

A METHOD FOR IMPROVEMENT OF OBJECTIVITY OF E-SERVICE QUALITY EVALUATION

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Abstract: *Measurement and improvement of e-service quality is important for sustaining competitive advantage of an e-commerce web site. A number of e-service quality measures have recently been developed that predominantly rely on the subjective evaluation of diverse quality attributes. To increase the objectivity of e-service quality measurement a recently developed measure of e-service quality has been adapted in a way that replaces its Likert type scales for evaluation of specific attributes with check-lists that include specific observable elements for appraisal and a scoring procedure. The consistency of scoring with this adaptation of an e-service quality measure was investigated in comparison to the use of the standard measure with Likert type scales and by the use of untrained and trained evaluators. The results of the empirical evaluation indicate a greater inter-rater consistency when the adapted/objective measure is used for evaluation of the efficiency dimension of e-service quality.*

Keywords: *e-commerce, e-retailing, e-service quality, measurement.*

1. INTRODUCTION

Web service or online service (*e-service*) is related to various attributes of an online retailing web site. Web service can be delivered as *pre-sale service* and *post-sale service* [16] which include the online and offline activities of the customer and of the service provider like information search, navigation, product evaluation, decision making, ordering, making the transaction, delivery, returns and customer support (all of them influencing the customers' satisfaction with the delivered products and services; see: [20]). Perhaps the most important element of e-service is the *person-to-computer* interaction that is replacing the traditional *person-to-person* interaction in retailing.

The activities of online retailers are focusing on the measurement and the improvement of *e-service quality* that is provided to their potential customers. E-service quality can be defined as "the extent to which the web site promotes efficient and effective shopping, purchasing, and delivering of products and services" [29]. The quality of service is one of the essential elements of competitive advantage of online retailers [3] whose objectives are to convert web site visitors into customers and also to retain the customers in the competitive market where other vendors are just a click away and are offering similar products at a comparable price.

The growth of e-commerce in the global and regional markets [26] creates a special interest in the measuring of e-service quality and also in the investigation of the dimensions of e-service (for instance, see: [8], [9], [22]), as some of the important factors that influence customer satisfaction [7] and shopping experience [17] of the customers of e-commerce web sites. Having in mind the strategic challenges in front of the businesses that are competing in the e-commerce environment [2] the improvement of e-service quality is viewed as a critical element of their success [23]. The online sellers must appreciate that customers' online experiences with e-commerce web sites have an impact on their buying behavior and repurchase intention.

One review of literature indicated that the measurement of quality of service that is delivered through commercial web sites had not yet fully developed [30]. However, a number of e-service quality measures have recently appeared (see: [12]). This paper presents a brief overview of such measures and an evaluation of a new measure that is designed with an intention to reduce the subjectivity of raters/evaluators in e-service quality measurement.

2. EXISTING E-SERVICE QUALITY MEASURES

E-service quality covers various aspects of the e-commerce web site and diverse elements of customer's experience. It includes all phases of the customers' interactions with a web site and refers to the extent in which the e-commerce oriented web site supports shopping behavior, as well as the processes of buying and delivery [15]. It must be noted that when the customers are included in e-service quality evaluation, they can contribute to the product-development process [18].

The rapid increase in the number of e-commerce web sites initiated research studies that were focused on the measurement and evaluation of online service quality. Most of the recently developed e-service quality measurement instruments are based on the customers' perception of service that has been delivered to him/her through a particular web site. An extensive list of such measures should include: SITEQUAL [28], IRSQ scale [11], PIRQUAL [10], eTailQ [25], SITEQUAL [24], WebQual [13], WebQual/eQual [4], E-S-QUAL [15], and E-A-S-QUAL [12].

Even though most of the existing measurement instruments provide only a fragmented view of e-service quality (see: [12]), the results of their use can contribute to the improvement of web service and increased retention of online customers. For instance, one report [11] of the use of the IRSQ scale (with 22-items that cover five dimensions of Internet retail service quality) indicated that e-service quality measured by this scale predicts: a) the satisfaction of the customers with their overall online experience; b) whether the customers would recommend the online retail web site to their friends; and also c) the probability of future purchases by the same customers. In another research, the use of the SITEQUAL scale (with 9 items grouped in four dimensions), which was developed to evaluate the perceived quality provided by Internet shopping sites, indicated that the e-service quality is related to the overall customer online behavior on an e-retailing web site [28].

