

“Falling in Love is a matter of Trust”

About the Importance of Trust and Information Substitutes When Offering Digital Paid Services On Dating Websites

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Abstract

Customers are increasingly demanding trustworthy paid services in the digital economy. While there is an increasing amount of scientific literature on the economics of the Internet and trust, empirical studies concerning paid services can scarcely be found. This paper discusses research in the field of trust and reputation on paid services for dating websites. Considering the literature and examining an extensive data basis, we deploy two hypotheses to highlight reputation mechanisms of the supplier as well as the reputation of the consumers and the number of purchase transactions and revenues of digital paid services on dating websites in this evolving field. Several statistics included in this paper underline a strong and significant influence of information substitutes such as a seller's reputation or reputation mechanisms among the customers on the number of purchase transactions and revenues of digital paid services on dating websites.

Keywords

trust, reputation, information substitutes, paid services, dating

1. Introduction

In the past digital services in electronic markets were basically free of charge. Service providers acquired their revenue by advertising. After the consolidation of the Internet boom at the beginning of this millennium and the decline of advertising revenues, many firms changed their business models and decided to sell digital services, which were until that point freely available. As a consequence, this led to a change of consumer behaviour as consumers were

requested to pay for digital services which were previously free of cost.

Digital services are overwhelmingly “experience goods” (Varian, 1998, 2001). A consumer has to fully consume a digital service before he/she can judge and evaluate it. This “experience good” character of digital services allows us to compare the relationship between sellers and consumers in the e-commerce of digital goods with a Principal-Agent relationship. A Principal-Agent relationship is characterised by information asymmetries which exist between the Agents (e.g. the suppliers) and the Principal (e.g. the consumers). The consumer is principally less informed than the supplier with regard to the genuine traits of a digital service. The true characteristics of a digital service can solely be ascertained by the consumer after the purchase has been made. Prior to the purchase of the digital good the true characteristics are unknown to the consumer (compare “Information paradoxes” by Shackle, 1952; Picot, Reichwald, & Wigand, 1993, 2001, 358). A fundamental prerequisite to perform e-commerce of digital services is the process of establishing mutual trust between the Principal and the Agent. In this process the Principal indicates that the digital good being offered to the Agent has the characteristics required. This confidence can only be developed by the seller or consumer on the basis of his/her own experience or the experience of third parties. In so far as trust is based upon third parties, it is concerned with the trust relationship which is based upon the reputation of the supplier of digital services. Particularly due to the paradigm change from free to paid digital services on the Internet the reputation of the supplier is a central substitute which creates trust amongst the customers – and the trust on the part of the customers is, from a theoretical perspective,

fundamental in being able to achieve sales and revenue with these digital goods.

The Internet is characterized by increased execution of social functions by means of interactive information and communication technologies (ICT). Thus, one can speak of a digital information society. Online dating services, such as dating websites, are an example of interactive information technologies in the domain of social interaction. But on-line dating services are not an entirely new phenomenon. People already interacted with each other in Usenet, chats, web forums and other meeting places on the Internet long before on-line dating services were available (Klein, 2004).

On dating websites the consumer is fully integrated in the value-added-process of the digital service. If the customer is actively involved in the process, as for example in connection with an advisory service, then he/she actively participates in the provision of the service. In that respect and in order to describe the particular position of the consumer, the term “prosumer” is rapidly gaining acceptance in scientific literature. The expression “prosumer” is a composition of the two words “producer” and “consumer”. The customer is thus concurrently a co-producer and consumer in one person. His/her behaviour has a direct impact on the quality of the service (Meyer & Blümelhuber, 1994, 9). As far as dating services are concerned the quality of a profile is absolutely crucial for successful matching to take place. Along with the trust building process of the supplier and the consumer of digital paid services a second trust building process takes place in on-line dating services among the consumers, respectively the person who wants to find a contact or date. Therefore, consumers of dating platforms have to build up trust in the supplier as well as in other consumers – who represent the utility and benefit of this digital service.

Research questions

These two-fold trust building processes lead to the following research questions:

- What kind of relationship exists between the reputation of a paid service *supplier* and the number of purchase transactions and revenues of digital paid services on dating websites?
- What kind of relationship exists between reputation mechanisms among *consumers* as co-producers on dating websites and the number of purchase transactions and revenues of digital paid services on these websites?

This paper is organized as follows. The following section will give an overview concerning the literature of the characteristics of digital services, branding and reputation as well as trust in electronic markets. Based on these theories an approach will be derived and tested empirically. In the last section the impact of the empirical findings on the existing theories and the implications of these empirical findings will be discussed.

