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Gender-specific on-line shopping preferences

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Abstract This study approaches the question of whether on-line shopping preferences differ from a gender perspective. Data is collected by the means of an on-line survey ($n = 170$) in which male and female on-line shoppers rank the importance of various features that have an impact on their shopping experience. The results show no gender differences at the construct level. However, when comparing the ranking of individual features some statistically significant differences exist. Males, for example, rank accurate description of products and fair pricing significantly more important than females. Females on the other hand consider return labels significantly more important than their male counterparts. The implications for research are twofold. First, the study provides additional insights into on-line shopping preferences from a gender perspective. Second, the study demonstrates that significant differences might not show on the construct level but only when features are individually compared with each other. The implication for practice is to help businesses enhance their on-line shopping platforms to better consider the particular needs of male and female on-line shoppers.

Keywords B2C · E-commerce · Gender · On-line shopping · User perspective · User satisfaction

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1 Introduction

In today's digital world, customers can engage in business transactions to purchase products or services over the Web twenty-four hours a day, seven days a week. We call this phenomenon *on-line shopping* and it has been particularly popular since the mid-1990s. Ever since, on-line shopping has been of interest for numerous researchers. Their research has contributed to a better understanding of various facets of this phenomenon. Some studies with wide-ranging impact on understanding on-line shopping include: research on consumer reactions [1], similarities and dissimilarities between on-line and traditional shopping [2], consumer perceptions of privacy and security risks [3], customer satisfaction [4], Web site usability and design [5], customer loyalty [6], and trust [7]—to name a few of them.

Another recurrent research question is what makes on-line shopping successful [8–10]. We follow this question in our study and aim at contributing to this particular aspect of the e-commerce literature. Yet our approach differs from previous research by explicitly taking into account that males and females have different perceptions of what is considered successful on-line shopping [11, 12]. Hence, we research gender-specific on-line shopping preferences; and we approach this topic through investigating how male and female on-line shoppers rank the importance of various features that have an impact on their on-line shopping experience. These features impact on the on-line shoppers' satisfaction and loyalty, which in turn is used to explain successful on-line shopping.

Research has shown that loyal customers are crucial to business survival because attracting new customers is considerably more expensive than retaining old customers [13, 14]. For businesses this means that increased customer loyalty typically leads to increased profit and growth [15–17]. Loyalty is expressed by behavioral intention to reuse, for example, a particular Web site to again engage in business transactions, and/or by giving a positive testimonial and recommendation of the Web site to others [18–20]. Loyalty, hence, is the result of being a satisfied customer [21], where loyalty and customer satisfaction are positively and significantly related [22].

It is well understood that customer satisfaction and loyalty depend on success factors such as information quality and system quality [4, 23, 24]. These factors are measured using various features. When measuring these features in empirical studies, previous research has often treated customers as a uniform mass, using a monolithic user type and making no distinction between males and females [25]. Consequently, gender-specific differences have not been a vital issue in such studies. From marketing-, e-commerce-, and general information systems research we know, however, that customers usually have different preferences based on, for example, their gender. We know, for example, that gender does matter when it comes to the adoption and use of information technology [26–28].

Although previous research has shown that gender matters, surprisingly little research has explicitly addressed gender differences in on-line shopping preferences [12, 29, 30]. Therefore, we intend to contribute to the e-commerce literature through reporting on what male and female on-line shoppers consider important features to create a positive shopping experience. Our explicit research question is whether males and females have dissimilar perceptions of the importance of these features.

The remainder of this study is organized as follows. In the next section we discuss the theoretical background of this study and develop our research model. The applied research methodology is presented in Sect. 3. In Sect. 4 we present our empirical findings, which we further discuss in Sect. 5. Finally, we conclude our study in Sect. 6 by highlighting our main findings as well as the study's theoretical and practical implications.

2 Frameworks of user satisfaction

In this section we conceptualize user satisfaction as measure for a positive shopping experience from the customer's perspective. We start with reviewing existing literature on user satisfaction and relate it to what satisfies users of on-line shopping platforms. In particular we review the Technology Acceptance Model, Extended Web Assessment Method, Information Systems Success Model, and an Integrated Web Site Success Model. We then proceed with presenting our research model that we use as a starting point in this study.

2.1 Technology acceptance model

TAM, the Technology Acceptance Model is a theoretically and empirically accepted model that explains the acceptance of information systems within the context of a user's eagerness to reuse those systems [31]. TAM is based on TRA, the Theory of Reasoned Action, which is one of the oldest behavioral models still in practice. TRA is the creation of the social psychologists Ajzen and Fishbein [32], and describes the chain: beliefs → attitude → intention → behavior. This means that a person forms an attitude about a certain object based on his/her beliefs, and from this the same person forms an intention to behave in a certain way in respect to that object. As a result, the intention to behave is the only determination of the actual behavior [33].