More recently developed e-service quality instruments and models usually combine the elements of previous measures and add new attributes of web sites for assessment of e-service quality, or they arrange the items/variables in different groups/factors. For instance, the Perceived Internet Retailing Quality (PIRQ) model examines the quality determinants in Internet retailing and is based on a difference between *expected* service and *perceived* service [10]. The PIRQ model was used for the development of a 23-items instrument named PIRQUAL that evaluates three groups of attributes: self-service properties,

ownership properties and relationship properties of a commercial web site. Another related measure is the eTailQ, an online retailing quality evaluation scale that can be used to predict customer judgment concerning web site quality, customer satisfaction, loyalty intentions, and attitude towards the retailing web site [25]. The eTailQ has 14 items distributed in four factors/subscales: web site design, fulfillment/reliability, privacy/security and customer service.

The second SITEQUAL instrument (see: [24]) evaluates the *minimal acceptable level* (with four factors) and *desired level* (with seven factors) of B2C retail site quality that are determined through two major constructs: service quality and information quality. The WebQual instrument [13] is designed for customer's evaluation of web sites (with 36 items grouped in 12 dimensions) and its components have an important role in predicting reuse of a web site. The other WebQual instrument (later renamed to eQual; see: [4], [5]) is used for measuring the users' perceptions of the quality of e-commerce web sites and is based on *quality function development* which includes the "voice of the customer". The eQual measure contains 23 questions that could be grouped in five factors and are thematically associated with information quality, interaction/service quality and usability. The E-S-QUAL measure (consists of 22 items and is based on four dimensions) is a scale for measuring e-service quality provided by a retailing web site [15]. The E-S-QUAL can be combined with an E-RecS-QUAL scale (that measures the quality of *recovery service* provided by a web site with the dimensions of responsiveness, compensation and contact) when a customer is having some kind of a service problem and makes an inquiry.

The E-S-QUAL scale/model was recently adapted for apparel and renamed to E-A-S-QUAL (see: [12]) to create a new and comprehensive e-service quality scale which included four dimensions from the E-S-QUAL instrument, two dimensions from the E-RecS-QUAL measure (responsiveness and contact), and also added three new dimensions: personalization, information, and graphic style. In E-A-S-QUAL the *responsiveness* dimension included the attributes satisfaction guarantee and return/exchange policy, the *contact* dimension included the attributes interactive shopping aid and company contacts, the *personalization* dimension included a total of eighteen attributes (alteration service, deferred billing, gift wrapping, gift card, e-gift card, online store credit card, free shipping, suggestions for items, promotions, wish list, e-mail service, e-mail to a friend, printer-friendly version, catalog request, account management, link to alternative sites, personal shopper, virtual community), the *information* dimension included seven attributes (company history, general company information, store information, shipping cost, sales tax, size chart, product description), and dimension *graphic style* included twenty one attributes (back view, side view, larger view, 3-D rotation, close-ups, zoom function, virtual model, video presentation, number of alternative images, presented on mannequin, presented on model, presented on hanger, presented as flat, fabric swatches, close-ups of fabric swatches, alternative color view, pictures size, consistency of presentation, consistency of image size, background music, flash intro).

It must be emphasized that the E-S-QUAL measure has only recently been published, but it had served as a basis for various adaptations and extensions that have created several other e-service quality and related measures besides the E-RecS-QUAL measure (for instance the eTransQual measure [6]).

3. PROBLEM AND HYPOTHESES

The *subjective* evaluation of e-service quality that is based on the perceptions of the customers may considerably differ from the more precise evaluations of e-service quality that are performed by experts or trained evaluators. However, even the experts or trained

evaluators may themselves differ and be inconsistent in their judgments when Likert type scales are used for the assessment of various quality attributes. Still, most of the measures of e-service quality consist of items with Likert type scales. On the other side, *objective* quality assessment can be based on measuring weight, length, reliability, durability, as well as on conformance to measurable preestablished standards and on other attributes that are not assessed by *subjective* perceptions of customers or other evaluators.

The main problem of the research presented in this paper is to investigate the possibility for development of a more objective measurement procedure with precise definition of how ratings of specific attributes of e-service quality (in form of a check-list supplemented with a precise scoring procedure). This new measurement procedure should produce a similar numerical output to the more subjective use of a 1-5 (or 1-n) Likert type rating scale.

