

SOCIETY AND ORGANIZATIONS IN THE KNOWLEDGE ECONOMY – PRACTICAL ISSUES

Impact of Usability Website Attributes on Users' Trust, Satisfaction and Loyalty

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Abstract

This paper presents the results of an experimental study aimed at identifying possible relationships among website usability characteristics, consumer satisfaction, trust and loyalty. These factors regard not only customer satisfaction in a transactional sense, but in the long term they may affect e-customer behavior, opinions, recommendations and attitudes toward using on-line services in general.

The study was performed with 15 Polish subjects who have made 90 evaluations of six websites offering on-line access to health, financial and travel services. To achieve the purpose of this study and to test the hypotheses, both measurement models and a structural model were evaluated by applying a partial least square approach to structural equation modeling (PLS-SEM).

It was found that four website attributes relate positively to customer satisfaction with the website. These were visual clarity, customer care, demonstration of service and user guidance. Regarding customer trust, we observed that customer care, information content and visual clarity are drivers of trust. Both satisfaction and trust positively influence the loyalty of customers to a website.

Keywords: loyalty, satisfaction, trust, website usability, PLS-SEM.

Introduction

The rapid growth of e-commerce raises questions about the relationships between website quality, consumer satisfaction, trust and loyalty. Websites have been the main access channel to online shopping and on-line services to date, resulting in vast design efforts invested in assuring their usability and ease of use. Recently, customer satisfaction to a large extent is also shaped by subjectively assessed emotional components generally labeled as User Experience (UX), adding to usability-related evaluation aspects. Among researchers (Coelho and Machas, 2003; Corritore, Kracher and Wiedenbeck, 2003; Anderson and Swaminathan, 2011; Toufaily, Ricard and Perrien, 2013)

and practitioners there is also growing interest in such factors beyond a website's visual and operational aspects, which shape not only user satisfaction but also perceived trust and potential loyalty to the particular website or brand of on-line service vendor.

The aim of this study is to determine the relationship between website usability attributes used to serve customers in terms of particular services and the satisfaction as well as trust of customers, and the impact of the latter on customer loyalty to websites.

For a service company, its website facilitates communication with customers, including self-service – to some extent. Self-service produces benefits for both the customer and the company. The customer is primarily saving time, which otherwise she/he would have to spend to get to the point of service. In turn the service vendor side usually can reduce its own costs. This situation makes a website an important element of customer service because website takes over some functions of first line staff, which in traditional services is one of the key elements contributing to creating quality, satisfaction, trust and loyalty among prospective customers.

This paper presents the results of an experimental study aimed at identifying possible relationships among website usability characteristics, consumer satisfaction, trust and loyalty. These factors regard not only customer satisfaction in a transactional meaning, but in the long term they may affect e-customer behavior, opinions, recommendations and attitude to using on-line services.

This study differs from other studies in several distinctive aspects:

- it was an experimental study, while other studies used mainly retrospective methods,
- it combined user-based usability testing and questionnaire survey, which was an appropriate methodology for a relatively small sample of users,
- it was one of the first studies of this type regarding consumers on the Polish market for on-line services.

The originality of our research comes from combining an experimental usability evaluation approach with a questionnaire survey, which allowed identifying some interesting relationships among website quality, user satisfaction, subjectively perceived trust and prospective loyalty of prospective consumers.

This paper is organized as follows. First, we start with a discussion of the specificity of customer-vendor interactions in the e-commerce environment. Next, we analyze the literature of the subject, which helps us define the concepts of interests. In the following section, we propose a theoretical framework (model) of relationships among the quality characteristics of a service website, user satisfaction, trust and loyalty. In this section, a set of hypotheses regarding the effects of website usability, satisfaction and trust on loyalty formation is proposed. Finally, we present the relevant PLS-SEM method to test the relationship among variables, our findings and conclusions.

Website quality and usability attributes

Service quality is a key factor to make a commercial website successful in terms of business outcomes as well as in terms of attracting and retaining customers. The primary concepts of service quality originate from the classic works of Oliver (1980), Gronroos (1984) and Parasuraman et al. (1985), who developed the SERVQUAL model widely used for quality evaluation of traditional services. Unlike traditional services, customer evaluation of e-service quality is not only evaluation of the service process, but is also combined with the outcome of website quality evaluation (Santos, 2003). Consequently, Zeithaml et al. (2005) developed an e-SQ model suitable for evaluation of e-services, which includes quality factors combined with both service characteristics and website quality attributes.

As customers prefer websites which are easier to use (Iwaarden et al., 2004), website usability is considered to be a quality factor and at the same time an important antecedent of customer satisfaction during and after use. Website usability remains an important concept for research and design, insofar as websites are the most popular access point used by consumers to access e-services.

Among many other quality characteristics of an interactive system, usability plays a central role, because it affects task performance, task efficiency and customer satisfaction from using the specific system in a specific context of use (the ISO 9241-110 standard). From a consumer's viewpoint, website usability can be defined in terms of satisfying the user's needs for the ability to find one's way around the navigation structure of a particular website, to locate desired information, to know what to do next, and, very importantly, to do so with minimal effort. Specific website quality characteristics such as ease of use, understandability, visual clarity, user guidance or error tolerance have been collectively labeled as website usability and often used in marketing communication about new on-line services.

The impact of website quality characteristics on customers (with usability in particular) has been the subject of many studies, which resulted in the development of a variety of web usability models, usually presented as sets of usability attributes.

Some models treat jointly quality characteristics of a service and of a website. For instance Santos (2003) presented a model which identifies two main dimensions of e-service quality: incubative factors, relevant mostly to website design, and active factors – relevant to website usability validated 'in action'. The incubative dimension consists of ease of use, appearance, linkage, structure and layout, and content. The active dimension consists of reliability, efficiency, support, communication, security, and incentives. Another model developed by Ojasalo (2010) points out that there are some distinctive characteristics of e-services: interaction through the Internet, communication may be highly personalized, the service offering may be adjusted to customer needs and service delivery not restricted by opening hours and distance, while interaction with e-customers is restricted by viewing and hearing. The key issue in Ojasalo's model is the customer's subjective perception of website usability attributes such as ease of use, visual design and appearance, personalization, information, responsiveness, communication, security and reliability.