2. Related literature

Digital services

Both digital services as well as digital content are regarded as being digital goods. According to Brandtweiner, digital goods are regarded as those which are in a digital shape, therefore coded as quantities of bits and bytes and which are supplied by a network infrastructure, e.g. software (Brandtweiner, 2000, 37). There is a substantial difference between digital goods and information goods, which contain information, or in other words content about circumstances and procedures (Hansen & Neumann, 2001, 8).

A more complex view of the definition “digital goods” is given by Choi, Stahl and Whinston. According to their description the term “digital product” contains all real assets and services, which are sold through the Internet (Choi, Stahl, & Whinston, 1997, 62).

category	specification
Information and entertainment products	<ul style="list-style-type: none"> • Paper-based information products: newspapers, magazines, journals, books • Product information: product specifications, user manuals, sales training manuals • Graphics: photographs, postcards, calendars, maps, posters • Audio: music recordings, speeches • Video: movies, television programs
Symbols, tokens and concepts	<ul style="list-style-type: none"> • Tickets and reservations: airline, hotels, concerts, sport events • Financial instruments: checks, electronic currencies, credit cards, securities
Processes and services	<ul style="list-style-type: none"> • Government services: forms, welfare payments • Electronic messaging: letters, faxes, telephone calls • Business value creation processes: ordering, bookkeeping, inventory, contracting • Auctions and electronic markets • Remote education, telemedicine and other interactive services • Cyber cafes and interactive entertainment

Table 1. Characteristics of digital goods, according to Choi et al. (1997)

The table above shows a systematic classification of digital goods according to Choi, Stahl and Whinston (1997). The definition of “digital goods” according to Brandtweiner and Choi et al. covers substantially more goods than solely “digital services”. “Digital services” and “online services” are terms which are usually used synonymously in publications on electronic markets and on e-commerce. A definition of digital services can be found in De Ruyter (2001). De Ruyter defines “electronics services” as “(...) an interactive, content-centered and Internet-based service, driven by the customer and integrated with related organizational customer support processes and technologies with the goal of strengthening the customer-service provider relationship” (De Ruyter, Wetzels, & Kleijnen, 2001). Stahl and Siegel (2004) define digital services as “...a service that is completely or substantially available for direct applications in an electronic medium. The value of the service exists in the right of the usage.” Usability, applicability and recoverability - but not their exchangeability - are the key features of digital services (Stahl & Siegel, 2004).

Digital services and digital content unify the characteristic of being immaterial (Meyer & Blümelhuber, 2002). In spite of the similarities between digital services and digital content, the purpose of e-commerce of digital services is to distinguish between these two product categories (compare Bode, 1997). A central differentiation characteristic between digital services and digital content is the storage capability of the product. Whilst digital content have the characteristic of being able to be stored indefinitely without realising a loss of the value of the content, digital services are not able to be stored because they are dependent upon the service performance of the supplier and they usually require an expiry date which normally is shortly after the date of acquisition.

A further possibility of differentiating between digital content and digital services is based upon the differentiation between products and services for material goods (Klose, 2002:39). Digital content and digital services can be differentiated by the contribution of the customer when creating the product. Whilst digital content can be autonomously created by the supplier the consumer acts as an external production factor in digital services. This can be clarified, for example, with the aid of the digital services of dating websites. The supplier provides the digital service. The contact to others looking for contact depends, however, upon how the consumer behaves and communicates with himself/herself. Only with the contribution of the consumer can the service

result. Hence, with regard to digital devices the following is valid: “typically one party makes an investment, the profitability of which depends on the other party’s behaviour” (Zerdick et al., 2001, 234). The integration of the customer in the process is absolutely crucial for the provision of digital services. Meyer asserts this by the fact that services are not available for free on the market; the customer retains the property right and is at the same time the subject of the service (Meyer & Blümelhuber, 1994, 9).

Consequently, the e-commerce of digital services is clearly to be defined according to the above mentioned product properties and the differences to the e-commerce of digital content. In this paper e-commerce of digital services and, in particular, dating services is analyzed exclusively, in contrast to the e-commerce of digital content which shall not be subject of this paper.