TAM is important to understand the use, behavior, and acceptance of new information systems. TAM shows that motivational variables serve as links between system features and an individual's behavior in relation to the actual use of the system. Social features were not explicitly taken into account in TAM, but were accounted for in EWAM, the Extended Web Assessment Method, which will be described below.

Originally, TAM omitted gender aspects, but Venkatesh and Morris [28] have researched that aspect as incorporated in TAM. They argue that the gender factor plays a vital part in how users make their decisions in adopting and using new features and technologies. They emphasize that males are motivated by the need for achievement, where accomplishments and advancements are gained via the use of technology. Females, on the other hand, typically exhibit lower computer aptitude and higher levels of computer anxiety, and are therefore often drawn to easier-to-use technology systems [28].

In our study we follow the reasoning of TAM that behavior is linked to how specific features are perceived by the user. We acknowledge that the gender factor plays an important role in the adoption of technology, and understand that it plays a vital role in whether on-line shopping is perceived successful from a user's perspective. Hence, we embrace the rationale of TAM in our study to determine if any gender differences exist in on-line shopping preferences.

2.2 Extended Web assessment method

EWAM, the Extended Web Assessment Method, is a tool for evaluating e-commerce applications. EWAM is the revised and improved version of WAM, the Web Assessment Method, which originally has been developed at the University of St. Gallen in Switzerland [34]. WAM has been created to evaluate the quality and success of pre-existing e-commerce applications. The method focuses on the consumer perspectives of the all-inclusive e-commerce experience.

The underlying idea of WAM is that a customer should not only be sold the core product, but also be offered a wide range of other products in order to maximize customer satisfaction. This additional feature makes a Web site attractive to the customer [19]. Rodger and Harris [29] have confirmed this idea, however, indicating that Web sites usually try to target both genders in a one-size-fits-all approach. Thus the one-size-fits-all approach might not work, because males and females have different preferences for Web design [25]. For example, females tend to be attracted to Web sites that provide good design and therefore include attributes like cleanliness, correctness, objectivity, and subjectivity to their preference list [25]. Females also have a tendency to check things out online, but tend to shop offline [35]. Males, on the other hand, are information hungry and tend to search for products or service information [36], both of which arguably happen before a purchase [29].

WAM has been fundamentally revised by adding the concept of TAM and incorporating individuals' acceptance and usage of Web sites: resulting into EWAM [19]. EWAM's ambition is to study the quality and success of e-commerce applications in terms of the consumers' perspectives. The method provides a basic measuring tool to determine the quality of e-commerce Web sites. The EWAM assessors have to be highly trained to use the assessment tool, and an online tool is used for data collection and evaluation. This tool is designed so that different sector profiles can be compared with different sector averages in order to suggest appropriate improvements [19].

Because EWAM evaluates a Web site strictly from the customer's point of view, the best scoring Web site on an EWAM questionnaire may not, in reality, be the most successful Web site in terms of e-business relevance or profitability. Nevertheless, it is the most successful in the eyes of the consumer [19].

In our study we follow the reasoning of EWAM and focus on the user perception of various features. We also adopt the idea that more than technical issues influence an on-line shopping experience. I.e., social features too play an important role in the user's perception of successful on-line shopping.

2.3 Information systems success model

The IS (Information Systems) Success Model is the result of researching what variables might determine information system success and, therefore, organizational impact [37]. DeLone and McLean [37] suggest that system quality and information quality are the key factors to determining information use and user satisfaction. System quality measures usefulness, usability, responsiveness, reliability, and flexibility, and, if one of these features is not performing to the satisfaction of the user, this can discourage continued usage of the system. Information quality measures relevance, accuracy, and completeness. DeLone and McLean [37] find that no single

factor is better than another in determining organizational impact. Both system quality and information quality together and separately affect both information use and user satisfaction. They point out that the amount of use is affected by user satisfaction. Furthermore, both information use and user satisfaction are direct antecedents to individual impact, which leads to organizational impact [37].

DeLone and McLean [8] note that new and improved business models are constantly emerging; however, the fundamental role of IT (Information Technology) has not changed. So, according to DeLone and McLean [8], the methodology for measuring information system success should not change. They argue that the underlying dimensions are still the same, and therefore, the original IS Success Model is still an applicable success measurement model. Nevertheless, DeLone and McLean [8] have proposed some changes to the original model to improve it. The main improvements include (i) the addition of service quality to reflect the importance of service and support in successful IS systems, and (ii) the collapsing of individual impacts and organizational impacts into a more parsimonious net benefits construct [8]. The added feature of service quality measures quick responsiveness, assurance, empathy, and following-up service. This newer version of the IS success model is called the updated or revised IS Success Model [24].