Another group of models focuses entirely on identifying recommended website usability characteristics and developing appropriate design guidelines. A vast literature on website design ranges from user-based website usability studies (Dumas, 2002; Yang et al., 2005) through website design guidelines (Phyo, 2002; Souders, 2003) to application-oriented website design style guides (Lynch and Horton, 2003; Neville, 2010).

Some website quality models attempt to focus not only on website usability, but also on the emotional reactions of users' covered under the general umbrella term called User Experience (UX). Although a commonly accepted definition of UX has not been agreed upon yet, this term has been broadly used for adding the emotional expectations of users to designing user-service interaction (Roto et al., 2010). Moreover, it often aims at including economic aspects of a customer's experience with a specific brand or service on-line (Sikorski, 2008). In e-marketing the term customer experience has been extensively used in order to cover both customer satisfaction factors and prospective customer attitude about returning to a specific website in the future.

The specific economic context of interactions between a customer and a service website has been studied for instance by Basinska et al. (2013) and resulted in identifying nine main usability-relevant factors, affecting a user's satisfaction from using a service website. The nine factors were as follows: *attractive price, low additional expenses, convenient access to service, sufficient information, secure access, easy website operation, low manual load, low cognitive load and benefits from marketing incentives*. Despite limited scale of the study, consumers' main preferences regarding website quality characteristics have been identified, with cost-related factors rated at the top and workload-related factors lower

on the priority list.

Contemporary approaches to website quality cover not only classical, task-oriented usability, but also emotional reactions as described by User Experience.

Most recently, models relevant to e-service quality usually focus also on the economic aspects of consumer-service interaction, in addition to website usability addressing consumer satisfaction, trust and loyalty issues as well (Toufaily et al., 2013). The new challenge for e-business designers and managers is to design an e-business process which provides not only excellent website usability, but one that will also raise consumers' trust and satisfaction, resulting in their prospective loyalty to a specific website or service.

Analyzing potential relationships among these factors is a starting point to resolve this issue. The results of this study presented in the following sections will form some useful conclusions and recommendations.

Loyalty and its determinants

The importance of customer loyalty as a crucial factor in the development of modern enterprises has been emphasized by many researchers (Baldinger and Rubinson, 1996; Oliver, 1999; Ball, Coelho and Machas, 2003; Anderson and Swaminathan, 2011; Dabrowski, 2012; Toufaily et al., 2013). This is due to the fact that there is now strong competition between enterprises, which results in a wide range of products and brands. At the same time, buyers' requirements are growing, so they are looking for new and better ways to satisfy their needs. In this situation, buyers' loyalty to the company or its products is a strong competitive advantage in modern enterprise. Loyal buyers, who repeat purchases of a certain product or service, guarantee a certain level of sales and profits. Therefore, companies are trying to build a group of loyal customers and at the same time looking for new ways of developing customer loyalty.

Originally, in the area of business activity, the concept of loyalty was related to the brand. This concept was adequately captured by Jacoby and Chestnut (as cit. in Falkowski and Tyszka, 2003). The authors defined brand loyalty as the willingness to re-purchase the products of a given brand in conjunction with a positive attitude towards the brand. They indicated that brand loyalty has two important aspects. The first concerns the attitude towards the brand and reflects primarily an emotional experience toward it, while the second refers to the behavior and involves the repetition of purchasing or recommending the brand to other potential buyers. Currently, the concept of loyalty refers not only to the brand but also to other objects, such as an enterprise, shop or website (Toufaily et al., 2013). In the latter case we are dealing with e-loyalty or online loyalty, by which is meant a positive attitude to the website, which will result in re-use and recommendation of the site to others (Anderson and Srinivasan, 2003).

There are many drivers of customer loyalty online. Toufaily et al. (2013) distinguished five groups of these characteristics on the basis of previously conducted studies of the determinants of online loyalty. These groups apply

to customers, the website, products or services offered, the seller, and the environment. The first group contains four subgroups that relate to relational variables (e.g. satisfaction, trust, commitment), perceptions (e.g. perceived value, perceived switching cost), psychological variables (e.g. attitude, motivations) and relationships with technologies (e.g. IT experience). In the second group there are different quality website attributes. This group includes many characteristics and they occur at different levels of detail. For example, on the one hand, there are general characteristics such as the quality of e-service or system quality, and, on the other hand, specific features like personalization, interactivity, ease of use or security. In the third group are the features of the products or services offered. This includes, for example, product quality, price perception and value for money. In the fourth group are included such features of a seller as, for example, reliability and support service quality. The fifth group, which concerns the characteristics of the environment, contains only one characteristic, namely, culture. Analysis of these five groups shows that the most important for researchers are the first two groups, since researchers' effort is mainly concentrated on them when they search for the determinants of loyalty (Toufaily et al., 2013). We can also observe that the first of these groups is clearly dominated by satisfaction and trust. Thus, we can conclude that the buyers characteristics such as satisfaction and confidence, and quality website attributes are crucial when considering online customer loyalty.

Satisfaction and trust

Satisfaction can be defined in many ways. According to Kotler and Armstrong (2008), satisfaction means 'the extent to which a product's perceived performance matches a buyer's expectations'. Hill and Alexander (2003) note that customer satisfaction level reflects the extent to which the overall product offered by an organization fulfills a set of customers' requirements. We should add that in the area of marketing the term product refers both to physical goods as well as services.

The way of creating satisfaction is explained by the expectancy-disconfirmation framework that was developed according to Helson's adaptation theory (Oliver, 1980). The expectancy-disconfirmation framework posits that customer expectations form a frame of reference that influences the level of satisfaction. If the outcome, e.g. product or website performance, is below this reference point – a situation called a negative disconfirmation – then the customer is dissatisfied. If this outcome reaches the reference point, the customer is satisfied. When results are better than expected, i.e. above the reference point – the situation called a positive disconfirmation – then the customer is highly satisfied or delighted.