Trust

In scientific publications the significance of trust for success in e-commerce is annotated several times (for example Ba, Whinston, & Zhang, 1999; Hoffman, Novak, & Peralta, 1999; Jarvenpaa & Tractinsky, 1999) and trust is even designated as the future currency of the Internet. Perceived risks when consuming in e-commerce represent the main reasons in this context for the importance of the generation of trust. As the reduction of negative consequences, which can result when purchasing on the Internet, cannot completely reduce the perceived risk, mechanisms are required which are capable of reducing the uncertainty factor.

In order to by-pass the risks which exist in spite of the technical safety precautions and possible contractual insurances in e-commerce, trust is valid as being an effective and efficient mechanism. According to Einwiller (2003, 11) trust is concerned with the reduction of the perceived risk which cannot be prevented by explicit contracts and control measures. By reducing the sense of uncertainty trust leads to a reduced perception of risk and thus increases the probability that a consumer will intentionally engage himself/herself in a potential partner. The realisation of the economic potential of e-commerce is significantly dependent upon the construction and maintenance of trust (Einwiller, 2003, 11).

Trust is of core importance when consumers engage in situations which they perceive as risky. According to Einwiller (2001), this is particularly due to the function of the trust justified and the reduction of the uncertainty component of perceived risk (Einwiller,

2003, 59). Trust is, thereby, not only important for consumer decisions but in each social exchange relationship, in which a trust donor gives trust to a trust taker who has confidence to interact with someone.

According to Giddens, trust is in a close relationship to reliability whether it deals with different actions of different people or around systems (Giddens, 1995, 48). Giddens discusses the temporal and spacial connection of trust. If we were to deal with persons whose thinking is visual it would not be necessary to trust somebody. This is analogous to the case of systems which functionality we would know everything about. Trust is an instrument to cope with the liberty of the other party. Whilst the importance of trust within and between disciplines is enjoying increasing importance and unity (Kramer & Tyler, 1996) the definitions of trust are extremely heterogeneous. Golembiewski and McConkie (Golembiewski & McConkie, 1975) summarize these in the following: "Diverse conceptualizations of interpersonal trust co-exist, with intense convictions that the various something described are central in all of human life" (p. 131).

Morgan & Hunt (Morgan & Hunt, 1994, 23) define trust as "existing when one party has confidence in an exchange partners reliability and integrity". A definition of the term trust in relationship to the Internet was undertaken by Jarvenpaa & Tractinsky (Jarvenpaa & Tractinsky, 1999, 4): "We define trust in an Internet store as a consumers willingness to rely on the seller and take action in circumstances where such action makes the consumer vulnerable to the seller".

As the e-commerce of digital services on dating websites is afflicted with experience characteristics as well as representing a risk associated consumer decision, then the building up of trust in each business model of dating websites is a critical factor in success which the supplier must urgently observe when promoting the business idea.

Reputation

Scientific publications concerning trust emphasize that one's own experiences and one's own knowledge act as particularly strong confidence signals (Anderson & Narus, 1990; Kennedy, Ferrell, & LeClair, 2001; Walczuch, Seelen, & Lundgren, 2001). If one's own knowledge is available in an insufficient amount, which is often the case for people who purchase on the Internet, then one has to revert to other information sources. This information can be

found by the consumer in his/her social environment whereby reputation as a determinant of trust plays a significant role. However, according to Einwiller (2001, 14), disunity in the scientific literature as to what is to be understood by reputation is prevalent. The reputation of a company is often equated with an image or with the concept of the company's brand. A satisfactory differentiation of the concepts reputation, image, brands and trust has been lacking up until now.

The features of digital services on dating websites are characterized as experience goods. According to Varian, a chance exists to overcome these experience goods, as the supplier enhances his/her reputation and, moreover, provides trust to consumers (Varian, 1998, 5).

The reliability of a website or a portal can hardly be determined. Reliability is closely linked with the perception of the consumers, which is in a close relationship with the reputation of the supplier. According to Einwiller, the advantage of customer confidence from the supplier's perspective is the fact that a certain confidence is necessary in the phase of the pre-buying decision. Especially in risky purchase processes in which the consumer cannot judge the offered product quality, solely the suppliers which are trusted by consumers experience high demand. (Einwiller, 2001, 61).