In our study we take influence from the revised IS Success Model in terms of measuring system quality and information quality as success factors and add the dimension of service quality to reflect the importance of service and support in successful IS systems. However, when it comes to net benefits we resonate with Schubert [19] that, from a customer's point of view, net benefits are not as interesting as, for example, customers satisfaction and the intent to reuse a system, because we are interested in the user perception of how important various features of an on-line shopping platform are ranked.

2.4 An integrated Web site success model

Schaupp et al. [23] have reviewed the literature surrounding the definitions and determination of Web site success, and have proposed an Integrated Web Site Success Model that include a variety of standardized constructs. Success, like in EWAM, is defined from the user's perspective as positively contributing to Web site satisfaction and the intention to reuse the site. The standardized constructs belong to four success factor categories, which are critical to predicting success for the universality of Web site goals: (i) information quality, (ii) system quality, (iii) perceived effectiveness, and (iv) social influence [23].

McKinney et al. [4] find that at least the first two factors of Schaupp et al.'s [23] model, information quality and system quality, were applicable specifically in e-commerce contexts, providing positive correlations with success measures (both user satisfaction and intent to reuse).

Schaupp et al.'s [23] Integrated Web Site Success Model and van der Heijden's [33] revised TAM have several common aspects. Van der Heijden studies perceived attractiveness, usefulness, ease of use, and enjoyment. These fours factors in turn lead to attitude towards use and intention to use, with a final study on actual usage [33]. Van der Heijden's [33] model as well as Schaupp et al.'s [23] model study success

from the customers' perspective. Schaupp at al.'s [23] four factors of information quality, system quality, perceived effectiveness, and social influence are the equivalent to van der Heijden's [33] four factors, though not exactly the same, but the perceived outcome aim to study the same ideas.

One noticeable difference between van der Heijden [33] and Schaupp et al. [23] is that Schaupp et al.'s [23] study does not attempt to determine actual usage. Schaupp et al. [23] stop at the intention to reuse, following the original TAM [23, 33]. Our research model follows the same path, trying to decide which factors determine e-commerce success, where success is perceived as (i) the user is satisfied with the overall experience of the site and (ii) the user intends to reuse the site or gives a positive testimonial about it.

2.5 Our research model

In previous research various factors have been established as critical to successful on-line shopping. The findings and models accounted for above provide a useful starting point for our study, because they show that particular on-line shopping features lead to user satisfaction and loyal customers.

We focus our study on how different features are perceived by customers and we differentiate between genders. The features that we measure are part of three larger constructs (or success factors) that we have identified in our literature review: information quality, system quality, and customer-relations quality. Information quality and system quality are well-established constructs in previous research [4, 8, 19, 23, 24, 37]. Customer-relation quality captures trust, support service, and smooth shopping. This construct reflects insights from previous research on the importance of incorporating social features and features that describe the on-line shopping experience as a whole [8, 10, 23, 24, 33]. The label for this construct varies in previous research. However, there exists an understanding that these features need to be measured. The result of integrating previous findings is shown in our research model (Fig. 1).

Figure 1 shows that this study focuses on success factors. We call these factors *constructs* throughout this paper because they comprise various *features*. These features are used to measure the importance of various aspects. In our study we focus on how important different on-line shopping features are for creating satisfied customers and, hence, a successful on-line shopping experience.

Our overall assumption in this study is that customers will be satisfied if important features are well performed, which will lead to loyal customers expressed in the intent to reuse and word-of-mouth—or in other words: a successful on-line shopping experience. Hence, we adopted a view similar to the different frameworks on user satisfaction accounted for before. We are adopting the subjective notion of customer satisfaction, meaning that successful Web sites provide a pleasant shopping experience for the customer rather than profitability for the vendor [19, 23].