A website can be regarded as an interactive IT solution which mediates between customers and a service provider, thus it is a part of the service provided by a vendor. Therefore, in this study, by customers' satisfaction from the website we understand the extent to which a website fulfills user expectations.

Trust is considered to be another important aspect in the buyer-seller relationship (Moorman, Zaltman and Deshpande, 1992; Morgan and Hunt, 1994; Anderson and Swaminathan, 2011). In a situation when a customer is served online, trust in the website is a component of the overall trust in a service-provider. Trust appears when risk and uncertainty are incorporated in the relationship. For example Deutsch (as cit. in Corritore et al., 2003) defines trust as 'the willingness of an individual to behave in a manner that assumes another party will behave in accordance with expectations in a risky situation'. When a situation is certain, trust is not necessary. However, being self-served through website is to a certain extent risky, because customers are not trained for this. On the other hand, trust comes out in a situation when there is vulnerability on the part of the trustor (Moorman et al., 1992; Singh and Sirdeshmukh, 2000; Corritore et al., 2003). In the case of online situations, the vulnerability could appear because of lack of users' necessary knowledge or insufficient or biased information provided by a vendor.

In this study, we follow the approach proposed by Corritore et al. (2003) who considered trust to be a relationship between an individual person and a specific website. The authors defined online trust as 'an attitude of confident expectation on an online situation of risk that one's vulnerabilities will not be exploited' (Corritore et al., 2003).

Theoretical model and hypotheses

Figure 1 presents the study's theoretical (conceptual) model and the hypothesized relationships. The model captures a quite substantial number of website characteristics, hence it can be regarded as a complex one.

It includes the following nine website attributes: visual clarity (*VisClar*), ease of use (*EasUse*), user guidance (*UseGui*), information content (*InfCon*), interactivity (*Inter*), personalization (*Perso*), service demonstration (*SerDem*), recommendations (*Recom*), customer care (*CusCar*). These attributes are the exogenous variables in our model and each of them is related to two endogenous variables, namely customer satisfaction of website (*Satis*) and customer trust to website (*Trust*). The two latter are related to the focal endogenous variable, i.e. customer loyalty to website (*Loyal*).

The theory, which relates product attributes with customer loyalty, is the so-called chain of quality-satisfaction-loyalty. It assumes that, in the first stage, improvement of the product characteristics (e.g. design, quality) causes an increase in customer satisfaction. Then, in the second stage, this increase in customer satisfaction leads to greater customer loyalty. In consequence, in the third stage, the increase in loyalty leads to higher company profits (Anderson and Mittal, 2000). The concept of the quality-loyalty chain may be applied to describe the relation between a website and its users. Then, as the product will be placed a website with its specific attributes (e.g. ease of use, interactivity, visual clarity), improving these characteristics should lead to greater customer satisfaction with the service, which in turn will cause increased customer loyalty to the service and, consequently, higher profit of service provider. A common research practice when investigating the relationships in the quality-loyalty chain is to concentrate on the two first stages of the chain because usually customers are investigated (Srinivasan, Anderson and Ponnawolu, 2002; Flavian, Guin and Gurra, 2006; Anderson and Swaminathan, 2011; Dickinger and Stangi, 2013).

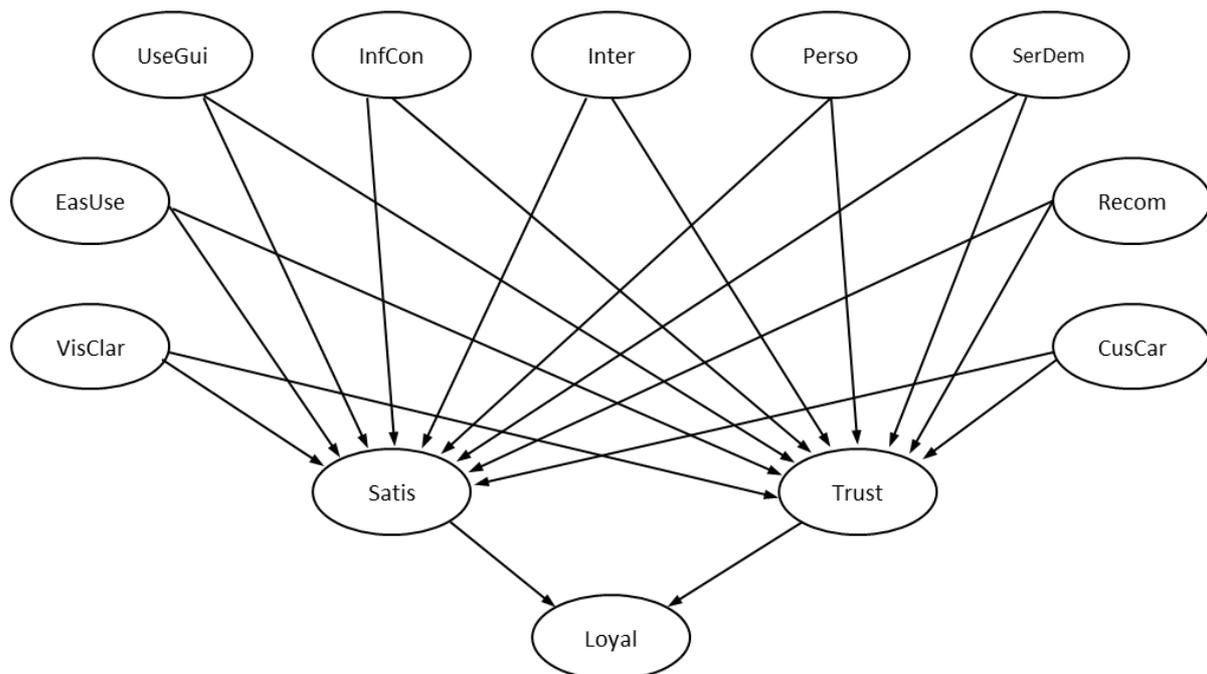


Figure 1. Theoretical model

Note: *VisClar* – visual clarity; *EasUse* – ease of use; *UseGui* – user guidance; *InfCon* – information content; *Inter* – interactivity; *Perso* – personalization; *SerDem* – service demonstration; *Recom* – recommendations; *CusCar* – customer care.