The E-S-QUAL measure [15], that is based on the well known SERVQUAL measure of service quality [14] is one of the recent e-service quality measures with a sufficient number of items and was therefore selected to represent a standard more *subjective* instrument. In the study that is presented in this paper the E-S-QUAL measure was used as a basis for the development of a comparable but more *objective* measure of e-service quality in which the E-S-QUAL items were adapted/supplemented by replacing the ratings of e-service quality on a 1-5 scale with more objective scoring of several elements that could be observed during the interaction with the web site for each of the quality attributes of the original items of the E-S-QUAL measure.

According to the previously outlined problem of this study, the first hypothesis was defined:

- H1: "It is possible to develop a measure for e-service quality evaluation that is correspondent to the existing E-S-QUAL instrument, but more objective in the evaluation procedure."

The second hypothesis was related to the evaluation of the procedure that should make the ratings of e-service quality more objective and is formulated as:

- H2: "The adaptation of the E-S-QUAL instrument to make the ratings of e-service quality attributes more objective increases the inter-rater consistency regarding their evaluations of different e-commerce web sites."

4. THE METHOD

The empirical part of the study that is presented in this paper started with the redefinition of E-S-QUAL items so that the corresponding e-service attributes could be scored in an objective way instead of using ratings on a 1-5 Likert scale as in the original instrument. Then the trained and non-trained raters evaluated nine e-retailing web sites with the original and adapted E-S-QUAL measure. The result of their evaluation (average ratings for each web site by each group of raters, the standard deviation of the ratings of each web site by the raters, and the consistency of the ratings) was presented in graphic and tabular form.

4.1. THE INSTRUMENT

The original E-S-QUAL measure consists of 22 statements that are grouped in four dimensions (efficiency, fulfillment, system availability, and privacy) of e-service quality. When the rater/evaluator uses this instrument, he/she has to state his/her agreement with the

statements on a five-point Likert type scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The customers who are familiar with a commercial web site would need about 5-10 minutes to respond to all the items of the original E-S-QUAL measure. Here is an example of one item of the dimension *efficiency* of the E-S-QUAL measure (1 = *strongly disagree*; 5 = *strongly agree*):

- “It makes it easy to get anywhere on the site.” 1 2 3 4 5

Obviously, the response of the customer to the former statement would represent an estimation that is based on the *perception* of his/her use of the *navigational system* of the web site. The objectivity of the evaluation of this specific attribute could be increased by defining detailed scoring criteria by which the item *"It makes it easy to get anywhere on the site"* would be used for e-service quality measurement and this was done in the adapted version of the E-S-QUAL measure (in the following text it will be referred to as "a-E-S-QUAL") that was developed for this study.

When using the a-E-S-QUAL the rater/evaluator had to inspect the web pages of the e-commerce web site and respond to several questions regarding the content of the former item of the original measure (see Table 1). The same type of objective scoring (with the need for detailed observation and a check-list with a number of criteria and YES/NO type of response or with counting, e.g. of the number of "clicks" or days for delivery), was defined for all other items of the E-S-QUAL measure. This considerably extended the a-E-S-QUAL measure since some of the original items were supplemented with 2-19 scoring criteria elements and also with occasional explanations of some of those elements. It must be noted that the time that was needed to use the a-E-S-QUAL for evaluation of the commercial web site had considerably increased as well.

After the data were collected for all the items of the a-E-S-QUAL measure, a special scoring procedure was used for each item and the related criteria elements. The intention was to produce for each item a numerical result of scoring in the range of 1 to 5, as is the case of the rating on a Likert type 1-5 point scale of the original E-S-QUAL measure. For example, the criteria elements and the scoring procedure for the item *"It makes it easy to get anywhere on the site"* are presented in Table 1 and Table 2.

It is obvious that the scoring of a-E-S-QUAL was quite complex since each item had different criteria elements and a different scoring procedure. For comparison, the calculation of the total score for the original E-S-QUAL measure was performed simply by summarizing the ratings for the 22 items that were provided by the rater/evaluator. However, the scoring could procedure for each item could be programmed and performed automatically after data collection.