Further, previous research has demonstrated that gender plays an important role when it comes to the adoption of information systems such as e-commerce platforms [12, 25–29]. We have discussed that it is vital to establish user satisfaction and it appears that male and female on-line shoppers have different perception of how this can be accomplished. Therefore, we focus on how the importance of various features

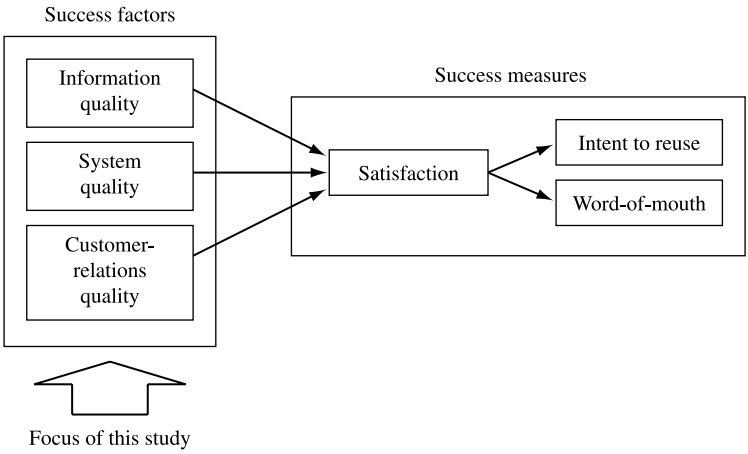

Fig. 1 Our research model

is ranked by males and females with regard to the three main constructs: information quality, systems quality, and customer-relations quality.

Based on the different perceptions by males and females identified in previous research, we expect that we can see significant differences between how the importance of various features is ranked by males and females with regard to the three main constructs. Specifically, we expect to find the following:

Hypothesis 1 *Male and female on-line shoppers will differently rank the importance of the three main constructs.*

Besides researching difference on the construct level we also investigate differences on the feature level. Following the same reasoning that males and females have different perceptions of what is important to them, we expect that we can see significant differences between how the importance of various features is ranked by males and females on the feature level. Therefore, we expect to find the following:

Hypothesis 2 *Male and female on-line shoppers will differently rank the importance of particular features.*

3 Research method

3.1 Questionnaire

The majority of features measured in this study were adopted from prior research on on-line shopping. We let the respondents rank the features through sorting them all at once instead of using a traditional Likert scale to measure the importance of the different features. Each rank was only available to one feature (the rank of 1 represented the most important feature whereas the rank of 16 represented the least important

Table 1 List of features

Construct	Feature	Label	Short Notation
Information Quality (IQ)	Accurate description of products	IQ1	Accurate description
	Correct sizing information	IQ2	Correct sizing information
	Web site suggests similar products	IQ3	Suggest similar
	Visually appealing layout of Web site	IQ4	Web site design
	Pictures give good view of products	IQ5	Good pictures
System Quality (SQ)	1-click ordering (paid and sent if logged in)	SQ1	1-click order
	Save-for-later cart	SQ2	Save-for-later cart
	Web site pages load quickly	SQ3	Quick loading pages
	Efficient navigation through site	SQ4	Efficient navigation
	Ability to compare products to each other	SQ5	Compare similar
Customer-Relations Quality (CQ)	Fair and transparent pricing	CQ1	Fair pricing
	Web site does not share private information	CQ2	Privacy
	Free shipping option to a local store	CQ3	Ship to local store
	Easy tracking and tracing of shipment	CQ4	Easy tracking
	Preprinted return label (postage subtracted from refund)	CQ5	Return label
	Wide range of products	CQ6	Wide variety

feature). This forced the respondents to differentiate between the importance of the various features, resulting in more significant differences because a respondent could not assign a similar score to two different features. To reduce bias in the sequences we took advantage of using an on-line questionnaire in which all features were shown in random order. Each respondent, hence, had a different-sorted list to start with when ranking the feature. No reference was made to which construct a feature belonged. A complete list of features included in the questionnaire is shown in Table 1.

Information quality (IQ) was measured through features adapted from Doll and Torkzadeh [38], McKinney et al. [4], Rai et al. [39], Schaupp et al. [23], and Moss et al. [25]. These features captured accuracy, completeness, and format. Some measures were originally developed for studying information systems in organizations, and, therefore, needed some modification to fit the purpose of this study. Accuracy, hence, dealt with whether information displayed to the on-line shopper was correct or precise. It was measured using (IQ1) Accurate description of products and (IQ2) Correct sizing information. Completeness was used to shed light on the amount of information needed to make an informed purchase decision. It is captured by (IQ3) Web site suggests similar products. Format measures focused on whether product information was presented in a useful format and whether the information was clear to the on-line shopper. Two features were used to capture format as part of information quality; namely (IQ4) Visually appealing layout of Web site and (IQ5) Pictures give good view of products.