Some previous studies – primarily in the area of e-commerce – confirmed the relationship between specific features of websites and customer satisfaction (Ribbink et al., 2004; Flavian et al., 2006; Kassim and Abdullah, 2008; Anderson and Swaminathan, 2011).

An important customer characteristic is also trust where online customer loyalty is concerned. Previous studies proved that customer trust to website is a determinant of online loyalty (Ribbink et al., 2004; Flavian et al., 2006; Guin and Gurra 2006; Kassim and Abdullah, 2008). As in the case of satisfaction, links between specific website attributes and trust were found, especially in the field of e-commerce (Ribbink et al., 2004; Flavian et al., 2006; Kassim and Abdullah, 2008).

On this basis, with respect to websites used to also serve customers within a specific service, the following four research hypotheses have been formulated.

Hypothesis 1. The greater the level of (a) visual clarity, (b) ease of use, (c) user guidance, (d) information content, (e) interactivity, (f) personalization, (f) service demonstration, (g) available recommendations, and (h) customer care, the higher the customer satisfaction with the website will be.

Hypothesis 2. The greater the level of (a) visual clarity, (b) ease of use, (c) user guidance, (d) information content, (e) interactivity, (f) personalization, (f) service demonstration, (g) available recommendations, and (h) customer care, the higher the customer trust to the website will be.

Hypothesis 3. Customer satisfaction with the website relates positively to customer loyalty.

Hypothesis 4. Customer trust in a website relates positively to customer loyalty.

Method

Group. The study was conducted in a group of customers already experienced as online service website users. It was expected that participants should meet the following research criteria:

- be experienced in making use of online banking, travel or health services,

- be experienced in using social networking services (media).

The group of 87 extramural students of the Faculty of Management and Economics of Gdańsk University of Technology responded positively to the recruitment questionnaire. Only respondents who met the research criteria and assented to participation in the survey were included. In the end, the experimental group consisted of 15 persons, 9 men and 6 women. Seven persons were under 25 years of age, six were 26–35 and two were 36–45 years old.

Instruments. Based on an earlier analysis of factors shaping the perception of website quality and satisfaction of the user, a list of nine main evaluation attributes affecting the user experience during and after the use of the service website was compiled. The usability characteristics of web services and their illustrative items considered were the following: visual clarity, ease of use, user guidance, information content, interactivity with provider, personalization, service demonstration, recommendations, and customer care. Descriptions and examples of these attributes are presented in Table 1.

The items were evaluated using a 6-point Likert scale, where 1 is the lowest and 6 the highest rating. Each factor consisted of three items.

Apart from the evaluation of the functional features described above by the nine factors, the participants of the survey were asked about relational factors like trust, satisfaction and loyalty to a website. To identify satisfaction and trust we used single-item measures by asking respondents about their level of satisfaction and, respectively, level of trust to the website. Our measure of loyalty included three items (i.e. willingness to return to a given website, willingness to recommend the website to a friend, willingness to give a positive recommendation for the website). The items – both in single- and multi-item relational measures – were evaluated using again the 6-point Likert scale, where 1 was the lowest and 6 the highest rating. Altogether, 15 survey respondents made 90 evaluations of six service websites.

Table 1

Website Usability Characteristics: Descriptions and Examples

Attribute of Website Quality	Description	Example
Visual clarity	Clear menu and navigation and clear division of the screen	Website screen and menu layout are not cluttered and logical
Ease of use	Low mental and manual effort	Website operation does not make user perceptibly tired
User guidance	Immediate display of results	Website guides user via subsequent steps of operation and display prompt feedback of user's actions
Information content	Reliable and exhaustive descriptions	Website offers detailed description of products/services
Interactivity	Diverse forms of contact and prompt reaction	Many forms of contact are available and responses to user's actions and enquiries come promptly
Personalization	History of activity in the web service	Website saves history of user's activity and contacts
Service demonstration	Display of the price and possibility to test the service	Website presents the demonstration of the service
Recommendations	Making opinions available, possibility of giving recommendations	Website offers and option to add user's own opinions and recommendations
Customer care	Visible attention to perfectionism and expression of empathy to the customer	Website makes the impression that the service vendor is professional and cares about prospective customers

Three categories of online services and two services from each category were selected for the study:

1. Financial services – two banking websites (*mBank.pl* and *pekao.pl*),
2. Travel services – two hotel booking websites (*accorhotels.com* and *booking.com*),
3. Health services – two websites of private medical dispensaries (*luxmed.pl* and *swissmed.com.pl*).

The websites were chosen from among those popular in each category of services (i.e. financial, travel or health online services), with our intention to present participants in this experiment with two websites in each category, but with different levels of usability. Selection of potential websites for the experiment was made by expert evaluation in an earlier research stage. For instance, the category of financial services website was represented by *mBank.pl* – the first Polish entirely on-line bank with advanced on-line solutions – and *pekao.pl*, which has a decades-long tradition of operating in the brick-and-mortar channel, having only recently added on-line access to their financial services. Travel services were represented by *accorhotels.com*, a relatively simple hotel reservation website and *booking.com*, a comprehensive system for finding accommodations of any sort on zoomable maps and using user's recommendations as an important search hint. Finally, *luxmed.pl* and *swissmed.com.pl* are two websites which provide access to health related services; both are privately-owned health service providers, and preliminary evaluation showed that clear differences in website usability characteristics make them good candidates for this experimental study.

Having selected the websites for the experiment, we assumed that user experience from using two websites differing in their usability level would be a good predictor for identification of potential determinants of willingness to establish further relationships with the service vendor. In the questionnaire survey, subjects declared their willingness to use a particular service website again. It was therefore assumed that websites of a given type, tested by users in two variants, would result in measures expressing differing attitudes to returning and remaining loyal to each of the particular websites.

The experimental tasks prepared for the users were a problem-solving assignment, defined generally as choosing the best offer, based on information acquired from the website. In the case of travel services, subjects were asked to choose a hotel in a defined location, satisfying pre-set requirements; in the case of health financial services – to find the most attractive loan offer for buying a car, supported with a simulation of the size and schedule of loan payments. Regarding health related services the task was to find a reputable allergist, book an appointment on-line and find out which preliminary medical tests should be done beforehand.