Table 1. An example of the scoring criteria elements for the item *"It makes it easy to get anywhere on the site"* of the adapted a-E-S-QUAL measure

Label	Scoring element	Answer
A1	Each page of this web site has a name of the owner (company, organization) of the web site.	YES / NO
A2	Each page of this web site has a hierarchical organization of the site with a text that indicates where the user is located within the site (in form of a list of all the higher levels of the site that were visited in current navigation through the site).	YES / NO

A3	Every page of this web site has a link that enables the customer to return to the homepage of the site (with a click on a button, text or an icon the user returns to the homepage of this web site).	YES / NO
A4	A *global navigational system is placed on all pages of this web site; if a *local navigational system exists it includes the structure of the global navigational system.	YES / NO
B1	There is a <i>site map</i> on this web site.	YES / NO
B2	There is a <i>site index</i> on this web site.	YES / NO
B3	There is a <i>guide</i> on this web site.	YES / NO

* A detailed explanation was provided of both navigational systems for this item of the new a-E-S-QUAL measure.

Table 2. An example of the scoring procedure for the criteria elements of the item "*It makes it easy to get anywhere on the site*" of the a-E-S-QUAL

Final score	Combination of criteria elements (see Table 1 for the explanation of labels A1-A4 and B1, B2)
5	All of "A" (A1-A4) and at least one of "B"
4	A1 and A3 and A4 and at least one of "B"
3	A1 and A2 and A4 and at least one of "B"
2	At least one of "a" and at least one of "B"
1	At least one of "A" and none of "B"

4.2. PROCEDURE

A total of 28 trained and non-trained raters/evaluators were engaged for the evaluation of e-commerce web sites. The evaluators were randomly selected among the students of the second year of a university study of information systems. Every student was provided with an explanation of the E-S-QUAL and the a-E-S-QUAL measure before they evaluated the web sites. However, 14 evaluators (one half) were randomly chosen for the *trained group* that received detailed instruction how to use both measures and evaluated one web site together with the instructor to make more even their ratings and scoring of other web sites. The untrained group was left with only the initial explanation of the web sites.

Nine e-retailing web sites were chosen for evaluation of their e-service quality. They were all physically located in the Northwestern region of Croatia. The companies that owned those web sites differed in their field of business activity and size.

The e-retailing web sites were evaluated by the 28 trained and untrained raters with the E-S-QUAL and a-E-S-QUAL measures in the following way:

- seven *trained* evaluators first used the E-S-QUAL and then the a-E-S-QUAL measure ("S-A" sequence);
- seven *trained* evaluators first used the a-E-S-QUAL and then the E-S-QUAL measure ("A-S" sequence);

- seven *untrained* evaluators first used the E-S-QUAL and then the a-E-S-QUAL measure ("S-A" sequence);
- seven *untrained* evaluators first used the a-E-S-QUAL and then the E-S-QUAL measure ("A-S" sequence).

Before performing the evaluation, the raters had to visit the e-retailing web site of a specific company and perform all of the activities that preceded purchase. Because purchasing was not performed, only the 8 items of the *efficiency* dimension were used for the investigation of the more objective procedure for the evaluation of e-service quality by the adapted a-E-S-QUAL measure. The collected data were analyzed by standard statistical methods (arithmetic means, standard deviations) and presented in graphic and tabular format.

5. RESULTS

Arithmetic means were calculated for the data collected by trained and untrained evaluators of e-service quality for 8 items of the *efficiency* scale of the E-S-QUAL measure. This scale measures the following aspects of e-service quality which are predominantly related to *ease of use* of the web site: locating what the customer is looking for, navigation, organization of the information and the web site, quick loading of web pages, and speed of transaction. The results of the use of the *efficiency* subscale for evaluation of nine e-retailing web sites by the untrained and trained evaluators is presented in Figure 1 and Figure 2. It must be noted that all the evaluators used both the standard E-S-QUAL measure and the adapted a-E-S-QUAL measure. However, 50% of the untrained and trained evaluators first used the E-S-QUAL and then the a-E-S-QUAL measure (this is denoted by "S-A") and the other 50% of both groups of evaluators first used the a-E-S-QUAL and then the E-S-QUAL measure (this is denoted by "A-S").