System quality (SQ) deals with the ease of use of an on-line shopping platform. Such a platform needs to be user friendly [38]. Features used by Doll and Torkzadeh

[38], McKinney et al. [4], Kassim and Abduallah [20], Rai et al. [39], and Schaupp et al. [23] were adapted for measuring systems quality in this study. These features comprised of customization, responsiveness, and comparison. Customization focused on the ability to provide a personalized shopping experience. (SQ1) 1-click ordering and (SQ2) Save-for-later cart were used to capture customization. Responsiveness, which was used to measure the systems ability to perform according to the on-line shoppers expectations were measured through (SQ3) Web site pages load quickly and (SQ4) Efficient navigation through site. Comparison dealt with the ability to contrast and evaluate the unique features of similar products at the same time. To capture this type of comparison one specific feature was used; namely (SQ5) Ability to compare products to each other.

To engage in a business transaction, on-line shoppers not only need to be satisfied with the merely technological aspects of the business platform. They also need to be satisfied with the service provided in the sense of customer relations [8, 13, 34, 40] or what is important to them personally [27]. Customer-relations quality (CQ) was measured using features capturing trust, support service, and smooth shopping. Trust was measured on two different dimensions; namely (CQ1) Fair and transparent pricing and (CQ2) Does not share private information. Support service was measured by (CQ3) Free shipping option to a local store, (CQ4) Easy tracking and tracing of shipment, and (CQ5) Preprinted return label. Smooth shopping referred to how easy it was to shop products one is interested in to purchase at the same time. It was measured through (CQ6) Wide range of products.

3.2 Data collection

The questionnaire was made available on-line. An initial group of respondents was invited to complete the survey by e-mail. This group consisted of people residing in the US with which two of the authors had either a professional or social relationship. The respondents were asked to complete the questionnaire and to forward the invitation to participate in this research to their own contacts to recruit further respondents. The survey was available for two weeks.

Using this type of nonprobability sampling has the disadvantage that no response rate can be calculated. To overcome this drawback we considered the abandonment rate as a measure for the quality of the collected data. The abandonment rate was 36%, i.e. close to two-third of the respondents filled in the entire questionnaire, while only about one-third dropped out before finishing it. The number of respondents who filled in the entire questionnaire was 176. Almost 97% of these responses ($n = 170$) were valid responses. Validity was determined by (i) filling in the whole questionnaire and (ii) being an active on-line shopper, i.e. having more than one on-line shopping experience per year. The high rate of valid responses made us anticipate that the respondents cautiously filled in the questionnaire, which too vouches for good quality in the collected data.

Another disadvantage of nonprobability sampling is that demographic diversity can be compromised. However, designing an ideal random sample was not possible. Exact demographics of US on-line shoppers would be needed to design such a sample. Reliable statistics, however, were not available. Many statistics focus only on

sales and revenues, not on user demographics (cf., for example, [41]). Hence, we had to make assumptions about on-line shopper demographics. One central assumption was that the distribution of on-line shoppers was close to the gender distribution of US residents.

4 Findings

4.1 Descriptive statistics

Table 2 summarizes the descriptive statistics of the sample. In terms of gender, 50.6% of the sample was male; the female counterpart accounted for 49.4%. All respondents were residents of the US, which population consists of estimated 49.3% male and 50.7% female residents [42]. The sample showed an expected distribution, hence, reducing the shortcoming of nonprobability sampling applied in this study. Most respondents were between 26–45 years of age, namely 75.3%. Of all respondents 94.7% stated that they had either intermediate or advanced computer skills. It shows that the respondents had high computer literacy.

Table 2 Sample characteristics

	Gender			
	Frequency	Percent	Valid percent	Cumulative percent
Male	86	50.6	50.6	50.6
Female	84	49.4	49.4	100.0
Total	170	100.0	100.0	
	Age range			
	Frequency	Percent	Valid percent	Cumulative percent
Below 18 years	1	0.6	0.6	0.6
18-25 years	10	5.9	5.9	6.5
26-35 years	63	37.1	37.1	43.5
36-45 years	65	38.2	38.2	81.8
46-55 years	23	13.5	13.5	95.3
56 years and over	8	4.7	4.7	100.0
Total	170	100.0	100.0	
	Computer skills			
Basic	9	5.3	5.3	5.3
Intermediate	63	37.1	37.1	42.4
Advanced	98	57.6	57.6	100.0
Total	170	100.0	100.0	

Table 3 Means and standard deviations for the importance of constructs by gender

	Gender				t	p
	Male		Female			
	Mean	Std. deviation	Mean	Std. deviation		
Information quality (IQ)	7.686	1.079	7.712	1.221	−0.146	0.884
System quality (SQ)	8.800	1.347	8.633	1.312	0.817	0.415
Customer-relations quality (CQ)	8.928	1.087	9.046	1.225	−0.661	0.510

4.2 Construct level

Mean comparisons on the construct level revealed no significant differences (at $p < 0.05$) between the two genders. Table 3 shows that males and females have similar preferences when ranking the importance of the three constructs, which were calculated as the average result of all features that belong to the same construct.