One of the earliest and best known Internet reputation systems was developed by eBay. This system gathers comments from buyers and sellers about each other after each transaction. Resnick and Zeckhauser show that on the Internet information about past transactions may be both limited and potentially unreliable, but it can be distributed far more systematically than the informal gossip among friends that characterizes conventional marketplaces (Resnick, Zeckhauser, Swanson, & Lockwood, 2003). With the aid of eBay's reputation system the significance of the reputation of a sales person of a product was proven by different authors (Cabral & Hortacsu, 2004; Melnik & Alm, 2002). Cabral and Hortacsu show that the sales price for an identical product between different sales people is dependent upon the feedback of the consumers and they demonstrate that a negative rating of a sales person and the resultant sinking reputation has the direct affect of bringing about a reduction in sales and the sales price. Melnik and Alm show with the aid of empirical results that a sales person with a higher reputation can expect to receive a higher price for the auction good. If one carries forward this empirical evidence of the reputation system of auction platforms such as eBay to dating platforms, then the rating of a person looking for contact is crucial with regard to the

credibility and the details concerning that person which are published on the dating website.

Measurement of Reputation

For the measurement of the reputation of a supplier of digital services in electronic markets varying theoretical laws and concepts exist. Nielson concluded in 1998: "Since there is no way for computers to automatically measure quality, we have to rely on human judgment for Web quality ratings" (Nielsen, 1998b). As mentioned above, the analysis of the e-commerce of digital services is mainly related to the Internet medium and the services provided by the WWW and so the offered platform of the digital services is to be equated with the portal or the website of the offer on the WWW. The brand of a website is defined, according to Nielsen (1998), in that the user knows the quality of the offered digital goods: The reputation of a website results from the fact the user of the website follows the recommendation of other users who can judge the quality of the website and the commodities which are presented there. The positive judgement of the quality of a website is recognised by a user in that the user places a hyperlink from his/her website to the website to be judged. The user references, via the hyperlink, the quality of a website for a particular topic and helps that website due to the fact that his/her website was visited. "The idea is that pages with good reputations should be given preferential treatment when reporting the results of a search; and that link structure can be mined to extract such reputation measures, on the assumption that a link from page a to page b is, to some degree, an endorsement of the content of b by the creator of a" (Rafiei & Mendelzon, 2000). A measurement of the reputation based upon hyperlinks can be used by anyone "to evaluate a site before using it as a source of information, or before transacting business with it" (Rafiei & Mendelzon, 2000). The Google search engine is based on a system that measures the reputation of every page on the Web by adding the hyperlinks of a website and determining the ranking of the search result. "Google derives its estimate of a website's quality from the number of other sites that link to it (as well as some fancy math that gives greater weight to links from more important sites and less weight to links from minor sites)" (Nielsen, 1998a). Along with this "Construct of Reputation" further "Constructs" are discussed in the scientific literature such as how the reputation of websites in electronic markets can be measured. Rafiei and Mendelzon (2000) show in their article "What do the neighbors think? Computing Web page reputations" a further possibility of how the reputation of a supplier

and the quality of the digital goods can be measured. Their proposal is, that only the displayed hyperlinks for the measurement of reputation are necessary but that the reputation of a website is valid for the topic by the hyperlinks in whose context the hyperlink was set. "For example, a page can acquire a high reputation on a topic because the page is pointed to by many pages on that topic, or because the page is pointed to by some high reputation pages on that topic" (Rafiei & Mendelzon, 2000). According to this proposal the reputation of a website is the portion of all the sites which have a link to the website on being displayed as a "hit" when one types in a specific search term into a search engine.

Summarising, we can state that supplier's reputation (and its relationship with brands) is an important mechanism in the e-commerce of digital services in spite of information asymmetries between sellers and consumers concerning the quality of the products. Based upon the results of Resnick et al. (2003), Cabral and Hortacsu (2004) and Melnik and Alm (2002), the reputation of the supplier has an influence on the revenue and the purchase transactions in electronic markets. From this the following hypotheses (H1) can be deduced:

H1: The number of referencing hyperlinks of a website as a construct of reputation of a supplier of a dating website has a measurable influence on the revenues and purchase transactions in the e-commerce of digitally paid services of this dating websites

For the measurement of the reputation of a customer on a dating website the provision of feedback mechanisms is absolutely crucial. As already mentioned, digital services on dating websites are compiled in cooperation with the customer. Particularly in these constellations feedback and reputation mechanisms are critical for measuring the reputation of the customers as demonstrated by Dellarocas (Dellarocas, 2001). He showed the significance of online reputation reporting systems as an important quality signalling and quality control mechanism in online trading communities (Kollock 1999; Resnick, Zeckhauser, Friedman, & Kuwabara, 2000; Dellarocas, 2001). Reputation systems collect feedback from members of an online community regarding past transactions with other members of that community. Feedback is analyzed, aggregated and made publicly available to the community in the form of member feedback profiles. If one accepts that past behaviour is a relatively reliable predictor of future behaviour then these profiles can act as a powerful quality signalling and quality control mechanism, essentially acting as the digital equivalent of a

member’s reputation. Dellarocas proved the economic efficiency of binary reputation systems and showed the significance of feedback mechanisms for efficient market equilibriums and for the measurement of the reputation amongst consumers. How far the results from Dellarocas can be carried over to dating websites will be empirically investigated in this paper with the aid of the following second hypothesis (H2):