Each task required the use of particular website functions by the user, acquisition of appropriate information and, to some extent, economic thinking, directed towards balancing diverse benefits and risks perceived as effects of possible acceptance of the offer submitted on a given website. After having completed each task, the participants were asked to fill in a questionnaire

for the measurement of usability and relational factors.

Data Analysis. In order to achieve the purpose of this study and to test the hypotheses, the SmartPLS statistics package program was used. The evaluation of measurement models and the structural model was performed by applying partial least square approach to structural equation modeling (PLS-SEM). The PLS-SEM method was chosen because it is suitable for complex models when sample size is small (Hair et al., 2014).

When evaluating the measurement and structural models we followed indications given by Hair et al. (2014). Our measurement models (scales) for all constructs, except satisfaction and trust, were reflective multi-items measures, so for models evaluation we used: a) internal consistency reliability by calculating Cronbach's alpha and composite reliability (CR) coefficients, b) convergent validity by assessment of outer loadings of indicators as well as average variance extracted (AVE) of the constructs, and c) discriminant validity through checking the Fornell-Larcker criterion (Nunnally, 1978; Hair et al., 2014).

The structural model was first checked for multicollinearity issues by calculating the variance inflation factor (VIF). The VIF ranges from 1,2 to 4,5 – below the recommended cutoff of 5 (Hair et al., 2014). Standard errors of the structural path estimates were obtained by bootstrapping the sample to 5000. Having these results we assessed the significance and relevance of the structural model path coefficients relationships, and the level of the coefficient of determination (R^2).

Findings

Measurement models evaluation. For all multi-item constructs, except visual clarity, the Fornell-Larcker criterion was met. In the case of *VisClar* one of the outer loadings was low (0,457) so it was removed from the construct to improve both convergent validity as well as discriminant validity. Finally the construct *VisClar* included two items and other multi-items constructs – three. This led to fulfilling the necessary requirements for both reliability as well as validity for all multi-items constructs. The results are shown in Table 2 and Table 3.

From Table 2 it can be seen that all measurement scales have the required internal consistency reliability. The values of both coefficients, Cronbach's Alpha as well as composite reliability, exceeded the minimum recommended level of 0,70 for all the latent variables (Hair et al., 2014). Additionally, all latent variables had an average variance extracted (AVE) well above the recommended value of 0,50 (Hair et al., 2014). Thus, convergent validity may be claimed for all latent variables of the model.

Table 3 presents the results of the discriminant validity of measurement scales. The table shows the values of the correlation coefficient between the latent variables. On the diagonal of this table the values of the square root of the AVE for each construct were placed. The analysis of the values given in Table 3 indicates that the Fornell-Larcker criterion is met for each latent variable, since the square root of each construct's AVE is greater than its highest

correlation with any other construct (Hair et al., 2014). This criterion does not apply to single-item measures.

Structural model evaluation. The path estimates for our structural model are reported in Table 4.

Hypothesis 1 postulates that that higher levels of

visual clarity, ease of use, user guidance, information content, interactivity, personalization, service demonstration, available recommendations, and customer care of website will each have positive effects on customer satisfaction.

Table 2

Assessment of the Measurement Models

Latent Variable	Coefficient		
	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Customer care	0,824	0,896	0,744
Easy of use	0,826	0,896	0,743
Information content	0,831	0,899	0,747
Interactivity	0,760	0,864	0,682
Loyalty	0,958	0,973	0,923
Personalization	0,864	0,916	0,785
Recommendations	0,927	0,954	0,874
Service demonstration	0,813	0,888	0,726
User guidance	0,859	0,914	0,781
Visual clarity	0,863	0,926	0,929

Table 3

Correlations among the Latent Variables

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	X ₁₁	X ₁₂
CusCar (X ₁)	0,863											
EasUse (X ₂)	0,561	0,862										
InfCon (X ₃)	0,647	0,600	0,864									
Inter (X ₄)	0,568	0,661	0,695	0,826								
Loyal (X ₅)	0,794	0,712	0,709	0,653	0,961							
Perso (X ₆)	0,583	0,543	0,576	0,714	0,581	0,886						
Recom (X ₇)	0,369	0,236	0,206	0,161	0,351	0,223	0,935					
Satis (X ₈)	0,686	0,714	0,618	0,680	0,868	0,581	0,289	single item				
SerDem (X ₉)	0,712	0,591	0,602	0,708	0,764	0,760	0,325	0,748	0,852			
Trust (X ₁₀)	0,712	0,680	0,696	0,599	0,847	0,550	0,233	0,751	0,647	single item		
UseGui (X ₁₁)	0,667	0,747	0,615	0,756	0,789	0,671	0,282	0,803	0,779	0,675	0,884	
VisClar (X ₁₂)	0,579	0,805	0,634	0,661	0,793	0,581	0,166	0,818	0,661	0,711	0,773	0,929

Note: Diagonal elements are the square root of the average variance extracted by the respective constructs; abbreviations as given in Figure 1.

Table 4

Structural Path Estimates

Independent Variable	Dependent Variable	Parameter Estimate	Standard Error	t-Statistics
Customer care	Satisfaction	0,164	0,068	2,408*
Easy of use	Satisfaction	-0,004	0,100	0,037
Informational content	Satisfaction	-0,016	0,080	0,202
Interactivity	Satisfaction	0,084	0,117	0,716
Personalization	Satisfaction	-0,135	0,084	1,603
Recommendations	Satisfaction	0,039	0,047	0,820
Service demonstration	Satisfaction	0,214	0,094	2,274*
User guidance	Satisfaction	0,205	0,095	2,151*
Visual clarity	Satisfaction	0,453	0,095	4,746*
Customer care	Trust	0,310	0,113	2,738*
Easy of use	Trust	0,173	0,120	1,438
Informational content	Trust	0,255	0,126	2,026*
Interactivity	Trust	-0,072	0,131	0,546
Personalization	Trust	-0,020	0,111	0,184
Recommendations	Trust	-0,024	0,088	0,271
Service demonstration	Trust	0,079	0,147	0,536
User guidance	Trust	0,023	0,158	0,146
Visual clarity	Trust	0,224	0,131	1,710*
Satisfaction	Loyalty	0,503	0,089	5,672*
Trust	Loyalty	0,471	0,088	5,347*

Note: *Parameter is significant at $p < 0,05$ based on a priori one-tailed test.

