ist.*

⁹⁹ All items in *italics* were dropped from the analysis and from the final scale.

Trusting Intention: (stimme völlig zu – stimme gar nicht zu)

- Ti01) *Wenn ich ein spezielles Fachbuch bräuchte, würde ich mich vertrauensvoll an diesen Online Händler wenden.*
Ti02) Ich glaube, ich könnte mich auf diesen Online Händler verlassen, eine wichtige Bestellung prompt zu erfüllen.
Ti03) *Wenn ich dringend ein bestimmtes Buch bräuchte, wäre ich bereit, mich auf diesen Online Händler zu verlassen.*
Ti04) Ich glaube, ich könnte mich immer auf diesen Händler verlassen, wenn ich eines seiner Produkte benötige.

Risk of Transaction: (stimme völlig zu – stimme gar nicht zu)

- R01) Ich glaube, das Risiko bei diesem Online Händler einzukaufen ist sehr hoch.
R02) *Das Risiko ein fehlerhaftes Produkt von diesem Online Händler geliefert zu bekommen ist hoch.*
R03) Die Gefahr einen finanziellen Verlust zu erleiden ist bei diesem Online Händler hoch.

Purchase Intention: (sehr hoch – gar nicht hoch / sehr wahrscheinlich – sehr unwahrscheinlich)

- Pu01) *Meine Bereitschaft ein Produkt bei diesem Online Händler einzukaufen ist:*
Pu02) Wie wahrscheinlich ist es, dass Sie ein Produkt bei diesem Online Händler kaufen würden?
Pu03) Wenn Sie jetzt ein Buch benötigen würden, wie wahrscheinlich ist es, dass Sie es von diesem Online Händler kaufen würden?

Intention to Return: (stimme völlig zu – stimme gar nicht zu)

- Re01) Wie wahrscheinlich ist es, dass Sie auf die Webseite dieses Online Händlers zurückkehren werden?
Re02) *Wenn Sie in Zukunft ein ähnliches Produkt kaufen müssen, wie wahrscheinlich ist es, dass Sie zu dieser Webseite zurückkehren würden?*
Re03) Wie wahrscheinlich ist es, dass Sie in den nächsten 3 Monaten auf die Webseite dieses Online Händlers zurückkehren werden?

Structural Assurance of the Internet: (stimme völlig zu – stimme gar nicht zu)

- Sa01) Ich glaube, dass österreichische und europäische Gesetze die Rechte der Konsumenten auch im Internet schützen.
Sa02) Ich bin sicher, dass Verschlüsselung und andere technische Verfahren im Internet es für mich sicher machen, dort Einkäufe zu tätigen.
Sa03) Ich bin sicher, dass mich gesetzliche und technische Strukturen vor Problemen im Internet beschützen.

Risk of Internet: (stimme völlig zu – stimme gar nicht zu)

- IR01) Einkaufen im Internet ist riskant.
IR02) Verglichen mit anderen Einkaufsmöglichkeiten wäre es riskanter im Internet einzukaufen.
IR03) *Kreditkarteninformationen über das Internet einzugeben ist unsicher.*
IR04) Ich finde es gefährlich im Internet einzukaufen.

Dispositional Trust: (stimme völlig zu – stimme gar nicht zu)

- TBb01) Die meisten Menschen sind vertrauenswürdig.
TBb02) Ich tendiere dazu, mich auf andere Menschen zu verlassen.
TBI01) Im allgemeinen vertraue ich anderen Menschen, es sei denn, sie liefern mir Gründe das nicht zu tun.

Price Satisfaction: (sehr zufrieden – gar nicht zufrieden)

- PS) Wie zufrieden sind Sie mit den Preisen dieses Online Händlers?

Satisfaction with Terms: (sehr zufrieden – sehr unzufrieden)

- ST) Wie zufrieden sind Sie insgesamt mit den Geschäftsbedingungen dieses Online Händlers? (Zahlungsarten, Lieferbedingungen, usw)

Product Simplicity: (stimme völlig zu – stimme gar nicht zu)

- PC) Die Produkte auf dieser Webseite könnte ich auch ohne spezielles Produktwissen über das Internet bestellen.

Switching Costs: (stimme völlig zu – stimme gar nicht zu)

- SW) Zu diesem Online Händler zu wechseln würde mich mehr Anstrengungen kosten, als es Vorteile mit sich bringen würde.

