



David versus Goliath - Service quality factors for niche providers in online retailing



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ABSTRACT

The aim of this study is to identify the service quality factors by which niche providers can differentiate themselves from market leaders in online shopping and successfully operate long term. After theoretical considerations, a research model was developed and empirically tested. The results show that there are differences in the preferences of niche providers and market leaders, such as importance of website features and the breadth and depth of a balanced product portfolio of customers. In addition, the study shows how individual factors can be analyzed in an online shop and which alternative courses of action can be derived.

1. Introduction

E-commerce has experienced enormous growth in recent years. In 2017, global retail e-commerce sales reached \$2.304 trillion, an increase of 24.8% over the previous year. E-commerce's share of global retail sales was 10.2% in 2017, up from 8.6% in 2016 (eMarketer, 2018). One retailer in particular stands for the epitome of e-commerce: Amazon, which is now the third most valuable company (Schept, 2018), and its founder Jeff Bezos is the richest man in the world (Forbes, 2018). In 2017, Amazon's worldwide turnover was around \$178 billion (Amazon, 2018). The company achieved a turnover share of 13% in the United States (Statista, 2019a, 2019b) and 46% in Germany (IFH Cologne, 2018). Currently, it is hard to identify a product that cannot be purchased via Amazon or Amazon Marketplace, which leads to the guiding research question of this article: How can niche providers differentiate themselves from market leaders and achieve success, and what are the factors that influence customer satisfaction and loyalty of online customers? In this context, quantifiable differences between niche providers and market leaders need to be identified. Following the old testamentary story, the metaphorical question can therefore be posed: How can David stand up against Goliath?

The literature contains a large number of studies dealing with purchasing behavior, customer satisfaction, and customer loyalty in e-commerce. Customer loyalty, in particular, is essential for the success of a company and plays a major role in e-commerce sales and satisfaction. However, as individualized contact with customers is challenging on many e-commerce platforms, other success factors are moving further into the foreground, including use of the technology acceptance model

and the Technology Acceptance Model, utilitarian, hedonistic, and design characteristics of the website.

Service quality in particular has repeatedly proven to be a key indicator of customer satisfaction, which in turn has a positive impact on customer loyalty. The SERVQUAL model (Parasuraman et al., 1985) is one of the best-known models for measuring service quality. It can be used flexibly and serves as a fundamental framework for contemporary research. For use in e-commerce, however, adjustments have to be made, which have produced new models for service quality in online trading, such as eTailQ and E-S-Qual.

To highlight differences in the importance of service quality factors between market leaders and niche providers, two exemplary companies have been considered: online behemoth Amazon (Goliath) serves as the market leader, and Elbenwald (David) is the niche provider. Elbenwald was founded in 2000 in Germany and was originally a student spin-off. The company specializes in fan articles for fantasy productions and sells related products, such as magic wands from Harry Potter and rings from The Lord of the Rings. In 2017, the company generated approximately \$41.1 million and employed 202 people (Elbenwald GmbH, 2019).

In the first part of the paper a literature review is given, which considers different success factors and barriers of online retailing followed by an overview of different service quality models in this field. Next, the article highlights numerous publications on service quality in e-commerce and identify which other factors have a significant influence on service quality, customer satisfaction, and loyalty. Based on these findings, a research model was derived for empirical investigation of the research question. A survey was completed by 469 participants, and their answers were analyzed. A structural equation model was

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established, and differences between the two companies are shown in a group comparison. Based on the results, recommendations are given for practice and future research.

2. Literature review

2.1. General success factors and barriers of online retailing

Success factors and barriers of online retailing are presented in this section. Cross-disciplinary research publications dealing with the topic of online shopping are numerous, many of which identify and analyze requirements, drivers, and barriers. Usefulness, referred to as perceived usefulness by the Technology Acceptance Model (Davis, 1985, 1993), is one of the major drivers in online shopping (Perea y Monsués et al., 2004) and is found in numerous studies and literature reviews (Agrebi and Jallais, 2015; Chang et al., 2005; Gefen et al., 2003; Zhou et al., 2007).

Also considered in many studies is the construct enjoyment, which describes the extent to which the use of the new technology is perceived as an independent enrichment (Davis, 1985; Davis et al., 1992; Davis, 1993; Perea y Monsués et al., 2004). Enjoyment leads to a positive attitude toward online shopping and to the adaptation of the Internet as a shopping medium (Childers et al., 2001). When online customers are exposed to pleasurable stimulation, they browse more, explore other products and categories, and make more impulse purchases (Perea y Monsués et al., 2004).

With regard to the quality and acceptance of a website, the quality of the information is seen as the main factor for the perceived usefulness and the quality of the system influences the perceived ease of use and perceived enjoyment (Al-Debei, 2014). Although website design and service quality influence customer satisfaction of online retailers (Lee and Lin, 2005), they are often taken for granted by customers (Hernández et al., 2010). Online retailers should compare their websites with customer preferences (Rahman et al., 2018) and highlight design aspects, such as user interfaces, navigation options, search functions and online support. Other desirable features of online shopping are ease of navigation, reliability, responsiveness, and effectiveness (Aladwani, 2006; Al-Debei, 2014). Search functions enable simplicity, speed and effectiveness. Although external features of the user interface can influence customer behavior in the initial phase, perceived benefit has the strongest direct influence on behavior. Positive motivations, such as convenience, a wide range of products, or 24-h service, influence customer intentions to buy on the Internet (Hernández et al., 2010; Li and Gery, 2000). Fast delivery times and scope of delivery options are necessary to convince customers of a company's speed (Al-Debei et al., 2015).

Customers are also influenced by purchasing motives based on utilitarian and hedonistic values. Utilitarian motives refer to efficient handling of the purchase, and hedonistic motives express the desire for fun while shopping. Both motives have a strong influence on customer satisfaction (Bilgihan, 2016; Childers et al., 2001; Hirschman and Holbrook, 1982; Wolfinbarger and Gilly, 2001). Utilitarian values are correlated more strongly with a preference for online shopping than hedonistic values (Overby and Lee, 2006; Rahman et al., 2018; Sarkar, 2011). However, online shoppers who are motivated by useful, such as convenience, availability of a variety of products, price comparison, and discounts can also seek hedonistic benefits, such as enjoyment and pleasure (Childers et al., 2001). Target-oriented buyers achieve freedom and control in web-based environments because they feel minimal buying pressure. For them, online shopping convenience, information, choice, and the absence of a social environment are particularly important (Wolfinbarger and Gilly, 2001). Hedonistic orientations primarily increase intentions to revisit and buy, frequency of shopping, number of items purchased, and the purchase value (Scarpi, 2012). Such values tend to create shopping experiences consisting of surprise, uniqueness, excitement, online deals, and interest-related product

categories (Wolfinbarger and Gilly, 2001).