From Table 4 it can be seen that four parameter estimates for the drivers of a website's satisfaction are positive and significant. The first of them is visual clarity (beta = 0,453; $p < 0,05$), the second – service demonstration (beta = 0,214; $p < 0,05$), the third – user guidance (beta = 0,205; $p < 0,05$), and the last one is customer care (beta = 0,164; $p < 0,05$). Therefore our hypothesis that visual clarity, service demonstration, user guidance, and customer care are all positively related to customer satisfaction is supported. The strongest impact is observed in the case of visual clarity – more than two times higher than for the other significant drivers.

Hypothesis 2 implies that higher levels of visual clarity, ease of use, user guidance, information content, interactivity, personalization, service demonstration, available recommendations, and customer care that a website offers will each have positive effects on customer trust.

Regarding this hypothesis, three parameter estimates are significant and positive (Table 4). The first of them is customer care (beta = 0,310; $p < 0,05$), the second – information content (beta = 0,255; $p < 0,05$), and the third is visual clarity (beta = 0,224; $p < 0,05$). Thus, our hypothesis that customer care, information content, and visual clarity are positively related to trust is confirmed. The strongest driver of trust appeared to be customer care.

Hypothesis 3 posits that customer satisfaction will be positively related to customer online loyalty. According to Table 4, the parameter estimate for this relation is positive and significant (beta = 0,503; $p < 0,05$), indicating that this hypothesis is supported. Similarly, hypothesis 4 states that trust will be positively related to online loyalty. Also in this case the parameter estimate is positive and significant (beta = 0,471; $p < 0,05$), hence, hypothesis 4 is confirmed. For both relations, the values of beta parameters are quite strong and on similar level; however the value for satisfaction is slightly higher than that for trust.

The proposed structural model shows a high explanatory power for all of the endogenous constructs. The determination coefficient is high for satisfaction ($R^2 = 0,79$), trust ($R^2 = 0,68$) as well as for online loyalty ($R^2 = 0,83$). Hence, the amount of variance in the endogenous constructs explained by all of the constructs linked to them is substantial. These findings indicate a high predictive accuracy of the model.

Conclusions

In regard to the purpose of this study, it was found that four website attributes relate positively with customer satisfaction with a website. These were visual clarity, customer care, service demonstration and user guidance. Regarding customer trust, we observed that customer care, information content and visual clarity are drivers of trust. Both satisfaction as well as trust positively influence loyalty of customers to a website.

The results of this study confirmed that higher levels of website characteristics were associated with higher levels of customer satisfaction (hypothesis 1). Among these characteristics, the most important was visual clarity; this attribute affected satisfaction nearly twice as strongly

as service demonstration, user guidance and customer care. Therefore, it can be concluded that designing a website in a clear and transparent manner is most important for the formation of satisfaction. The impact through the sense of sight in this is of the highest priority. It is also very important because a direct interaction with the user via the online service is not possible, so the perception and assessment of the visual aspects have a dominant impact. This view was also expressed by Srinivasan et al. (2002), also Taradfar and Zang (2008), according to which greater satisfaction from the use of online services accessed via the website was strongly dependent on its design-relevant characteristics, such as ease of use and aesthetics. Moreover, higher satisfaction of users was affected by better demonstration of the service and better user guidance, such as a free trial of a video demonstration that reduces a user's uncertainty and information deficiency. Finally, customer care was also significant for the development of user satisfaction.

In this experimental study, we confirmed that users' trust was higher when some attributes were at a higher level. In our study, customer care, visual clarity and information content were significant (hypothesis 2). The results showed that the most important thing was customer care. This is an attribute that describes the perceived care about customers' needs, respecting their rights and striving for continuous service excellence. Rich and relevant information content about the service was also a factor that was appreciated by users, according to results of this experimental study.

The level of two factors: visual clarity and customer care shaped the attitudes and feelings of users. Both factors, but to varying extents, determined the level of satisfaction and the level of trust. Similar results were obtained by Garnik and Basinska (2013).

The results of our study confirmed that the level of satisfaction and level of trust was associated with the level of customer loyalty (hypothesis 3 and hypothesis 4). A higher level of customer satisfaction with the service website and a higher level of customer trust promotes greater customer loyalty. Satisfaction and trust together explained 83 % of the amount of variance in the loyalty to the website. As mentioned previously, satisfaction and trust can play a slightly different role in strengthening loyalty. Some researchers suggest that trust is a mediator between satisfaction and customer loyalty, while some others point out that both satisfaction and trust can mediate between the website quality and the loyalty of users (consumers) (Cristobal, Flavián and Guinaliu, 2007; Benedictus, 2011; Butt and Aftab, 2013).

Satisfaction and trust are similar factors, but they are treated as two separate dimensions. Their common element is the attitude to service. The dominant element is a cognitive component associated with cognitive evaluative judgment. Previous studies have shown that both user satisfaction and trust are related to users' activity on the website (Cristobal, Flavián and Guinaliu, 2007; Loureiro, Kaufmann and Rabino, 2014). However their role is different: on one hand more satisfied customers are more willing to return to the website; on the other hand, customers who lose trust in the service provider are apt to

give up using the website (Lee and Turban, 2001; Anderson and Srinivasan, 2003; Yang and Peterson, 2004). This means that one factor motivates to use the service, while the lack (or deficiency) of a second factor may motivate the decision to give up using the service. This may imply that the trust users already have may be inhibiting them from leaving the service. In contrast, satisfaction can directly enhance the activity of customers. The different role of factors that contribute to motivation and those that are associated with lowering motivation was already pointed out in the early concept of motivation to work (Herzberg, Mausner and Snyderman, 1959).