H2: The provision of feedback profiles as a reputation mechanism for the quantitative evaluation of the consumers as co-producers on dating websites has a measurable influence on the number of purchase transactions on the e-commerce of digital paid services on these dating websites

In the following section the hypotheses will be examined with the aid of various in-depth empirical analyses.

3. Empirical Analysis of information substitutes like brand or reputation mechanism on dating websites

Data

The hypotheses concerning the willingness to buy and the willingness to pay for services on dating websites were tested on a set of data from the German payment provider FIRSTGATE, which is the leading micro-payment provider in Germany with 3,200 suppliers of paid content and paid services and 3.3 million registered users.

A sub-sample of 14 dating websites was drawn for the empirical analysis, the extraction criterion being that each dating website offers some of their services with the associated costs. This sample consisted of 98,788 purchase transactions made by 48,080 customers in the period from October 2000 to September 2004, representing all the dating websites' purchase transactions in the given period. Additionally, we collected data about the total number of referencing hyperlinks and provision of a feedback/reputation mechanism on the observed dating websites.

The sample of these 14 dating website suppliers, the number of referencing hyperlinks and the offer of feedback mechanism on the dating website are listed in Table 1.

Supplier	Number of referencing hyperlinks (November 2004)	Provision of feedback mechanisms for the qualitative evaluation of consumers
friendscout24.de	198	No
Icony.de	1,660	Yes
Metropolis.de	1,330	Yes
ilove.de	3	Yes
find2gether.de	22	No
myflirt.de	207	No
Bildflirt.de	7,430	No
Popflirt.de	6,790	No
Fitnessflirt.de	6,750	No
Flirtnest.de	18	Yes
Firststaffair.de	7,760	No
love-com.de	2	No
Meetic.de	69	Yes
Ffnflirtline.de	6,760	No

Table 1. List of analyzed dating websites

Methodology and Results of the Empirical Analysis of Hypothesis 1

The empirical analysis of Hypothesis 1 was performed in several steps by calculating descriptive statistics as well as using quantitative methods. To analyse the relationship and interdependency of a seller’s reputation and the revenues and purchase transactions of paid services the correlation coefficient between the number of referencing hyperlinks to a website and the number of purchase transactions and the revenues was calculated. The derived correlation coefficients are presented in Table 2.

correlation coefficients	number of purchase transactions	revenues
number of referencing hyperlinks	0.3944	0.4552

Table 2: Correlation Coefficients

As Table 2 shows, all correlation coefficients are positive. This indicates a positive relationship and interdependency of a seller’s reputation and the revenues and purchase transactions of paid services.

To detect the relationship and dependency of a seller’s reputation and the revenues and purchase transactions of paid services we computed several regressions. To find a first indicator for the kind of relationship and dependency we use the LOESS (locally weighted regression scatter plot smoothing)

method. Figures 1 and 2 in Appendix 1 show trends which were computed by the LOESS method and a “Smooth-Parameter” of 0.8.

The run of the curves in Figures 1 and 2, computed by the LOESS method, are comparable with the run of a quadratic equation. Therefore, we analyzed the relationship and interdependency of a seller’s reputation, revenues and purchase transactions of paid services by a quadratic regression model ($y_1 = a_1(x) + a_2(x)^2 + e_1$ for revenues, purchase transactions, customers and $y_1 = a_1(x) + a_2(x)^2 + a_2(x)^3 + e_1$ “loyal” customers). Figures 3 and 4 (see Appendix 2) together with Tables 3 and 4 show the results of the regression analysis.