Situational factors that influence relationships between customer attitudes and buying intentions in online retail include time pressure, lack of mobility, geographical distance, need for special goods, and attractiveness of alternatives. For most customers, convenience and 24-h accessibility are important attributes of online shopping, as they save time and effort (Childers et al., 2001; Perea y Monsués et al., 2004; Rahman et al., 2018; Sarkar, 2011). The attractiveness of alternatives can be challenging for online retailers. For example, a stationary shop in the city may be preferred to an online retailer with the same products, as the invested human capital is greater than, for example, a large price saving (Avery, 1996; Perea y Monsués et al., 2004; Wolfinbarger and Gilly, 2001).

The intention to shop online is also influenced by previous experience. Positive and satisfactory experiences lead to a reduction in the perceived risk of future online purchases and vice versa (Shim et al., 2001). In connection with their experiences, customers evaluate online shopping in terms of product perception and information, payment methods, delivery terms, services offered, risk, privacy, security, personalization, visual attractiveness, navigation, and entertainment (Burke, 2002; Mathwick et al., 2001; Parasuraman and Zinkhan, 2002). A high level of security and privacy in online shopping has a positive impact on customer trust, as the risk of information sharing is lower. Trust comes from customers' confidence that the retailer will not exploit their vulnerabilities. A customer signals trust in the online retailer by disclosing personal data via the website to receive personalized communication, including special offers and relevant product information (Reichheld et al., 2000). Factors such as customer ratings, information security and privacy are seen as technical aspects that affect customer confidence in online retailers (Rahman et al., 2018; Safa and Ismail, 2013). In general, trust is positively linked to customer attitudes and buying intentions. Violations of trust, for example through misuse of personal data, have a negative impact on attitudes toward online shopping and lead to hesitant customer behaviors in the future. Accordingly, trust has a strong influence on the use of online shopping (Al-Debei et al., 2015; Corbitt et al., 2003; Gefen et al., 2003; Lee and Lin, 2005; Lee and Turban, 2001; Perea y Monsués et al., 2004).

Depending on the product or service purchased online, the customer's needs to feel, touch, smell, or try the products are not met. This lack of physicality often influences the suitability of online shopping, so that some product categories seem more suitable or unsuitable (Dabholkar and Bagozzi, 2002; Perea y Monsués et al., 2004). Technological improvements have increased the popularity of many products (Young Kim and Kim, 2004). The use of image interactivity technology can help increase the value of product information, involve customers more intensively in active shopping experiences, increase the number of visitors to the website, and, ultimately, help businesses gain a competitive advantage (Cano et al., 2017). Additional functions, such as curated shopping or style consultation, lead to continuous improvement in the possibilities of shopping online. Barriers to online shopping include high involvement products, or products that are associated with high costs or have a long tradition. In these cases, older people in particular have reservations about online shopping (Laukkanen et al., 2008; Lian and Yen, 2014; Molesworth and Suortti, 2002; Pires et al., 2004).

Despite major changes brought about by the Internet, traditional rules of retail still apply and, in some cases, are even more relevant. This means that the focus should be on customer loyalty, building trust, and aligning the company with customer needs (Reichheld et al., 2000). Incentive programs such as personalized support, point, reward, and gift programs and discounts and online clubs can significantly increase customer loyalty, satisfaction, and retention (Breitenbach and van Doren, 1998; Young Kim and Kim, 2004). Overall, current research focuses on numerous drivers of online shopping, primarily perceived usefulness, enjoyment, information quality, website design, comfort, utilitarian and hedonistic values, situational factors, and high degrees

of privacy and security. Only a few studies have investigated the barriers of online shopping. In particular, they mention risk, attractiveness of alternatives, high commitment, high-quality products, image, and tradition barriers.

2.2. The importance of service quality in online retailing

The successful combination of customer satisfaction and service quality is well known, and one of the most widely used approaches is the SERVQUAL method (Parasuraman et al., 1985). The relevance of the SERVQUAL method can be seen in its application in a large number of areas, including health care (Carman, 1990; Kilbourne et al., 2004), gastronomy (Lee and Ulgado, 1997), and retail (Parasuraman et al., 1994). The SERVQUAL method has been widely used in current research (Ali and Raza, 2017; Kansra and Jha, 2016; Teshnizi et al., 2018), especially in online shops, and numerous authors have modified the classic SERVQUAL model. Five of the most popular adapted models are presented in the following section.

Zeithaml et al. (2002) first used the eSERVQUAL model to investigate the basics of what needs to be considered when measuring the quality of electronic services. They showed that quality of service delivered through websites is an important strategy for the success of companies. The authors even considered it more important for success than low prices or a website's Internet presence. The dimensions for measuring service quality within the eSERVQUAL model are divided into two scales Core Service Scale and Recovery Service Scale. The Core Service Scale takes into account the perception of service quality during normal use of the website. Optimally, user problems do not occur, and customer service contact is not necessary. The dimension of the Recovery Service Scale only becomes relevant if the customer encounters problems while navigating the website that require assistance (Zeithaml et al., 2002). One criticism of this work is that the authors do not provide concrete evidence to support their claims. Therefore, this model is difficult to prove empirically (Bauer et al., 2004).

Barnes and Vidgen (2002) recognized the importance of an easy-to-use website and developed WebQual. For them, a customer-friendly website differentiates it from market competition. Therefore, to build competitive advantages, it is important for companies to design websites that are intuitive and easy to use. The authors iteratively adapted WebQual several times to WebQual 4.0, which includes the five factors of user friendliness, design, information, trust, and empathy.

Wolfenbarger and Gilly (2003) believed that a completely new framework needed to be created to measure the service quality of Internet transactions, and they developed the eTailQ. This model takes into account the entire process of a transaction, from searching for information, navigating the retailer's website, and interacting with customer service, to product delivery and customer benefits. eTailQ consists of four dimensions: fulfillment/reliability, website design, privacy/security, and customer service.

Based on the gap model, Parasuraman et al. (2005) created the E-S-Qual and E-RecS-Qual scales for measuring the quality of electronic services of online shops. Similar to the SERVQUAL method, the E-S-Qual scale includes 22 items categorized into four dimensions: efficiency, fulfillment, system availability, and privacy. The E-RecS-Qual scale, which is used to measure experiences of users who are new to online shopping, consists of three dimensions: responsiveness, compensation, and contact.