Using a paraphrase to this concept, we could say that trust is a hygiene factor and satisfaction is a growth factor. Therefore it is very important to include both satisfaction and trust to research on customer loyalty attitudes.

This study has also specific limitations. First, we want to emphasize that in the designed experimental conditions we measured declarative (potential) loyalty, and not the actual loyalty level, which could be measured only in natural conditions using longitudinal research. In addition, longitudinal studies would allow the observation of not only interdependences, but also the cause-effect relationships, including the effects of mediation. Secondly, satisfaction and trust were measured using only one item, which causes some psychometric limitations. In further research, it is recommended to use the 3-item scales, which provide higher reliability (Nunnally, 1978). Thirdly, in our study only relatively small group of participants – volunteers participated. This is characteristic for the experimental approach. As a result, we cannot generalize the results to the whole population of online services users. In further studies this experiment can be replicated in other groups, in order to make it possible to re-confirm the proposed model.

This study combines an experimental usability evaluation approach with a questionnaire survey, which seems to be novel in this type of research. The work is one of the first studies of this type on a sample of Polish e-customers, is based on PLS-SEM approach, and provides interesting results according to the proposed model.

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Tinklalapio naudojimo požymių poveikis vartotojų pasitikėjimui, pasitenkinimui ir lojalumui

Santrauka

Spartus elektroninės prekybos plitimas kelia klausimus apie sąsajas tarp tinklalapio kokybės, vartotojo pasitenkinimo, pasitikėjimo ir lojalumo. Tinklapis yra pagrindinis elektroninės prekybos kanalas, taip pat elektroninių paslaugų užtikrinimo pagrindas. Tarp mokslininkų ir praktikų didėja susidomėjimas vizualiniais ir operaciniais tinklalapio veiksniais, kurie ne tik didina vartotojų pasitenkinimą, bet ir užtikrina pasitikėjimą ir potencialų lojalumą konkrečiam tinklapiui ar prekės ženkle elektroninių paslaugų teikėjui.

Straipsnio tikslas – nustatyti ryšius tarp tinklalapio panaudojamumo požymių ir vartotojų pasitenkinimo bei pasitikėjimo, juos siejant su vartotojų lojalumu tinklapiams.

Tyrimo modelis sieja tinklalapio požymius, pasitenkinimą, pasitikėjimą ir lojalumą. Modelį galima traktuoti kaip kompleksinį, kadangi jis apima devynis tinklalapio požymius: vizualumas, naudojimo lengvumas, pagalba vartotojui, informacijos turinys, interaktyvumas, personalizacija, paslaugų demonstracija, rekomendacijos, rūpestis vartotoju. Šie požymiai yra egzogeniniai kintamieji ir kiekvienas iš jų yra susijęs su endogeniniais kintamaisiais, pavyzdžiui, vartotojo lojalumas tinklapiui. Atsižvelgiant į modelį, buvo iškeltos keturios tyrimo hipotezės.

Hipotezė 1. Didesnis vizualumo laipsnis, panaudojimo lengvumas, pagalba vartotojui, informacijos turinys, interaktyvumas, personalizacija, paslaugų demonstravimas, rekomendacijų buvimas, rūpestis vartotoju, susijęs su didesniu pasitenkinimu tinklapiu.

Hipotezė 2. Didesnis vizualumo laipsnis, panaudojimo lengvumas, pagalba vartotojui, informacijos turinys, interaktyvumas, personalizacija, paslaugų demonstravimas, rekomendacijų buvimas, rūpestis vartotoju, susijęs su didesniu pasitikėjimu tinklapiu.

Hipotezė 3. Vartotojų pasitenkinimas tinklapiu pozityviai susijęs su vartotojų lojalumu.

Hipotezė 4. Vartotojų pasitikėjimas tinklapiu pozityviai susijęs su vartotojų lojalumu.

Tyrimas buvo atliekamas derinant eksperimentinį matomumo vertinimo požiūrį su apklausa. Apklausa buvo atliekama siekiant įvertinti matomumo ir sąveikos veiksnius. Kiekvienas respondentas turėjo naudoti tam tikrą tinklapį, turėti atitinkamą informaciją ir tam tikra prasme ekonominę sąveiką, orientuotą į balansavimą tarp naudos, pelno siekimo ir rizikos, susijusios su konkrečiais tinklalapio siūlomais produktais ir paslaugomis.

Tinklalapio požymiai buvo vertinami taikant latentinius kintamuosius, apimančius po tris klausimus. Be funkcinių tinklalapio savybių vertinimo, apklausos dalyvių buvo klausiami apie tokius santykinus veiksnius kaip pasitikėjimas, pasitenkinimas tinklapiu ir lojalumas jam. Vienmačiai klausimai buvo naudojami pasitenkinimui ir pasitikėjimui identifikuoti: respondantai buvo klausiami apie jų pasitenkinimo lygį ir pasitikėjimo tinklapiu lygį. Straipsnyje taikytas lojalumo matas susideda iš trijų klausimų/teiginių. Jie buvo vertinami šešiabale Likerto skale: 1 – žemiausias, 6 – aukščiausias įvertis.

Trys internetinių paslaugų kategorijos ir dvi paslaugos iš kiekvienos kategorijos buvo pasirinktos studijai: (1) finansinės paslaugos – du bankininkystės paslaugų tinklapiai, (2) kelionių paslaugos – du viešbučių užsakymo tinklapiai, (3) sveikatos paslaugos – dviejų privačias medicininės paslaugas teikiančių ambulatorijų tinklapiai.

Apklausoje dalyvavę 15 respondentų vertino šešis tinklapius, teikiančius internetinę sveikatos, finansinių ir kelionių paslaugų prieigą. Buvo gauta 90 vertinimų, kurie buvo analizuojami. Duomenų analizei buvo naudota SmartPLS statistinė programa. Matavimo modelių ir struktūrinio modelio vertinimas buvo atliktas struktūrinių lygčių modeliavimo (SEM) mažiausių dalinių kvadratų (PLS) metodu. PLS-SEM metodas buvo pasirinktas dėl savo pritaikomumo sudėtingiems modeliams, kai imtis yra maža (Hair et al., 2014).