Comparisons between the constructs themselves show that there are significant differences between them (at $p < 0.001$). Pair-wise comparisons between the constructs show that Information quality (IQ) is significantly more important (at $p < 0.001$) than both Systems quality (SQ) and Customer-relations quality (CQ). It also shows that there are no significant differences (at $p < 0.05$) between System quality (SQ) and Customer-relations quality (CQ). Further, it shows that no significant gender-specific difference exists in the relative ranking of the three constructs. Thus, the results provide no support for Hypothesis 1.

4.3 Feature level

Mean comparisons on the feature level revealed some significant differences (at $p < 0.05$) between the two genders. Table 4 shows how males and females ranked the importance of the sixteen features.

At $p < 0.001$ two highly significant differences exist. The first difference at this level can be observed for Accurate descriptions (IQ1). The negative t-value for this particular feature indicates that it is significantly more important to male on-line shoppers than it is to the female counterpart. The second difference at this level was observed for Return label (CQ5). Female on-line shoppers rank this particular feature significantly higher than males do, which is shown by the positive t-value.

At $p < 0.01$ one significant difference exists between the two genders. Fair pricing (CQ1) shows a negative t-value, meaning that it is significantly more important to males than it is to females.

At $p < 0.05$ four significant differences exist. First, Correct sizing information (IQ5) is significantly differently ranked by males and females. Females consider this feature more important than males. Second, Quick loading pages (SQ3) is significantly differently ranked by males and females. Also this feature is more important to females than males. Third, Easy tracking (CQ4) is significantly differently ranked by males and females. This time the feature is more important to male on-line shoppers than it is to female on-line shoppers. Finally, Wide variety (CQ6) is significantly

Table 4 Means and standard deviations for the importance of features by gender

	Gender				*t*	*p*
	Male		Female			
	Mean	Std. deviation	Mean	Std. deviation		
Accurate description (IQ1)	2.79	1.660	3.98	2.123	−4.062***	0.000
Correct sizing information (IQ2)	8.13	3.032	7.19	2.809	2.090*	0.038
Suggest similar (IQ3)	13.16	2.696	13.80	2.502	−1.591	0.114
Web site design (IQ4)	7.99	3.632	7.40	3.054	1.133	0.259
Good pictures (IQ5)	6.36	2.946	6.19	2.709	0.391	0.696
1-click order (SQ1)	10.29	4.537	9.02	4.592	1.809	0.072
Save-for-later cart (SQ2)	11.48	3.928	11.46	2.885	0.024	0.981
Quick loading pages (SQ3)	3.91	2.843	2.99	2.914	2.081*	0.039
Efficient navigation (SQ4)	7.95	4.787	8.90	5.189	−1.243	0.216
Compare similar (SQ5)	10.37	2.820	10.79	2.816	−0.957	0.340
Fair pricing (CQ1)	6.20	3.684	7.90	3.480	−3.104**	0.002
Privacy (CQ2)	4.83	3.389	4.39	3.433	0.827	0.409
Ship to local store (CQ3)	12.43	3.645	12.24	4.379	0.311	0.756
Easy tracking (CQ4)	7.57	3.349	8.65	2.792	−2.292*	0.023
Return label (CQ5)	11.33	4.318	8.76	5.100	3.540***	0.001
Wide variety (CQ6)	11.22	3.352	12.32	3.140	−2.208*	0.029

Note: *significant at the 0.05, **significant at the 0.01, ***significant at the 0.001 level

differently ranked by males and females. Again, males consider this feature more important than females.

Because some significant differences exist between the two genders, Hypothesis 2 receives support from the data.

4.4 Search for alternative explanations

Although focusing on gender-specific preferences in our study we explored whether the collected data would allow for alternative ways to explain the observed differences. We analyzed the data with regard to the respondents' previous shopping experience—which was captured through the frequency of on-line shopping activities in the past—and the respondents' computer literacy. At $p < 0.05$ no significant explanations could be found, thus none of these comparisons provided additional insights. Therefore, we are convinced that the significant differences we could observe in the data are in fact gender-specific.

5 Discussion

The objective of this study was to find out whether gender-specific on-line shopping preferences exist.