Finally, the eTransQual model (Bauer et al., 2006) considers the hedonic aspects in connection with flow theory, whereby the complete transaction process is illustrated. To identify all dimensions of electronic services, conditions before and after actual transactions must likewise be regarded as factors. To develop a method for measuring the electronic service quality on the basis of the SERVQUAL method, the authors included hedonic aspects, which can be explained by emotions, and purpose-oriented aspects, such as ease of use and practicality. Their model contains purpose-oriented elements from the eTailQ and E-S-

Qual models. Bauer et al. (2006) added hedonistic elements around flow theory to develop a balanced model. They also noted that customer service behavior is only important when customers have problems. Nonetheless, as customers consider service quality in advance of any problems, this dimension should not be ignored when considering service quality.

Building on these methods, a large number of papers have been developed and published in recent years. To obtain an overview and examine the effects of the SERVQUAL model on quality measurement in online trading, a literature analysis was carried out, which included identifying influencing factors that were taken into account. Between 2001 and 2018, a total of 43 empirical papers were identified that used SERVQUAL or modifications of SERVQUAL to measure service quality in online trading. Appendix A.1 shows which relationships between dependent variables (DV) and independent variables (IV) were measured by the different authors and whether they were significant (*) or not (n.s.). Some variables have been grouped together for clarity: behavioral intention (attitude, intention to recommend, intention to buy, intention to buy, intention to buy back, intention to switch, use of e-commerce website, use of online channel), satisfaction (consumer satisfaction, customer satisfaction, system satisfaction, e-content, company satisfaction, customer satisfaction, online satisfaction), quality (E)Service quality, total service quality, e-learning quality, result quality, process quality, information quality, IT-based service quality, Banking Service Product Quality), tangible assets (aesthetic design, usability, functional completeness, interface and interaction, web appearance), responsiveness (efficiency, performance, processing speed, recovery, support) and security (trust, security).

The two most-considered dependent variables in the models were behavioral intention and loyalty, whereby behavioral intention can also be seen as an aspect of loyalty. In most cases, satisfaction and quality were regarded as influence variables. A total of 20 studies measured a significant influence of satisfaction, and 8 studies demonstrated a significant influence of quality on behavioral intention and loyalty. The influence of quality on satisfaction was also examined. Here, 19 studies found significant relationships. The variable quality was also frequently considered as a dependent variable. The classical factors of tangibles and responsiveness adapted to the online context were often identified as significant influencing factors for quality. Assurance, empathy, reliability, and information quality often showed significant influence.

2.3. Derivation and operationalization of the research model

A critical point is that many researchers have focused on defining quality of service based on the characteristics of a website and user purchase experiences. However, a product portfolio perceived as too small, scarce product information, poor quality of goods, and delivery or return problems also negatively affect customer satisfaction and perceived service quality, as they must not only be fulfilled in principle, but also with regard to customer expectations.

For this reason, further factors of service quality are included in the analysis. In addition to website design, satisfaction with diversity, topicality, and breadth of the product portfolio were surveyed. Aspects of delivery, security, and support were also included in the model. Of note, during purchase it is important that the customer can move around the website independently without external help, interact with the website, and complete the purchase process.

From these considerations and the previous literature study, the following model (Fig. 1) and its relationships between the individual factors are derived. The goal of the company should be to achieve the strongest possible customer loyalty. As the literature shows, this is influenced by satisfaction and various quality factors. In the following model the quality factors are considered individually. This is necessary, as in the following investigation the differences between David and Goliath are to be uncovered and can probably be found in the significance of the individual factors.

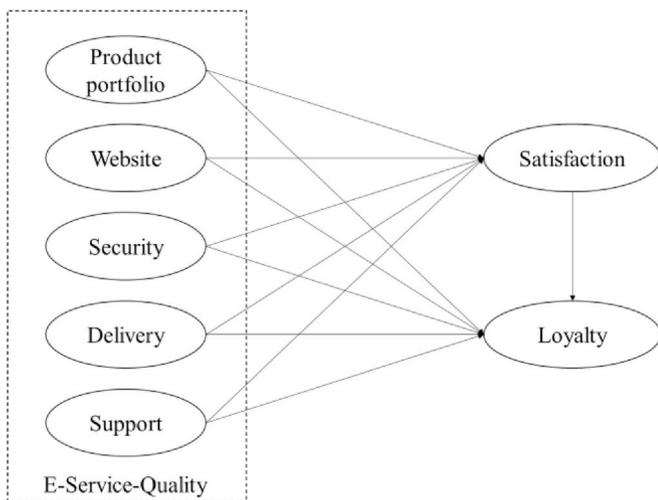


Fig. 1. Theoretical framework for measuring service quality, satisfaction, and loyalty in online retail.

For the purpose of operationalization, the elements with which the variables can be measured are selected. As the variables are latent in the investigated research model, they must be operationalized. The measurement error can be minimized by measuring single variables with several elements. For this reason, the latent variables were measured using multi-item scales.

Table 1 shows the final constructs, their elements, and the source of the elements. The items have been adapted to the research context. Some items were deleted due to insufficient suitability for the constructs. For example, the elements “... the speed with which the online shop is set up” or “... the waiting times for the transfer” have been

Table 1
Overview of the constructs and items of the final research model.

| Code | Item | Source |
|---|---|---|
| Website (WS): How satisfied are you with | | |
| B102_02 | ... the navigation within the online shop? | Bauer et al. (2004); Collier and Bienstock (2006); Li et al. (2002) |
| B102_05 | ... the design of the online shop? | |
| B102_07 | ... the clarity of the online shop? | |
| B102_08 | ... the user-friendliness of the online shop? | |
| Security (SE): How satisfied are you with | | |
| B103_02 | ... the security precautions to ensure secure payments? | Bauer et al. (2004); Boshoff (2007); Wolfenbarger and Gilly (2003) |
| B103_03 | ... the contents of the data protection declaration? | |
| B103_04 | ... the guarantees offered? | |
| B103_05 | ... compliance with data protection rules? | |
| Delivery (DE): How satisfied are you with | | |
| B104_01 | ... the variety of delivery options? | Boshoff (2007); Collier and Bienstock (2006); Wolfenbarger and Gilly (2003) |
| B104_02 | ... the delivery status notifications? | |
| B104_03 | ... punctual delivery at the specified time? | |
| B104_04 | ... the delivery time itself? | |
| Product portfolio (PP): How satisfied are you with | | |
| B105_01 | ... the diversity of the product selection? | Bauer et al. (2004); Li et al. (2002) Wolfenbarger and Gilly (2003) |
| B105_02 | ... the actuality of the product information? | |
| B105_05 | ... the range of products compared to other shops? | |
| Support (SU): How satisfied are you with | | |
| B106_02 | ... the availability of support in case of problems? | Collier and Bienstock (2006) |
| B106_03 | ... the speed of support in case of problems? | |
| B106_04 | ... the friendliness of the support in case of problems? | |
| B106_05 | ... the result of the problem support? | |
| Satisfaction (SA) | | |
| D101_01 | All in all I am satisfied with the online shop. | Collier and Bienstock (2006); Calvo-Porrall and Lévy-Mangin (2015) |
| D101_02 | So far my expectations have been fulfilled by the online shop. | |
| D101_03 | In general, I am satisfied with the quality of the online shop's service. | |
| Loyalty (LO) | | |
| D101_04 | I will recommend the online shop to my friends. | Bauer et al. (2004); Collier and Bienstock (2006) |
| D101_05 | I intend to visit the online shop in the future. | |
| D101_06 | I intend to shop at the online store in the future. | |
| D101_07 | I will also buy other products from the online shop in the future. | |

removed from the website factor, as they are no longer up-to-date due to large bandwidths.