Vertinami matavimo ir struktūriniai modelius, vadovautasi Hair et al. (2014) rekomendacijomis. Pirmiausiai buvo patikrintas struktūrinio modelio multikolinearumas, apskaičiuojant dispersijos infliacijos faktorių (VIF). Struktūrinio kelio įverčių standartinės klaidos buvo identifikuotos

taikant 5000 imtį. Turint šiuos rezultatus, įvertintas struktūrinio modelio kelio koeficientų ryšių reikšmingumas ir determinacijos koeficiento (R^2) lygį.

Pašalinus vieną klausimą iš vaizdinio aiškumo konstrukto, matavimo modeliai atitiko būtinus patikimumo ir validumo reikalavimus daugiamatėms skalėms.

Šios studijos tikslo požiūriu buvo nustatyta, kad keturi tinklapių požymiai teigiamai koreliuoja su vartotojų pasitenkinimu tinklapiu. Tai yra vaizdinis aiškumas, dėmesys klientų aptarnavimui, paslaugų demonstravimas ir nuorodos vartotojui. Vartotojų pasitikėjimo atžvilgiu buvo pastebėta, kad dėmesys klientų aptarnavimui, informacijos turinys ir vaizdinis aiškumas lemia pasitikėjimą. Ir pasitenkinimas, ir pasitikėjimas teigiamai veikia klientų lojalumą tinklapiui.

Studijos rezultatai patvirtino, kad aukštesnis tinklapių charakteristikų lygmuo reiškia aukštesnį klientų pasitenkinimo lygmenį (1 hipotezė). Svarbiausia iš šių charakteristikų buvo vaizdinis aiškumas; šis požymis pasitenkinimą veikė beveik dvigubai stipriau, nei paslaugų demonstravimas, nuorodos vartotojui ir dėmesys klientų aptarnavimui. Todėl galima teigti, kad aiškiaus tinklapių kūrimas yra svarbiausias veiksnys formuojant pasitenkinimą. Be to, aukštas vartotojų pasitenkinimas buvo paveiktas geresnio paslaugos demonstravimo ir geresnių nurodymų vartotojui, tokių kaip prieiga prie vartotojo netikrumą ir informacijos trūkumą sumažinančios video demonstracijos. Galų gale, dėmesys klientų aptarnavimui taip pat yra svarbus vartotojų pasitenkinimui.

Taip pat buvo patvirtinta, kad vartotojų pasitikėjimas buvo aukštesnis, kai tam tikri požymiai buvo aukštesnio lygmens (2 hipotezė). Tyrime buvo svarbūs dėmesys klientų aptarnavimui, vaizdinis aiškumas ir informacijos turinys. Rezultatai parodė, kad svarbiausia – dėmesys klientų aptarnavimui. Tai požymis, apibūdinantis matomą dėmesį klientų poreikiams, pagarbą jų teisėms ir nuolatinį tobulėjimo siekį. Kaip parodė šios eksperimentinės studijos rezultatai, turtingas ir aktualus informacinis turinys apie paslaugas taip pat buvo vartotojų vertinamas veiksnys.

Tyrimo rezultatai patvirtino, kad pasitenkinimo ir pasitikėjimo lygiai buvo siejami su klientų lojalumo lygmeniu (3 ir 4 hipotezės). Aukštesnis klientų pasitenkinimas paslaugos tinklapiu ir aukštesnis pasitikėjimo lygis lemia didesnį pasitikėjimą. Kaip jau minėta, pasitenkinimas ir pasitikėjimas gali atlikti kiek skirtingus vaidmenis stiprinant lojalumą.

Pasiūlytas struktūrinis modelis parodė aukštą visų endogeninių konstrukto aiškinamąją gebą. Determinacijos koeficientas yra aukštas pasitenkinimo ($R^2 = 0,79$), pasitikėjimo ($R^2 = 0,68$), taip pat internetinio lojalumo ($R^2 = 0,83$) atvejais. Šie rezultatai rodo aukštą modelio prognozavimo tikslumą.

Tyrimui taip pat būdingas tam tikras ribotumas. Visų pirma

sukurtose eksperimentinėse sąlygose matuotas deklaratyvus (potencialaus), o ne realaus lojalumo lygmuo, kurį galima būtų išmatuoti tik natūraliomis sąlygomis atliekant longitudinalinį tyrimą. Antra, pasitenkinimas ir pasitikėjimas buvo matuojami pasitelkiant tik vieną klausimą. Tai lėmė psichometrinius ribotumus. Tolimesniuose tyrimuose rekomenduojama taikyti trijų klausimų/teiginių skalę (Nunally, 1978). Trečia, tyrime dalyvavo tik nedidelė grupė savanorių respondentų. Tai yra eksperimentinės prieigos charakteristika, tačiau dėl to negalima rezultatų generalizuoti visai interneto vartotojų populiacijai.

Verta atkreipti dėmesį į atlikto tyrimo originalumą. Eksperimento metu internetiniais šaltiniais vartotojai naudojami vienu metu; tai leido nustatyti įdomias sąsajas tarp tinklapių kokybės, vartotojo pasitenkinimo, subjektyviai suvokiamo pasitikėjimo ir numanomo potencialių klientų lojalumo.

Tyrimui būdingos ir praktinės implikacijos. Kuriant internetinių paslaugų puslapius, pirmiausia reikia atsižvelgti į du aspektus. Visų pirma, klientai tikisi vaizdinio aiškumo. Tai reiškia, kad tinklapių kūrejas turi aiškiai suskaidyti ekraną į mažesnius komponentus, pasirūpinti lengvai suprantamu meniu ir aiškia navigacija. Klientai taip pat tikisi, kad internetinis paslaugų tinklapis pademonstruos atitinkamą dėmesį vartotojo poreikiams. Šį lūkestį reikia patenkinti ir pateikiant informaciją apie tai, kaip apsaugomi klientų duomenys bei ginamos jų teisės.

Reikšminiai žodžiai: lojalumas, pasitenkinimas, pasitikėjimas, tinklapių naudojimas, PLS-SEM.

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