At the construct level all respondents ranked Information quality (IQ) as significantly more important than either System quality (SQ) or Customer-relations quality (CQ). However, no significant difference could be observed between the two genders. That all respondents ranked Information quality (IQ) higher than System quality (SQ) or Customer-relations quality (CQ) indicates that people rely heavily on information provided by an on-line vendor. This includes information about size and overall description. In many ways, the information aspects of the Web site substitute for the important sensory experiences of traditional shopping (i.e., appearance, feel, fit, etc.), which might explain the relatively importance to the customers. This supports previous findings that information is the dominant concern of the user [43].

In contrast, System quality (SQ), a construct primarily associated with ease of use and convenience, was considered relatively less important to most respondents. The greater importance of Information quality (IQ) as compared to System quality (SQ) is supported by McKinney [4] and Pitt et al. [43]. They find that information is the dominant concern of users, while the delivery mechanism is secondary. In addition, Rai et al. [39] show the results of two previous studies [37, 44] in which Information quality (IQ) is more closely correlated with overall user satisfaction than System quality (SQ). Our results support these conclusions, suggesting that Information quality (IQ) is a very important construct that companies should focus on in order for their customers to feel satisfied.

On the feature level some statistically significant gender-specific differences exist. Male on-line shoppers rank Accurate description (IQ1) of products very highly. This supports previous research on males' shopping behavior and that males tend to be information hungry [36] and search for products or service information, both of which arguably happen before a purchase [29].

Fair pricing (CQ1) is also important to males. Males tend to be "hunters" [25]. This explains why they are looking for the best deals. Males are usually motivated by the need of achievement, where accomplishments and advancements such as finding the best deal are gained via the use of technology [28].

Easy tracking (CQ4) and a Wide variety of products (CQ6) are two other features that are important to males. Previous research gives no information about which reasons are behind this. As we did not research the reasons in our study we can only speculate that this too is related to males' appetite for technology and being informed as far as it concerns Easy tracking (CQ4). A Wide variety of products (CQ6) could be related to the ease-of-use [31, 38]. It might be perceived easier to purchase several products at one on-line shopping platform instead of interacting with several Web sites because it minimizes the time spent on different platforms. Offering several products of interest has previously shown important in research [19].

Females on the other side consider Return labels (CQ5) significantly more important than their male counterparts. It implies that if females do not like a product, they return it. One could speculate that this larger value difference is seen because males might return items less frequently than females, perhaps because they shop for different types of products. Or it could be that male do not want to lose face in a similar way they never stop to ask for directions [28].

Correct sizing information (IQ2) and Quick-loading pages (SQ3) are two other features that are significantly more important for female on-line shoppers. Again we

have no support from the literature to explain the reasons. However, with regard to Correct sizing information (IQ2) we believe that one reason is that fashion is more important to females than to males. Connected to this it is more important to females to buy products that fit. Quick-loading pages (SQ3) might indicate that females are more aware of how much time they spend on-line. The reasons for this could be many and we do not want to speculate here.

Being aware of the different perceptions of males' and females' on-line shopping preferences is important for business. Our study was based on the assumption that on-line shoppers will perceive their shopping experience as more successful when the features they value as important are met by the vendor's Web site [19]. This means that the customers are more satisfied, intend to re-use the service, and spread positive word-of-mouth. This enhances customer loyalty, which is considered important to business survival [13, 14].

Although we did not study the net benefits for businesses [8], we believe that a successful Web site from a customer perspective [19] can have a positive impact on a company's benefits.

5.1 Implications for research

This research contributes to the on-line shopping literature on consumer attitudes and intentions from a gender perspective. First, the study makes a theoretical contribution by showing that gender-specific differences exist in on-line shopping. This confirms previous research on the importance on gender in e-commerce [12, 25, 26, 29, 30] and extends our understanding of such difference by providing specific insights in these differences. In particular, this study has shown that males rank Accurate description of products (IQ1), Fair and transparent pricing (CQ1), Easy tracking and tracing of shipments (CQ4), and a Wide variety of products (CQ6) significantly more important than females. Females on the other side consider Preprinted return labels (CQ5), Correct sizing information (IQ2), and Quick-loading pages (SQ3) significantly more important than their male counterparts.

Second, the study shows that gender-specific differences are not always obvious. When comparing the ranking of constructs through mean comparison, no significant differences between males and females could be observed. All differences were within the margin of error. On the other hand, when comparing means for the specific features we could prove that statistically significant gender-specific differences exist. This shows that research needs to go beneath the construct level to explicate such differences. A common problem with many prevailing frameworks (such as [19, 23, 24, 31, 33, 34, 37]) is that they focus on constructs and therefore cannot explicitly consider gender-specific differences.

Hence, the implications for research are twofold. First, the study provides novel insights in consumer behavior with regard to their on-line shopping preferences from a gender perspective. Second, the study demonstrates that significant differences might not show on the construct level but only when features are individually compared which each other.