In addition, the item batteries were integrated into the classic SERVQUAL methodology, for example, “Online shops should have a large product selection” and “Amazon offers a large selection of products.” In this way, the quality of the measurement model was checked and expectations and actual quality perceived were compared. In addition, the following demographic variables were collected in the questionnaire: gender, age, educational level, occupational situation, and current net income.

The items of the latent variables were queried using 7-point Likert scales containing the extreme points *not applicable at all* (1) and *fully applicable* (7). This characteristic makes it common to assume a quasi-metric distribution on the Likert scale (Dowling and Midgley, 1991; Jamieson, 2004), which allows a wider range of statistical methods for evaluation.

3. Data analysis

The survey was conducted in Germany during summer 2018 to investigate whether users of niche online shops have different priorities than users of market leaders. Users of the online shops Amazon (Goliath) and Elbenwald (David) were asked about their satisfaction with the use of the online shops. An online survey was conducted, which received 5174 clicks. A total of 102 people answered questions about Amazon and 366 about Elbenwald, which corresponds to an average of 9.05%. The average age of participants was 27, and the majority of the interviewees were employees or workers. In the case of Amazon, 60% of the interviewees were female, and in the case of Elbenwald, 21% were female. The average net income was between 1500 and 2000 Euros per month.

The users of the niche provider were also asked why they chose this online shop instead of buying from a market leader like Amazon. The

Table 2

Results of the confirmatory factor analysis and reliability analysis (Note: α = Cronbach's alpha; AVE = average variance extracted; CR = composite reliability; IR = item reliability).

| | | WS | SE | DE | PP | SU | SA | LO | IR | CR | AVE |
|------------------|-----------------|-----------------------|-------|-------|-------|-------|-------|--------------|-------|-------|-------|
| Cronbach's Alpha | | 0.892 | 0.916 | 0.872 | 0.781 | 0.971 | 0.888 | 0.931 | | | |
| Item | Factor loadings | | | | | | | | | | |
| WS | B102_02 | 0.778 | | | | | | | 0.605 | 0.894 | 0.679 |
| | B102_05 | 0.805 | | | | | | | 0.648 | | |
| | B102_07 | 0.841 | | | | | | | 0.707 | | |
| | B102_08 | 0.870 | | | | | | | 0.757 | | |
| SE | B103_02 | | 0.858 | | | | | | 0.736 | 0.918 | 0.736 |
| | B103_03 | | 0.891 | | | | | | 0.794 | | |
| | B103_04 | | 0.816 | | | | | | 0.666 | | |
| | B103_05 | | 0.866 | | | | | | 0.750 | | |
| DE | B104_01 | | | 0.725 | | | | | 0.526 | 0.876 | 0.639 |
| | B104_02 | | | 0.815 | | | | | 0.664 | | |
| | B104_03 | | | 0.845 | | | | | 0.714 | | |
| | B104_04 | | | 0.807 | | | | | 0.651 | | |
| PP | B105_01 | | | | 0.756 | | | | 0.572 | 0.781 | 0.543 |
| | B105_02 | | | | 0.756 | | | | 0.572 | | |
| | B105_05 | | | | 0.698 | | | | 0.487 | | |
| SU | B106_02 | | | | | 0.940 | | | 0.884 | 0.971 | 0.895 |
| | B106_03 | | | | | 0.945 | | | 0.893 | | |
| | B106_04 | | | | | 0.955 | | | 0.912 | | |
| | B106_05 | | | | | 0.944 | | | 0.891 | | |
| SA | D101_01 | | | | | | 0.849 | | 0.721 | 0.889 | 0.727 |
| | D101_02 | | | | | | 0.861 | | 0.741 | | |
| | D101_03 | | | | | | 0.847 | | 0.717 | | |
| LO | D101_04 | | | | | | | 0.851 | 0.724 | 0.938 | 0.792 |
| | D101_05 | | | | | | | 0.895 | 0.801 | | |
| | D101_06 | | | | | | | 0.939 | 0.882 | | |
| | D101_07 | | | | | | | 0.872 | 0.760 | | |
| Fit indices: | | χ^2 /d.f.: 2.394 | | | | | | CFI: 0.94 | | | |
| | | GFI: 0.9 | | | | | | TLI: 0.958 | | | |
| | | AGFI: 0.873 | | | | | | RMSRA: 0.055 | | | |

questions were asked on a Likert scale from 1 (*not applicable at all*) to 7 (*fully applicable*). The most appreciated features were better customer service (mean: 6.51), the payment process (mean: 6.37), delivery options (mean: 6.34), more pleasant use of the website (mean: 6.12), and a larger product selection (mean: 6.10). Less decisive were lower prices (mean: 3.80).

3.1. Evaluation of the research model

Before the model was evaluated, it was tested for reliability and validity. An explorative data analysis using explorative factor analysis with varimax rotation (using IBM SPSS Statistics 25) was carried out for this purpose. Seven factors were highlighted. Furthermore, the factors were tested for reliability with the help of Cronbach's alpha. Before observing moderators, the underlying model of direct hypothesized effects should first be analyzed to avoid confusion of causes of effects. To systematically check the quality of the model, a confirmatory factor analysis (using IBM SPSS Amos 25) was made. The results are shown in Table 2. Moreover, we used the Goodness of Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI), the Comparative Fit Index (CFI), the Tucker Lewi Index (TLI), and the Root Mean Square Error of Approximation (RMSRA). The goodness of fit indices have to be higher than 0.8 (Baumgartner and Homburg, 1996). The CFI should take reasonable values of more than 0.9 (Bentler, 1990), the TLI values of more than 0.95. The values of RMSEA have to be smaller than 0.06 (Hu and Bentler, 1999). All these conditions are met by the model.