The results of the use of the *efficiency* subscale of the *original* E-S-QUAL measure to evaluate nine e-retailing web sites by the untrained and trained evaluators are presented in Figure 1. The average arithmetic means of the evaluations performed by the *untrained* ("S-A" and "A-S" subgroups) and *trained* evaluators ("S-A" and "A-S" subgroups) are represented by different columns for every e-retailing web site (A-I) that was evaluated. As it can be observed from the data that is presented in Figure 1, most of the evaluated web sites received rather high and similar ratings regarding the *efficiency* dimension of e-service quality. Only the e-retailing web sites "F" and "H" received rather low ratings regarding this dimension of e-service quality. However, it is also noticeable that the trained subgroup of evaluators which first used the adapted a-E-S-QUAL measure and then the standard E-S-QUAL measure (they are denoted with "Trained, A-S" in Figure 1) provided the lowest ratings with the standard measure to most of the evaluated e-retailing web sites. This could have been caused by their greater sensitivity to the elements which contribute to specific attributes of e-service quality after they had used the adapted a-E-S-QUAL measure to evaluate e-retailing web sites.

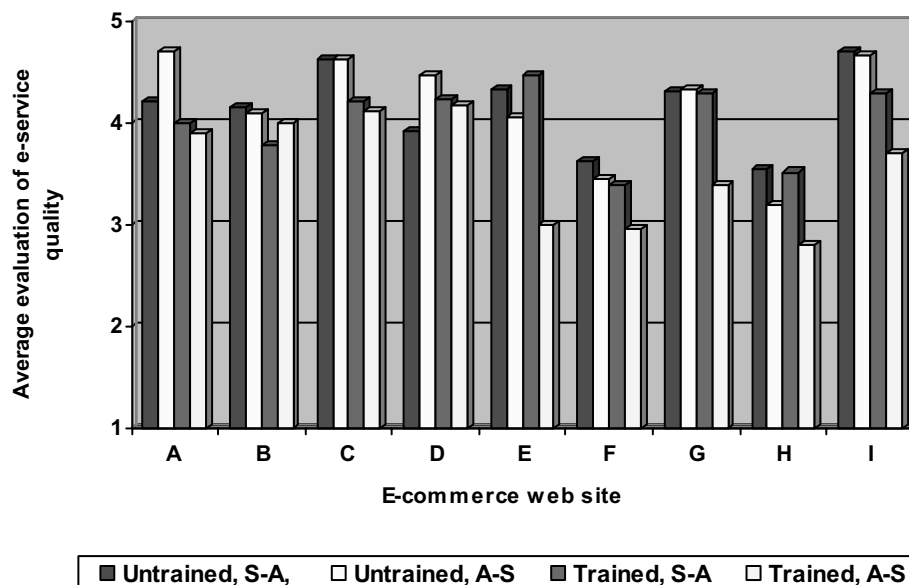


Figure 1: Average evaluation by trained and untrained evaluators of the *efficiency dimension* of e-service quality of nine e-retailing web sites (A-I) with the use of the standard E-S-QUAL measure.

The results of the use of the *efficiency* subscale of the *adapted* a-E-S-QUAL measure are presented in Figure 2. It is easily observable from the data that are presented in Figure 2 that the use of this subscale of the adapted a-E-S-QUAL measure results in much less dispersion of the average evaluation of the *efficiency* dimension of e-service quality. In fact, the average evaluation of most e-retailing web sites by the untrained and trained evaluators of both subgroups ("S-A" and "A-S") was almost the same when the adapted version of the *efficiency* subscale was used. However, the two e-retailing web sites ("F" and "H") which received the lowest evaluations when the standard/original *efficiency* subscale was used (see Figure 1) were not the web sites with the lowest average ratings when the evaluation was performed with the same subscale of the adapted a-E-S-QUAL measure. In fact, when the adapted version of the *efficiency* subscale was used, the web site "A" received the lowest average ratings.

The results that are presented in Figure 1 and Figure 2 implicate that the use of the more precisely and objectively defined scoring criteria (as in Table 1) and of the more elaborate scoring procedures (as in Table 2) instead of the use of subjective Likert type scales (as in the standard E-S-QUAL measure) can increase the consistency of evaluations of the *efficiency* dimension of e-service quality of both untrained and trained evaluators.