Source	SS	df	MS	
Model	16251137.6	2	8125568.78	
Residual	46961201.4	165	284613.342	
Total	63212339	167	378517	
Number of obs.	= 168	[95% Conf. Interval]		
F(2, 165)	= 28.55			
Prob > F	= 0.0000	.099557	.099557	
R-squared	= 0.2571	.000075	.000075	
Adj R-squared	= 0.2481	241.742	241.742	
Root MSE	= 533.49			
Number of purchase transactions	Coef.	Std. Err.	t	P> t
referencing hyperlinks	.2851007	.093972	3.03	0.003
referencing hyperlinks ²	-.0000509	.000012	-4.06	0.000
cons	417.3984	88.9646	4.69	0.000

Table 3: Results of the regression analysis: Number of purchase transactions per day (dependent variable) and the number of referencing hyperlinks (independent variable)

Source	SS	df	MS	
Model	4.2291e+09	2	5.49241684	
Residual	36.1149052	165	44850177.2	
Total	1.1629e+10	167	69636789.9	
Number of obs.	= 168	[95% Conf. Interval]		
F(2, 165)	= 47.15			
Prob > F	= 0.0000	-9.47165	-4.813331	
R-squared	= 0.3637	.0004487	.0010704	
Adj R-squared	= 0.3559	11451	15861.08	
Root MSE	= 6697			
Number of purchase transactions	Coef.	Std. Err.	t	P> t
referencing hyperlinks	-7.142498	1.179656	-6.05	0.000
referencing hyperlinks ²	.0007595	.0001574	4.82	0.000
cons	13656.04	1116.79	12.23	0.000

Table 4: Results of the regression analysis: Revenues per day (dependent variable) and the number of referencing hyperlinks (independent variable)

The correlation coefficient and the regression analysis show that the relationship and interdependency of a seller’s reputation and the revenues, purchase transactions, and customers of paid services on dating websites is positive and quadratic. This means that the number of purchase transactions and customers of

paid services increase proportionally (quadratic) with a seller’s reputation. In the chapter following the next section these empirical results will be discussed in the context of the hypotheses and the theoretical approaches.

Methodology and Results of the empirical Analysis of Hypothesis 2

The empirical analysis of Hypothesis 2 was performed in a similar way to the empirical analysis of Hypothesis 1. Several descriptive statistics as well as quantitative statistics were calculated. To analyse the relationship and interdependency of reputation mechanisms and purchase transactions of paid services the correlation coefficient between provision of feedback system respectively feedback profiles on a dating website and the number of purchase transactions and the number of users who consume paid services was calculated. The correlation coefficient between the provision of a feedback system on a dating website and the number of purchase transactions as well as the correlation coefficient between the provision of a feedback system on a dating website and the number of users who consume paid services are both positive. In Table 5 these correlation coefficients are listed.

Correlation coefficient	Number of users who consume paid services	Number of purchase transactions
Feedback system / feedback profiles	0.3355	0.3510

Table 5: Correlation Coefficients

Table 5 shows that the correlation coefficients are positive which indicates a positive correlation of the provision of a feedback system on a dating website and the willingness to purchase paid services on these websites (measured by the number of transactions).

The derived correlation coefficients suggest a strong relationship between the buying and consumer behaviour and feedback/reputation mechanisms on dating websites. To analyze the significance of these relationships the ANOVA was computed. The “Analysis of Variance” method is a method which analyzes the effect of one or several independent ordinal scaled variables (e.g. the offer of feedback/reputation mechanisms) in relation to one dependent variable (e.g. the number of purchase transactions) (Backhaus, Erichson, & Plinke, 2003).

To analyze the relationship for each of the dependent variables “number of users who consume paid services” and “number of purchase transactions” a one-way ANOVA was computed with feedback/reputation mechanisms as the independent variable.

Number of observations = 168		R-squared = 0.1096			
Root MSE = 582.301		Adj R-squared = 0.1042			
Source	Partial SS	df	MS	F	Prob > F
Model	6926063.21	1	6926063.21	20.43	0.0000
Feedback Profile	6926063.21	1	6926063.21	20.43	0.0000
Residual	56286275.8	166	339073.951		
Total	63212339	167	378517		

Table 6: ANOVA: Impact of feedback systems on the number of users who consume paid services

Number of observations = 168		R-squared = 0.1125			
Root MSE = 7884.9		Adj R-squared = 0.1072			
Source	Partial SS	df	MS	F	Prob > F
Model	1.3089e+09	1	1.3089e+09	21.05	0.0000
Feedback Profile	1.3089e+09	1	1.3089e+09	21.05	0.0000
Residual	1.0320e+10	166	62171581.9		
Total	1.1629e+10	167	69636789.9		

Table 7: ANOVA: Impact of feedback systems on the number of purchase transactions

The different statistics fully support the conclusion that the provision of feedback profiles as a reputation mechanism on dating websites increases the consumer’s willingness to purchase paid services on these websites. In the following section the empirical results will be discussed in the context of the hypotheses and the theoretical approaches.