3.2. Interpretation of results and discussion

After the quality criteria were fulfilled, it was possible to examine the results of the model. Fig. 2 shows the results of the entire sample. R² represents a measure of the determination of endogenous variables and

represents the level of declared variance of each endogenous latent variable (Hair et al., 2012). An R² of 0.67 is considered substantial, a value of 0.33 is considered moderate, and a value of 0.19 is considered weak (Chin, 1998). Satisfaction can be classified as moderate and loyalty as substantial. With an R² of more than 0.7, loyalty is essentially determined by the used constructs.

The estimates for path coefficients and their significance are also shown in Fig. 2. Here, the recommendation of Chin (1998) is followed, wherein only standardized regression weights higher than 0.2 should be considered meaningful. In particular, customer satisfaction has a high effect on loyalty. Similar results can be seen in the studies of Amin (2016), Bulut (2015), Harris and Goode (2004), and Kao and Lin (2016). Security had a significant negative influence on loyalty, and delivery influenced loyalty significantly, but both influences were not meaningful. The results of the security factor contradict the results of Yoo and Donthu (2001). Other authors have not yet examined the relationship. The relationship between performance and loyalty was not measured in any of the papers analyzed. The other constructs have no significant influence on loyalty. Collier and Bienstock (2006) also found no significant influence of support on loyalty. In our model, satisfaction was significantly influenced by website, product portfolio, and delivery; the latter two showed a significant influence on a level of 0.001. Jun et al. (2004) and Yang et al. (2004) confirm these. Zhou et al. (2018) also found a significant influence of support on satisfaction. The present study could not confirm this. This could be due to the fact that the respondents are generally very satisfied with the offers of the two online shops and rarely use the support. Therefore, support is not considered as important and does not have a significant influence on customer satisfaction.

To answer the research question, it was necessary to conduct a multigroup comparison to determine whether there are significant differences in the factors influencing the satisfaction and loyalty of the

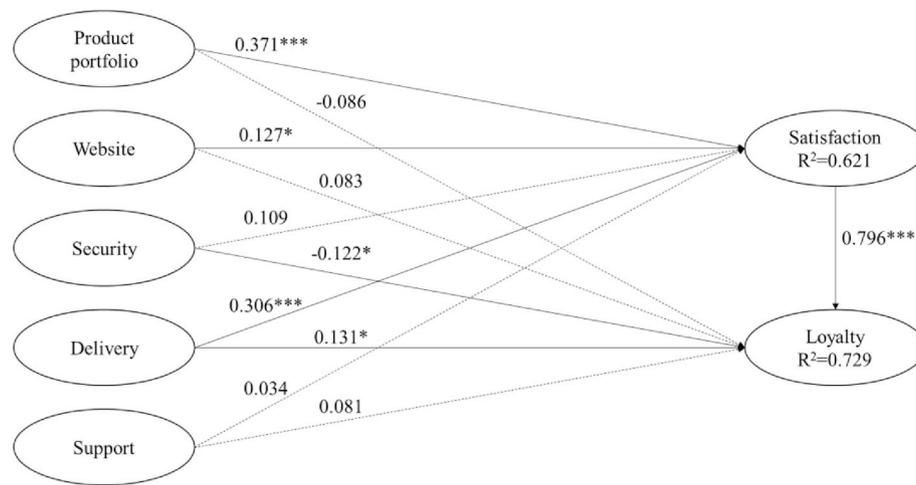


Fig. 2. Overall representation of the structural model and hypothesis test (Note: t-test with statistical significance at a level of *: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$).

customers of the market leader and the niche provider. To investigate differences between the groups, the path coefficients of the groups are compared with each other and analyzed for significant differences using t-test. To do this, the t-values are calculated using the following formula (Keil et al., 2000):

$$\frac{\text{path coefficient}_1 - \text{path coefficient}_2}{\sqrt{\frac{(n_1 - 1)^2}{(n_1 + n_2 - 2)} * SE_1^2 + \frac{(n_2 - 1)^2}{(n_1 + n_2 - 2)} * SE_2^2} * \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} \quad (1)$$

In the formula, n_1 and n_2 represent the sample sizes of the groups Amazon and Elbenwald. SE_i denotes the respective standard error of the path coefficients. The results are presented in Table 3.

It is obvious that the website has a significantly higher influence on customer satisfaction at Amazon (Goliath) than at Elbenwald (David). The clear structure and intuitive navigation on the website contributes significantly to customer satisfaction at Amazon. The product portfolio has a much higher influence on customer satisfaction for customers of the niche provider. Elbenwald (David) should therefore have a deep rather than a broad product portfolio in his niche in order to satisfy the customer. It is well known that almost everything can be bought from the market leader Amazon, so that the variety of the product range is a matter of course here. In both shops, delivery aspects have a major

Table 3

Differences in the factors influencing satisfaction and loyalty between the retailers test (Note: t-test with statistical significance at a level of *: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$; S.E.: standard error).

| Construct relationship | Amazon (Goliath) | | Elbenwald (David) | | t-value |
|------------------------|------------------------|-------|------------------------|-------|----------|
| | Standardized estimates | S.E. | Standardized estimates | S.E. | |
| WS→SA | 0.335 | 0.088 | -0.038 | 0.054 | 3.337*** |
| SE→SA | 0.002 | 0.068 | 0.020 | 0.057 | -0.159 |
| DE→SA | 0.330 | 0.120 | 0.411 | 0.056 | -0.659 |
| PP→SA | 0.193 | 0.123 | 0.490 | 0.053 | -2.496* |
| SU→SA | 0.038 | 0.055 | 0.039 | 0.035 | -0.014 |
| WS→LO | 0.255 | 0.087 | 0.103 | 0.048 | 1.500 |
| SE→LO | -0.165 | 0.057 | 0.002 | 0.050 | -1.689 |
| DE→LO | 0.295 | 0.110 | -0.017 | 0.055 | 2.628** |
| PP→LO | -0.069 | 0.102 | -0.190 | 0.058 | 0.994 |
| SU→LO | 0.078 | 0.045 | 0.069 | 0.031 | 0.143 |
| SA→LO | 0.486 | 0.110 | 0.919 | 0.093 | -2.347* |

influence on customer satisfaction. Thus, it can be concluded that delivery aspects such as different delivery options, status messages on delivery or appropriate delivery times are essential for online shops and should also be considered by other online shops.