5.2 Implications for practice

From a practical standpoint, the findings of this study can be helpful in designing attractive on-line shopping platforms. This is particularly important for businesses because they constantly aim at keeping existing and attracting new customers. Hence, being able to accommodate the specific needs of their customers is important. Accommodating these needs leads to loyal, returning customers, which is key for businesses to succeed in competitive environments.

As shown in this study, the needs of customers can be expressed by the importance of various features. Males and females have different perceptions of what is important to be provided by an on-line platform to make a positive shopping experience that leads to a satisfied and loyal customer. To provide for the unique needs of males and females, businesses need to better understand what exactly it is their customers are looking for. They need to understand what their services and/or products are, which features they need to measure in order to find out what is important to their customers, and how to adapt their on-line platforms to be attractive to all of their customers.

Businesses in most cases cannot afford to treat their customers as a uniform group with a one-fits-all design but need to consider the individual needs of their male and female customers. An increased understanding of the customers' on-line shopping preferences therefore can help businesses to market themselves more effectively to males and females. Hence, the implication for practice of this research is to prepare businesses to better address the particular needs of their male and female on-line shoppers through designing attractive on-line shopping platforms.

5.3 Limitations

This study has three main limitations. First, the selection of the studied features can be questioned. We used previous research to guide our selection of the particular features. However, it is possible that other researchers would select different features. This can be seen as a shortcoming in terms of not being able to capture all features that might show gender-specific differences. This, however, was not our intention and would go beyond the scope of our study. We only intended to research whether gender-specific differences exist and our research shows that such differences indeed exist. Whether or not these are all differences was not the aim of our study and remains to be seen.

Second, the ranking approach of this study can be questioned. We mentioned above that it was unclear what the respondents had in mind when ranking the various features, meaning that some of the observed differences could be due to the type of product the respondents usually buy on-line rather than to gender. This limitation will be addressed in more depth in our future research.

Finally, the method by which the sample was selected can prompt discussions in terms of generalizability. Our results might change with the adoption of a different selection method. This, however, is not our main concern. More important is that the sample might be deformed because most respondents had an unusual high computer literacy in comparison to the total population. We believe, however, that people engaging in on-line shopping might have a higher computer literacy. Therefore,

high computer literacy amongst the respondents might not be a shortcoming per se; it rather shows a shortcoming in current research because we do not know enough about the computer literacy of today's on-line shoppers.

5.4 Future work

Additional research is needed to enhance the validity of this research. In particular, we deem the following two approaches as promising. First, future research should focus on researching more gender-specific preferences on the feature level because it can create more valuable insights into which aspects are important to on-line shoppers. Future research should be designed to eliminate some of the shortcomings of this study. It could, for example, let respondents rank Web sites for specific products or services. This would ensure that all respondents are ranking similar products or services, eliminating some of the speculations that had been made in this study. Focusing more on gender-specific preferences in future research can create a better understanding for organizations on what their customers value. Such insights can be used to provide better services to customers in terms of increased user satisfaction.

Second, future research should focus on the aspect of unveiling gender-specific differences on the construct and feature levels. Research should delve more into the problem of how to make gender-specific differences more visible on the construct level. This is deemed important because it creates more awareness of existing gender differences. This awareness should be more explicitly expressed in current research. Findings from researching gender differences on the different levels might contribute to enhancing existing frameworks on how to perceive and measure user satisfaction.

6 Conclusion

This research was anchored in well-established theories on on-line shopping behavior to study whether males and females have dissimilar perceptions of the importance of which features contribute to a positive shopping experience from a user's perspective.

The study shows that male and female on-line shoppers differently rank the importance of particular features. On the feature level, males rank Accurate description of products (IQ1), Fair and transparent pricing (CQ1), Easy tracking and tracing of shipments (CQ4), and a Wide range of products (CQ6) significantly more important than females. Females on the other side consider Preprinted return labels (CQ5), Correct sizing information (IQ2), and Quick-loading pages (SQ3) significantly more important than their male counterparts. Gender-specific differences, however, do not show on the construct level. Differences on the construct level are not significant; all differences are within the margin of error.

In previous e-commerce research the construct level is widely used. This might explain why previous research has not observed much gender differences. We have argued in this research that it is important to study gender-specific differences at the feature level, because insights from the feature level can be used to better understand on-line shoppers' gender-specific preferences. From a business perspective it is important to understand these preferences because Web sites can become more attractive to the users when the different needs are adequately addressed. This will lead to more customers having positive shopping experiences.

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