4. Discussion and Implications

The objective of this paper was to explore the influence of information substitutes such as a seller’s reputation or reputation mechanisms among the customers on the number of purchase transactions and revenues of digital paid services on dating websites.

On the basis of several empirical analysis we explain the relationship between the reputation of a paid service supplier and the number of purchase transactions and revenues of digital paid services on these websites. We show, with quantitative analysis, that the number of referencing hyperlinks of a website as a construct of the reputation of a supplier of a dating website has a measurable influence on the revenues and purchase transactions in the e-commerce

of digital paid services of these dating websites. On the basis of the results derived from a correlation and a regression analysis, it will be shown that a positive correlation exists between the number of referred to web links as a construct of “reputation” and the number of sales transactions, revenue, and the number of customers. The proposed Hypothesis H1, that the reputation of a provider of a dating website has a measurable influence on the revenue, sales and the number of customers in the e-commerce of digitally paid services on these dating websites, can consequently not be rejected. However, an interesting aspect of this result is the form of the relationship between the construct “reputation” and the analyzed variables. With a linear increase of “reputation” of a supplier (measured by the number of referred to web links) the number of sales transactions, revenue and the number of customers per day increases quadratically. This means that the investment in reputation with e-commerce of digital goods significantly affects the number of sales transactions, revenue and number of customers per day. Thus, the statements and results drawn from the research conducted by Resnick et al. (2003), Cabral and Hortacsu (2004) and Melnik and Alm (2002) which have been generally derived for e-commerce are confirmed and cannot be rejected in the case of e-commerce of paid services on dating websites.

For many media suppliers it is possible to assign their acquired and established reputation over the decades to on-line media. This transfer of reputation helps the supplier of a website to gain trust with the consumers (or people looking for a date) of digital services. Further possibilities of gaining the trust of the consumers (or people looking for a date) of e-commerce of digital services offer web design, positive experiences, success stories of people looking for a date or the design of communication opportunities for the people looking for a date. Furthermore, without reputation it is possible for a supplier of digital products using communication to build up his/her reputation such that trust is gained in a digital good.

On the basis of further statistical analysis it will be empirically shown in this paper that feedback profiles, as a measurement of reputation among the customers, significantly influence the number of purchase transactions of paid services on dating websites. Both the correlation coefficient as well as the variance analysis exhibit a positive correlation between the provision of a feedback profile and the number of sales transactions on dating websites. This correlation makes clear that consumers build up a preparedness to consume if they trust the quality of the offer. The

quality of the offer on dating websites – the profiles of others looking for a date – is enhanced by the feedback profile, which expresses the reputation of the person looking for a date. The feedback profile as a measurement of reputation creates trust in those looking for a date such that those looking for a date develop a higher willingness to consume paid services on dating websites. Consequently, Hypothesis 2 can be confirmed. The provision of feedback profiles as a reputation's mechanism for the qualitative evaluation of consumers as co-producers on dating websites has a measurable influence on the number of purchase transactions in the e-commerce of digital paid services on these dating websites.

5. Conclusions

Reputation is an information substitute by which the uncertainty of the consumer can be reduced before purchasing a good/product. The transfer of information replacements is supported by multi-media because performance enhancing information replacements such as reputation and name recognition are transferable (Picot et al., 1993, 2001, 358). "Investing in brand and reputation is standard practice in the information biz, from the MGM Lion to the Time magazine logo. This investment is warranted because of the experience good problem of information" (Varian, 1998, 2001).

In this paper we have shown that trust is of vital importance in the e-commerce of paid services. Mechanisms which create trust such as reputation of the supplier of dating websites or consumers'/co-producers' feedback profiles on dating websites have a strong influence on the purchase and payment willingness of consumers – the revenues and purchase transactions are positively correlated with this trust creating mechanism. Feedback rating mechanisms can enhance buyers calculus-base credibility trust towards the other transaction party.

Through trust a "lock-in effect" concerning the offer can be generated - the construction of reputation thus has a long-term significance in the e-commerce of paid services on dating websites.

In the analysis discussed and presented in this paper questions regarding the following remain open:

- How do the reputation mechanisms interact?
- Which reputation mechanisms have a greater influence on the creation of trust?

The above two questions will be the subject of future studies. Irrespective of upcoming research needs the statement from Urban et al. (2000, 48) is also substantiated with regard to digital paid services: "trust will soon become the currency of the Internet".