In the case of the market leader Amazon, the delivery aspects also had a very strong direct influence on loyalty. The Prime offer enables Amazon customers to receive their goods free of charge within a very short time, in large metropolitan regions even on the same day. The results of the study show that this offer makes a significant contribution to customer loyalty. However, this is an aspect that can currently only be implemented by large retailers, as own distribution centers and many employees are necessary to guarantee this short-term orientation. This situation could change if a delivery with drones becomes acceptable. As numerous studies have shown, customer satisfaction has a great influence on customer loyalty. However, the influence was significantly higher for the niche supplier's customers than for the market leader's customers. This means that satisfied customers of the niche supplier are more loyal to the shop than satisfied customers of the market leader. It can be assumed that customer awareness of the niche enables a higher identification and sympathy with the supplier.

The idea behind SERVQUAL is to compare customers' expectations with their experiences and thus uncover deficits. Table 4 shows the mean values of the two companies Amazon and Elbenwald as well as the results of the mean value comparison. The questions were polled using a 7-point Likert scale. Thus, it can be seen that the customers of both shops have very high expectations regarding the different factors, but that these are also almost fulfilled by both shops.

With regard to expectations, there are only significant differences at the security factor. From this it can be concluded that the expectations of online shops are basically the same. However, the analysis of the structure model shows that the importance of the various factors is perceived differently. Overall, it can be seen that the niche provider Elbenwald performs significantly better than the market leader Amazon in almost all performance values. Particularly with regard to loyalty, Elbenwald achieves an extraordinary result, which suggests that the shop will prevail on the market in the long term.

To visualize where improvements are needed for an online shop, the difference between expectations and performance should be considered and analyzed with regard to importance for the customer. This is shown in Fig. 3 for the retailers Amazon and Elbenwald. In principle, it is desirable that the difference between performance and expectation is

Table 4
SERVQUAL comparison between Amazon and Elbenwald (Note: t-test with statistical significance at a level of *: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$).

| Factor | Mean of ratings | | t-value |
|----------------------|------------------|-------------------|------------|
| | Amazon (Goliath) | Elbenwald (David) | |
| Website Expectation | 6.37 | 6.44 | -0.683 |
| Website Performance | 5.59 | 6.45 | -8.950*** |
| Security Expectation | 6.37 | 6.58 | -2.482* |
| Security Performance | 5.50 | 6.51 | -10.857*** |
| Delivery Expectation | 6.57 | 6.54 | 0.381 |
| Delivery Performance | 6.23 | 6.53 | -3.705*** |
| Product portfolio | 6.63 | 6.62 | 0.087 |
| Expectation | | | |
| Product portfolio | 6.24 | 6.39 | -1.788 |
| Performance | | | |
| Support Expectation | 6.52 | 6.67 | -0.661 |
| Support Performance | 5.73 | 6.62 | -8.119*** |
| Satisfaction | 6.28 | 6.67 | -5.789*** |
| Loyalty | 6.53 | 6.80 | -4.258*** |

greater than or equal to zero. Values that are greater than zero do not need to be further improved at present. Here the level of operating costs should be checked and determined whether they can be reduced without the difference between performance and expectation dropping below zero. For difference values below zero, the factors with an importance above 0.2 should be improved first. Values with a lower importance can be neglected at the moment. Fig. 3 has a similar structure to the Importance Performance Analysis of Martilla and James (1977). Here, however, respondents did not have to decide for themselves how important specific factors are to them. The importance of these factors is evident from the structural equation model. The advantage of this is that respondents are relieved of the workload. The problem that test persons often say that all factors are important for them is also avoided.

The major advantage of the illustration in Fig. 3 is that the reader immediately recognizes at which points there are still needs for action and which points are already well fulfilled.

As can be seen in Fig. 3, in many cases Elbenwald (David) almost meets the expectations of the customers. In the case of the website

factor, the retailer surpasses expectations. Since the website factor is not as important to the customers of the niche provider, no further attention needs to be paid to it. However, Elbenwald should continue to work on the product portfolio. This is particularly important for customers of a niche provider and must be continuously adapted to the wishes of the customer. The security and support factors showed little influence on the niche provider. Therefore, these are rather low priority items, but they can be attempted to be raised to zero (expectation = performance). With regard to delivery, Elbenwald meets the requirements of the customers. They should continue their good work and check regularly with customers, as this factor is of high importance for niche provider shoppers.

Fig. 3 also shows that Amazon's customers partially have different priorities. For them, delivery and website factors are particularly important, while the product portfolio is less important. It is also clear that Amazon falls short of its customers' expectations. Although its expectations and performance were measured on a 7-point Likert scale and expectations in the worst case only deviate by 0.87 points, Amazon should nonetheless try to improve in the factors website and delivery, which could significantly increase customer satisfaction. Amazon also lags behind the expectations of its customers in terms of security and support, but since these are less important for the market leader's customers, lower priority can be set here.

4. Summary and conclusion

The present study dealt with the topic of competition in online shopping and with the question of whether it is possible for niche providers (David) to stand out from market leaders (Goliath) through certain factors and be successful in the long term. This question is particularly interesting when one considers that Amazon generates almost 13% (Statista, 2019a, 2019b) of all online sales in the United States. In Germany, it accounts for 46% of online sales (IFH Cologne, 2018). So how can David prove himself against Goliath?

To answer this question, this paper analyzed aspects of customer satisfaction and highlighted success factors and barriers of online trade. Barriers arise, for example, with attractive alternatives, such as in stationary retail or with high involvement and high value products. Online shops will generally have a harder time of it here. Success factors, on the other hand, can be a high level of security, high quality information,

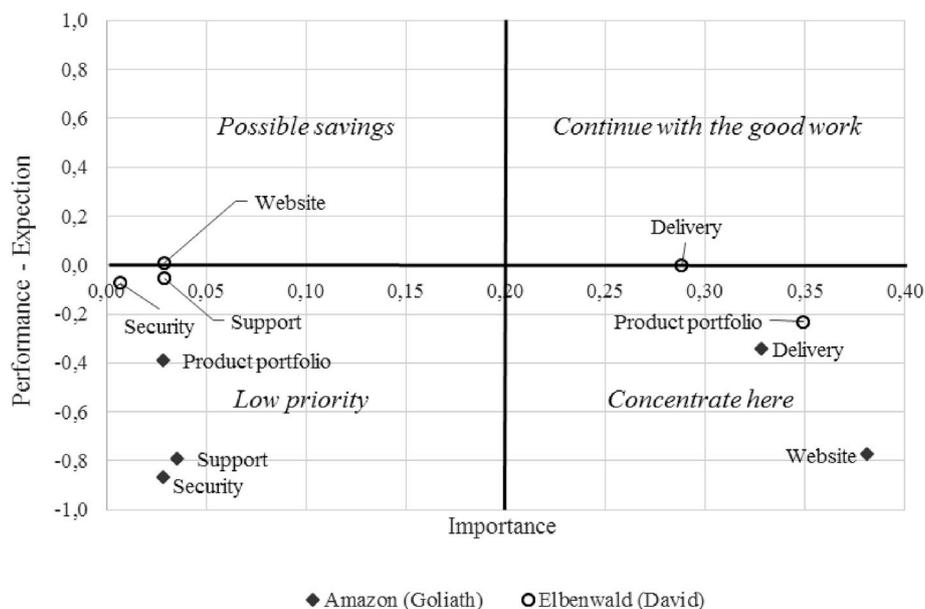


Fig. 3. Graphic representation of improvement potentials of the companies.

or an appealing web design. In this context, factors of service quality are repeatedly mentioned. This paper provides a literature overview of 43 empirical studies that have dealt with the topic of quality factors in online shopping since 2001. Such an elaboration has not yet been carried out and offers a good starting point for further studies.