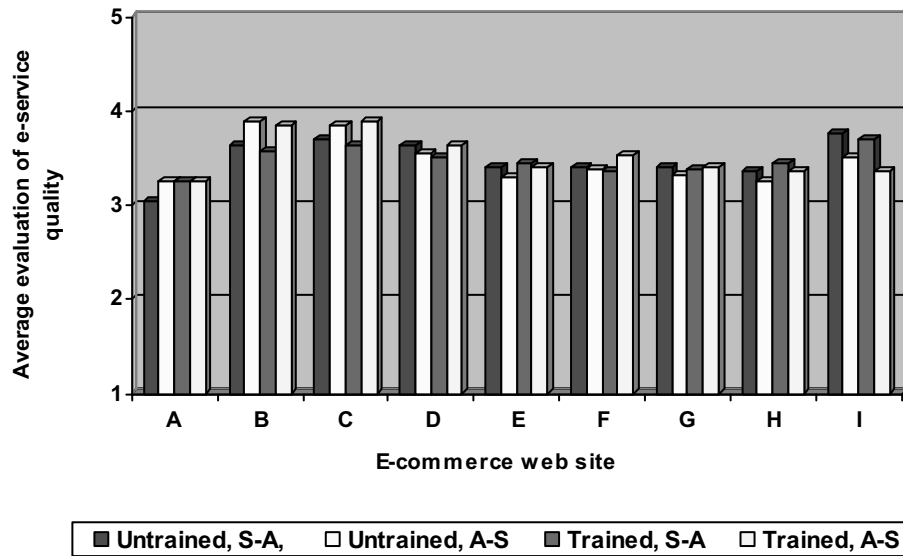


Figure 2: Average evaluation by trained and untrained evaluators of the *efficiency* dimension of e-service quality of nine e-retailing web sites (A-I) with the use of the adapted a-E-S-QUAL measure.

To verify that the average evaluations of the *efficiency* dimension of e-service quality are more consistent when the adapted a-E-S-QUAL measure is used the standard deviations (σ) were calculated for the results of the use of this subscale by each subgroup of evaluators (untrained "S-A" and "A-S"; trained "S-A" and "A-S"). The standard deviations for each of the subgroups regarding their estimations of the *efficiency* dimension by using the standard E-S-QUAL and the adapted a-E-S-QUAL measure are presented in Table 3. It must be noted that the lower standard deviation for each pair of measures is written in italics.

It can easily be observed from the data that are presented in Table 3 that the standard deviations of evaluations of the *efficiency* dimension of e-service quality is considerably lower when the adapted a-E-S-QUAL measure is used and this is in concordance with the data presented graphically in Figure 2. The standard deviations are a measure of variability of data collected for a single variable and in the case of data presented in Table 3 it can be used as an indicator of consistency of rating of different web sites by various groups of evaluators and by the use of two alternate measures of e-service quality, the E-S-QUAL and the a-E-S-QUAL. In 34 instances the variability of ratings of web sites by the use of the a-E-S-QUAL measure was lower than by the use of the E-S-QUAL measure, and in only 2 instances the variability of ratings was lower when the E-S-QUAL measure was used (see Table 3). Therefore it can be concluded that the use of the a-E-S-QUAL measure has the potential to increase inter-rater consistency in the evaluation of quality of e-commerce web sites and that such an evaluation procedure could positively influence the objectivity of such measurement.

The data presented in Figure 1 and Figure 2, and also the data presented in Table 3 support the first hypothesis (H1) that a measure can be developed for e-service quality evaluation that is more objective in the evaluation procedure than the E-S-QUAL measure. This data also support the second hypothesis (H2) of our study that the inter-rater consistency for the evaluations of e-retailing web sites would be greater when the adapted a-E-S-QUAL measure is used.

Limitations of the study that is presented in this paper are related to the use of rather small groups of trained and untrained evaluators and also to the use of a limited number of commercial web sites of companies from one region of Croatia. A larger number of evaluators and an evaluation of international web sites (for instance, those of tourist agencies or of airline companies) could improve the potential for the generalization of the results of this study. Furthermore, the use of evaluators who actually performed online purchase could enable the use of other subscales of the E-S-QUAL measure for data collection. However, the problem of complex scoring procedures for some items of the a-E-S-QUAL measure could easily be solved with the use of a web form and automated scoring procedures after data collection. Further research could include the use of more objective versions of other E-S-QUAL subscales and of other subscales from related instruments that measure additional dimensions of e-service quality. Also, an effort should be made to simplify the measurement procedure of the adapted instruments so that they could be used by untrained customers of e-retailing web sites.