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Appendix 1

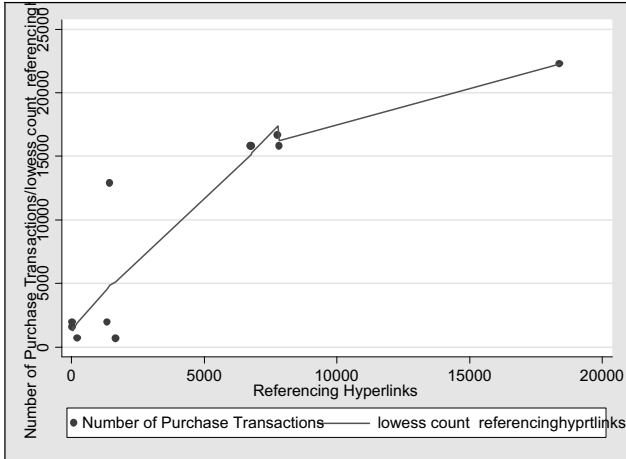


Figure 1: Trend, computed by the Loess method, for the relationship and dependency of the number of purchase transactions (dependent variable) and the number of referencing hyperlinks (independent variable)

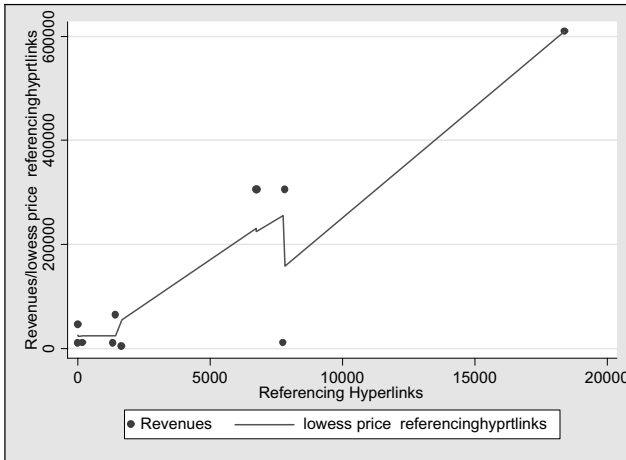


Figure 2: Trend, computed by the Loess method, for the relationship and dependency of the revenues (dependent variable) and the number of referencing hyperlinks (independent variable)

Appendix 2

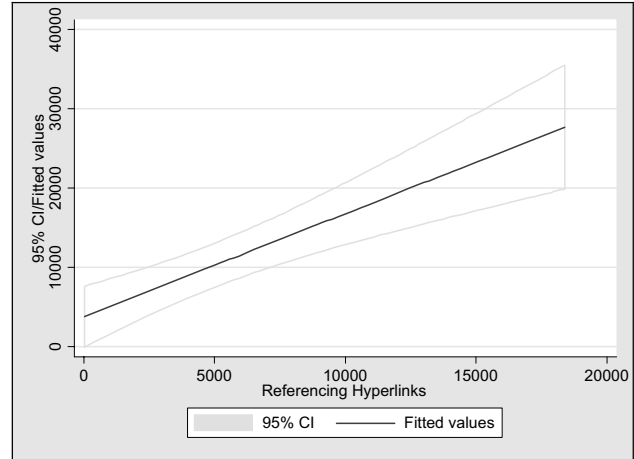


Figure 3: Quadratic function and 95% confidence interval for relationship of the number of purchase transactions and the number of referencing hyperlinks

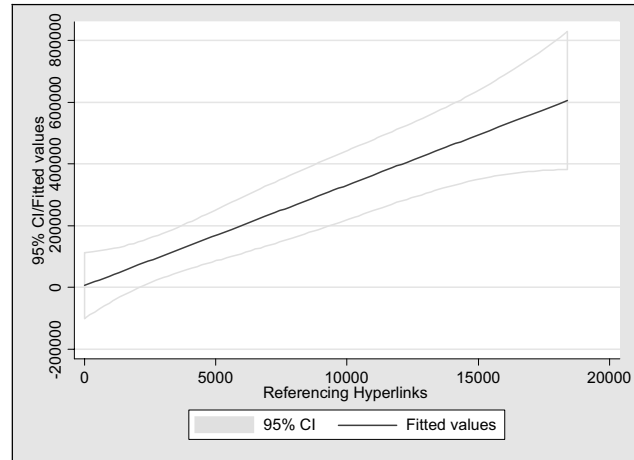


Figure 4: Quadratic function and 95% confidence interval for relationship of the revenues and the number of referencing hyperlinks