The present study dealt with the niche of fantasy products, such as The Lord of the Rings and Harry Potter memorabilia. This is a small niche, but it has a constant number of loyal followers. The study was conducted in Germany in 2018 and showed that there are differences in customer satisfaction and loyalty between the niche provider Elbenwald (David) and the market leader Amazon (Goliath). While the customer satisfaction of Amazon customers is particularly influenced by website aspects such as design or user friendliness, the product portfolio of the niche provider Elbenwald is of high relevance for customer satisfaction. This is an important point for niche providers. They should offer a variety of matching products within their niche and respond strongly to the product wishes of their customers. In this way, customer satisfaction can be significantly increased, which ultimately contributes to higher customer loyalty and leads to recommendations, resales, and cross-selling effects. Delivery aspects are an essential factor influencing customer satisfaction at the market leader as well as the niche provider and should also be regarded as essential by other online shops. Various delivery options, status messages for delivery and information on delivery times are essential components of this factor. If possible, an online shop should also offer a precise delivery at a certain time. However, this is an aspect that is difficult to implement for smaller online shops. The study also showed that customer satisfaction and loyalty are higher at the niche provider Elbenwald. Here it can be assumed that the

customers do not choose the shop again for convenience or lower prices but because a certain relationship was established with the shop, which was achieved, for example, through an individual product range and reliable delivery. It can be assumed that such aspects also play a role in other online shops. Small online shops, in particular, should therefore deal intensively with their customers' wishes in order to identify their customers' priorities.

The generalization of this study must be constrained. On the one hand, the study was conducted in a country in which the market leader Amazon holds an outstanding position. It is conceivable that the results will differ in other countries. Cultural differences in online shopping behavior have also not yet been investigated and may influence the prioritization of factors. In addition, it would be very interesting to show how the importance of satisfaction and loyalty factors change in other niches and identify which consumer characteristics go along with it. It would also be interesting to differentiate the factors influencing customer loyalty between niche providers and market leaders in stationary retailing. Which factors are considered important here? In this context, it would also be interesting to examine the influence of omnichannel retailing on both market leaders and niche providers.

This study shows that niche providers have a chance of sustainable market success if they know and respond to the differences in the wishes of their customers compared to the market leader. In addition, the study shows an opportunity to measure the importance of various influencing factors such as website design, product portfolio or delivery aspects of the customers of an online shop and to derive recommendations for action. Furthermore, this study provides impulses and motivations for further research in online shopping.

Appendix

Table A.1

(Note: *: Influence significant at least at a level of $p < 0.05$; n.s.: Influence not significant; ^a: Influence measured on different products, studies or contexts)

| DV | IV | Inf. | Authors |
|----------------------|-------------------------------------|------|--|
| Behavioral intention | Alternative channel service quality | * | Montoya-Weiss et al. (2003) |
| | Assurance | * | Bulut (2015); Montoya-Weiss et al. (2003); Yoo and Donthu (2001); Zhou et al. (2009) |
| | | n.s. | Montoya-Weiss et al. (2003) ^a |
| | Flow | * | Hsu et al. (2012) |
| | Internet expertise | * | Montoya-Weiss et al. (2003) |
| | Loyalty | * | Bulut (2015); Calvo-Porrall and Lévy-Mangin (2015) ^a |
| | | n.s. | Calvo-Porrall and Lévy-Mangin (2015) ^a |
| | Quality | * | Carlson and O' Cass (2010); Collier and Bienstock (2006); Lee and Lin (2005); Montoya-Weiss et al. (2003); Sharma and Lijuan (2015); Zhou et al. (2018) |
| | | n.s. | Collier and Bienstock (2006); Godwin et al. (2011); Kuo et al. (2009) |
| | Responsiveness | n.s. | Zhou et al. (2018) |
| | | * | Collier and Bienstock (2006); Yoo and Donthu (2001) |
| | Satisfaction | * | Bai et al. (2008); Bulut (2015); Calvo-Porrall and Lévy-Mangin (2015); Carlson and O' Cass (2010); Collier and Bienstock (2006); Devaraj et al. (2002); Godwin et al. (2011); Hsu et al. (2012); Kuo et al. (2009); Lee and Lin (2005); Zhou et al. (2009) |
| | | n.s. | Calvo-Porrall and Lévy-Mangin (2015) ^a |
| | Tangibles | * | Yoo and Donthu (2001); Zhou et al. (2018) |
| | | n.s. | Yoo and Donthu (2001) ^a |
| Loyalty | Usefulness and value | * | Kuo et al. (2009); Sharma and Lijuan (2015) |
| | Assurance | * | Bulut (2015); Harris and Goode (2004); Kuo et al. (2009); Yoo and Donthu (2001) |
| | Brand equity | * | Kao and Lin (2016) |
| | Quality | * | Bauer et al. (2004); Parasuraman et al. (2005); Zhang et al. (2015) ^a |
| | | n.s. | Amin (2016); Cristobal et al. (2007); Zhang et al. (2015) ^a |
| | Reliability and privacy | * | Janita and Miranda (2013) |
| | Responsiveness | * | Janita and Miranda (2013); Yoo and Donthu (2001); Zhang et al. (2015) |
| | Satisfaction | * | Amin (2016); Bauer et al. (2004); Bulut (2015); Chen and Wang (2016); Cristobal et al. (2007); Harris and Goode (2004); Kao and Lin (2016); Yang et al. (2009); Zhang et al. (2015) |
| | | n.s. | Calvo-Porrall and Lévy-Mangin (2015); Harris and Goode (2004) ^a |
| | Tangibles | * | Yoo and Donthu (2001) ^a |
| | | n.s. | Yoo and Donthu (2001) ^a |
| | Usefulness and value | * | Boshoff (2007); Harris and Goode (2004); Janita and Miranda (2013); Parasuraman et al. (2005) |
| | Value-added services | * | Janita and Miranda (2013) |