Full-scale Survey Item Results

Item	N	Mean	Std. Deviation	Skewness	Kurtosis	Cronbach's Alpha for Final Scale
<i>Site Design 1</i>	433	2.48	1.20	1.11	1.47	0.88
Site Design 2	433	3.09	1.44	0.65	0.01	
Site Design 3	433	3.20	1.44	0.60	-0.21	
Site Usability 1	429	2.98	1.40	0.60	-0.13	0.77
Site Usability 2	433	2.43	1.21	1.04	1.35	
Site Usability 3	430	3.16	1.35	0.49	0.04	
<i>Site Usability 4</i>	431	3.08	1.40	0.43	-0.29	
Information Quality 1	433	2.95	1.32	0.51	-0.23	0.76
Information Quality 2	433	2.43	1.39	0.92	0.41	
Information Quality 3	433	2.37	1.26	0.72	-0.17	
Information Quality 4	432	2.84	1.42	0.72	0.12	
Privacy Control 1	431	2.97	1.82	0.70	-0.49	0.80
Privacy Control 2	433	2.89	1.84	0.75	-0.50	
Privacy Control 3	433	3.16	1.63	0.58	-0.40	
<i>Privacy Control 4</i>	433	2.41	1.40	0.87	0.22	
<i>Security Control 1</i>	433	2.53	1.34	0.59	-0.25	0.84
Security Control 2	433	2.97	1.43	0.58	-0.05	
Security Control 3	433	2.83	1.29	0.59	0.21	
Situational Normality 1	432	2.07	1.20	1.15	0.87	0.76
Situational Normality 2	432	2.07	1.15	1.16	1.22	
<i>Situational Normality 3</i>	433	3.03	1.85	0.64	-0.64	
Structural Assurance 1	432	3.57	1.52	0.34	-0.43	0.83
Structural Assurance 2	433	3.60	1.60	0.29	-0.71	
Structural Assurance 3	432	4.05	1.58	0.17	-0.70	
Internet Risk 1	433	3,68	1,66	0.13	-0.90	0.85
Internet Risk 2	433	2,98	1,62	0.61	-0.45	
<i>Internet Risk 3</i>	433	2,89	1,63	0.64	-0.42	
Internet Risk 4	432	3,70	1,73	0.25	-0.87	
Dispositional trust 1	433	4.55	1.56	-0.13	-0.75	0.76
Dispositional trust 2	433	4.54	1.71	-0.19	-1.01	
Dispositional trust 3	433	3.51	1.66	0.24	-0.69	
<i>Trusting Belief Benevolence 1</i>	433	3,90	1,51	0.39	-0.48	0.87
Trusting Belief Benevolence 2	433	3,73	1,44	0.33	-0.29	
Trusting Belief Integrity 1	432	3,12	1,36	0.49	-0.19	
Trusting Belief Integrity 2	433	3,33	1,31	0.45	-0.09	
Trusting Belief Integrity 3	433	3,28	1,30	0.52	0.12	
Trusting Belief Competence 1	432	2,71	1,19	0.76	0.50	
<i>Trusting Belief Competence 2</i>	433	2,82	1,25	0.71	0.46	

Item	N	Mean	Std. Deviation	Skewness	Kurtosis	Cronbach's Alpha for Final Scale
<i>Trusting Intention 1</i> ¹⁰⁰	433	4.21	1.78	0.06	-0.97	0.78
Trusting Intention 2	433	3.43	1.50	0.55	-0.23	
<i>Trusting Intention 3</i>	433	3.95	1.81	0.25	-0.93	
Trusting Intention 4	433	3.79	1.56	0.39	-0.46	
Risk of Transaction 1	433	4.95	1.56	-0.73	-0.16	0.80
<i>Risk of Transaction 2</i>	432	4.99	1.46	-0.71	0.02	
Risk of Transaction 3	433	4.87	1.58	-0.67	-0.25	
<i>Purchase intention 1</i>	433	4.69	1.62	-0.02	-1.16	0.89
Purchase intention 2	433	4.89	1.68	-0.22	-1.14	
Purchase intention 3	433	5.10	1.68	-0.46	-0.90	
Intention to return 1	433	4.37	1.85	-0.04	-1.14	0.88
<i>Intention to return 2</i>	433	4.50	1.77	-0.08	-1.09	
Intention to return 3	433	4.71	1.91	-0.32	-1.12	
Price Satisfaction	424	3,96	1,07	0,31	1,04	n/a
Satisfaction with terms	433	4,09	1,63	0,15	-0,88	n/a
Product simplicity	432	3,15	1,42	0,57	0,03	n/a
Switching costs	433	3,87	1,75	0,08	-0,89	n/a

¹⁰⁰ All items which are crossed out and presented in italics were dropped from the analysis and final scale.