6. CONCLUSION

Service quality, system quality and information quality are the online features of web sites which influence user acceptance of online shopping malls [1]. Among various models of service quality [21], the SERVQUAL model [14] was perhaps the most influential on the development of e-service quality measures like the E-S-QUAL [15]. In our study the intention was to develop and test a modification of the E-S-QUAL measure to make the measurement procedure more objective. For this purpose nine e-retailing web sites were evaluated by untrained and trained evaluators using the *efficiency* subscale of the E-S-QUAL in its original and adapted form.

The *efficiency* dimension that was measured by the subscale of the E-S-QUAL is only one of many dimensions of online service quality (for other potential dimensions see: [27]). Therefore, further research is needed to investigate whether the findings that were reported in relation to the use of the standard and the adapted version of the *efficiency* subscale could be extrapolated to the measurement of other e-service dimensions.

The main finding of the research that is presented in this paper is the development of a measure for e-service quality evaluation that is more objective than the E-S-QUAL measure. The results of the use of the *efficiency* subscale of the adapted a-E-S-QUAL measure were more consistent when both the untrained and trained evaluators are performing the evaluation (see Figure 1 and Figure 2). Also, there was less variability in evaluations of e-retailing web sites when the adapted version of the *efficiency* subscale is used. By the use of the rather complex scoring procedures of the a-E-S-QUAL measure the inter-rater consistency for the evaluations of e-retailing web sites considerably increased which indicates that in the cases when the evaluators have the time and motivation to use measures like the a-E-S-QUAL the limitations and subjectivity of the use of Likert type scales can be avoided. Interestingly, the adapted *efficiency* scale of the a-E-S-QUAL performed in the same way when the untrained and the trained evaluators were engaged. This means that such an objective procedure for evaluation could also be used by the untrained *clients* of the web sites if they could be motivated to perform the time consuming procedures of the a-E-S-QUAL measure.

Table 3. Standard deviations of the evaluations of e-service quality of nine e-retailing web sites (A-I) by untrained and trained evaluators using the original E-S-QUAL measure and the adapted a-E-S-QUAL measure

E-retailing web site	STANDARD DEVIATION ACCORDING TO GROUPS OF EVALUATORS							
	Untrained, S-A (N=7)		Untrained, A-S (N=7)		Trained, S-A (N=7)		Trained, A-S (N=7)	
	Original E-S-QUAL	Adapted a-E-S-QUAL	Original E-S-QUAL	Adapted a-E-S-QUAL	Original E-S-QUAL	Adapted a-E-S-QUAL	Original E-S-QUAL	Adapted a-E-S-QUAL
A	0.25	<i>0.14</i>	<i>0.16</i>	0.27	0.39	<i>0.35</i>	0.62	<i>0.3</i>
B	0.35	<i>0.26</i>	0.63	<i>0.27</i>	0.62	<i>0.19</i>	0.51	<i>0.45</i>
C	0.47	<i>0.27</i>	0.29	<i>0.17</i>	0.57	<i>0.27</i>	0.5	<i>0.4</i>
D	0.38	<i>0.26</i>	0.23	<i>0.2</i>	0.72	<i>0.36</i>	0.55	<i>0.36</i>
E	0.46	<i>0.2</i>	0.62	<i>0.16</i>	0.55	<i>0.26</i>	0.57	<i>0.33</i>
F	0.55	<i>0.22</i>	0.57	<i>0.2</i>	0.9	<i>0.32</i>	0.56	<i>0.21</i>
G	0.63	<i>0.44</i>	0.48	<i>0.19</i>	0.58	<i>0.36</i>	0.9	<i>0.27</i>
H	0.66	<i>0.22</i>	0.8	<i>0.27</i>	0.99	<i>0.3</i>	0.87	<i>0.28</i>
I	0.39	<i>0.2</i>	<i>0.31</i>	0.35	0.55	<i>0.31</i>	0.62	<i>0.28</i>

* For each pair of evaluations of e-service quality of an e-retailing web site the lower standard deviation (of the evaluations that were obtained with the standard E-S-QUAL *or* with the adapted a-E-S-QUAL measure) is written in italics.

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