(continued on next page)

Table A.1 (continued)

| DV | IV | Inf. | Authors |
|------------------------------|-------------------------------------|---|--|
| Cai and Jun, 2003 | Quality | * | Jayawardhena (2004); Yang et al. (2005) |
| | Assurance | * | Cai and Jun 2003; Godwin et al. (2011); Harris and Goode (2004); Jayawardhena (2004); Krey et al. (2017); Lee and Lin (2005); Zhou et al. (2009); Zhu et al. (2002) |
| Satisfaction | Assurance | n.s. | Harris and Goode (2004); Wolfenbarger and Gilly (2003); Yang et al. (2004); Yoo and Donthu (2001) |
| | Competence | * | Yang et al. (2004) |
| | Credibility | * | Jayawardhena (2004) |
| | Delivery | * | Yi and Gong (2008) |
| | Empathy | * | Godwin et al. (2011); Jayawardhena (2004); Krey et al. (2017); Zhou et al. (2009); Zhu et al. (2002) |
| | Enjoyment | n.s. | Lee and Lin (2005) |
| | Environment | * | Bauer et al. (2006) |
| | Experiences | * | Yi and Gong (2008) |
| | Interactivity | * | Zhu et al. (2002) |
| | Personal need | * | Cai and Jun 2003; Yang et al. (2005) |
| | Preferences to traditional services | * | Amin (2016) |
| | Product portfolio | n.s. | Zhu et al. (2002) |
| | Reliability | * | Yang et al. (2004) |
| | Reliability | * | Bauer et al. (2006); Krey et al. (2017); Lee and Lin (2005); Wolfenbarger and Gilly (2003); Yang et al. (2004); Zhou et al. (2009); Zhu et al. (2002) |
| | Responsiveness | n.s. | Godwin et al. (2011) |
| | Responsiveness | * | Amin (2016); Bauer et al. (2006); Cai and Jun 2003; Collier and Bienstock (2006); Godwin et al. (2011); Krey et al. (2017); Lee and Lin (2005); Rod et al. (2009); Wolfenbarger and Gilly (2003); Yang et al. (2004); Yoo and Donthu (2001); Zhang et al. (2015); Zhou et al. (2009) |
| | Tangibles | n.s. | Cai and Jun 2003 ^a |
| | Tangibles | * | Amin (2016); Bauer et al. (2006); Cai and Jun 2003; Jayawardhena (2004); Krey et al. (2017); Lee and Lin (2005); Montoya-Weiss et al. (2003); Wolfenbarger and Gilly (2003); Yang et al. (2004); Yang et al. (2005); Yoo and Donthu (2001) |
| | Tangibles | n.s. | Montoya-Weiss et al. (2003) ^a |
| | Access | n.s. | Jun et al., 2004 |
| Alternatives' attractiveness | n.s. | Calvo-Porrall and Lévy-Mangin (2015); Montoya-Weiss et al. (2003) | |
| Assurance | * | Calvo-Porrall and Lévy-Mangin (2015) ^a | |
| Assurance | * | Ali and Raza (2017); Devaraj et al. (2002); Harris and Goode (2004); Kundu and Datta (2015); Lee and Lin (2005); Montoya-Weiss et al. (2003) | |
| Assurance | n.s. | Jun et al., 2004; Kim and Stoel (2004); Yang et al. (2004) | |
| Competence | n.s. | Kim and Stoel (2004); Yang et al. (2004) | |
| Compliance | * | Ali and Raza (2017) | |
| Corporate image | * | Calvo-Porrall and Lévy-Mangin (2015) | |
| Reuse/repurchase intention | n.s. | Sharma and Lijuan (2015); Yi and Gong (2008) | |
| Efficiency | n.s. | Herington and Weaven (2009) | |
| Empathy | * | Ali and Raza (2017) | |
| Empathy | n.s. | Devaraj et al. (2002); Lee and Lin (2005); Zhu et al. (2002) | |
| Enjoyment/playfulness | * | Bauer et al. (2006); Chen and Wang (2016); Hsu et al. (2012) | |
| Entertainment | n.s. | Bauer et al. (2006); Chen and Wang (2016); Hsu et al. (2012) | |
| Flow | n.s. | Kim and Stoel (2004) | |
| Flow | * | Hsu et al. (2012) | |
| Loyalty | * | Kao and Lin (2016) | |
| Price savings | * | Devaraj et al. (2002) | |
| Product portfolio | * | Yang et al. (2004) | |
| Quality | * | Bauer et al. (2004); Carlson and O'Cass (2010); Collier and Bienstock (2006); Cristobal et al. (2007); Godwin et al. (2011); Harris and Goode (2004); Herington and Weaven (2009); Janda et al. (2002); Kao and Lin (2016); Kim and Stoel (2004); Krey et al. (2017); Kundu and Datta (2015); Kuo et al. (2009); Montoya-Weiss et al. (2003); Rod et al. (2009); Yang et al. (2005); Yang et al. (2009); Yi and Gong (2008); Zhang et al. (2015); Zhou et al. (2009); Zhou et al. (2018); Zhu et al. (2002) | |
| Quality | n.s. | Harris and Goode (2004) ^a | |
| Reliability | * | Ali and Raza (2017); Bauer et al. (2006); Jun et al., 2004; Lee and Lin (2005); Yang et al. (2004); Zhu et al. (2002) | |
| Reliability | n.s. | Devaraj et al. (2002) | |
| Responsiveness | * | Ali and Raza (2017); Bauer et al. (2006); Collier and Bienstock (2006); Devaraj et al. (2002); Jun et al., 2004; Kim and Stoel (2004); Lee and Lin (2005); Yang et al. (2004); Zhang et al. (2015); Zhou et al. (2018) | |
| Responsiveness | n.s. | Devaraj et al. (2002) | |
| Search costs | n.s. | Calvo-Porrall and Lévy-Mangin (2015) | |
| Tangibles | * | Ali and Raza (2017); Bauer et al. (2006); Devaraj et al. (2002); Herington and Weaven (2009); Jun et al., 2004; Lee and Lin (2005); Yang et al. (2004); Zhou et al. (2009); Zhou et al. (2018) | |
| Tangibles | n.s. | Kim and Stoel (2004) | |
| Transaction cost | * | Yang et al. (2009) | |
| Usefulness and value | * | Calvo-Porrall and Lévy-Mangin (2015); Chen and Wang (2016); Devaraj et al. (2002); Kuo et al. (2009) | |
| Usefulness and value | n.s. | Yang et al. (2009) | |
| WOM | * | Yi and Gong (2008) | |

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