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The Role of Logistics Service Quality in Achieving Customer Satisfaction and Loyalty in the End-Consumer Market Using the Example of the German Motorcycle Industry

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Abstract

Logistics service quality has been considered as a differentiation factor, and in this way, as a new area in which to gain competitive advantage. The study aims to examine the complex relationship between logistics service quality and customer loyalty intention in service operations of the motorcycle end-consumer market. Meanwhile, corporate image, as well as customer expectation, are taken into consideration in the research since the study attempts to adopt customer perceptions of service provider performance instead of depending on service providers' self-reported performance indicators. The research model is consequently developed in accordance with the Service Quality Model and the European Customer Satisfaction Index. The quantitative approach is chosen to test the proposed research model's availability via conducting the survey in Germany. The findings reveal that operational and relational logistics service quality and corporate image are the significant factors influencing customer satisfaction which, in turn, affecting loyalty intention. Furthermore, positive correlations are found between the antecedents of customer satisfaction. Namely, operational and relational logistics service quality are the critical factors in the formation of the corporate image, and a favorable corporate impression would raise customer expectation towards service providers.

Keywords: service quality, logistics service quality, corporate image, customer expectation, customer satisfaction, customer loyalty, end-consumer market, German motorcycle industry, Service Quality Model, European Customer Satisfaction Index

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1. Introduction

1.1 Research Background and Motivation

Achieving customer satisfaction and loyalty is the primary goal for most service providers, and satisfaction is the necessary antecedent for creating customer loyal behavior (McDougall & Levesque, 2001, p. 395). Customer loyalty has been identified as a means to reach long-term success for business firms since acquiring new customers and developing business with them are more time consuming and costly. Therefore, the critical element for a business firm to achieve sustainable success in markets is determined by the firm's ability to maintain and extend a large and loyal customer base (Davis, 2006, p. 1). Reichheld, Markey Jr., and Hopton (2000, p. 146) also claimed that building loyalty with selected customers was just one weapon against the competition in the past. However, today it has become necessary to survive. In the past, having a variety of products is a competitive strategy for business firms to create sustainable advantages and maintain a loyal customer base, while nowadays business firms have to build up complex relationships with customers and differentiate themselves by providing products and services bundles in different ways to offer convenience, reliability and support (Fuller, O'Conor & Rawlinson, 1993, Harvard Business Review). One effective method for forming closer relationships with customers is leveraging the logistics performance of a business firm (Davis, 2006, p. 2).

Over the last decade, the inclusion of service quality and relationship marketing has significantly changed the academic research and managerial practice of logistics. Traditionally, logistics has been merely seen as an essential connection between production and consumption (Saura, Francés, Contrí & Blasco, 2008, p. 651). Thus, a company's logistics function was often viewed as a cost generator with a lack of differentiation capacity. However, this traditional logistics understanding has started to change at the end of the 20th century, as logistics research based on marketing theories started to analyze the capacity of logistics to provide service quality and further to create a greater level of customer satisfaction and loyalty (Richey, Daugherty & Roath, 2007, p. 197; Kilibarda & Andrejic, 2012, p. 1). Nowadays, many companies utilize logistics as a competitive advantage in markets because of its tangible and material service and the effect on end-consumers (Kilibarda & Andrejic, 2012, p. 1).

For example, BMW's customer-oriented sales and production process (KOVP). This KOVP strategy aims to shorten the distance between suppliers and customers and further increase customer satisfaction rate (BMW Group, 2001). It aligns customers with the production plants in sync, allowing customers to tailor their motorcycle in dealer shops directly and shortens the logistics delivery lead time to ten days (BMW Group, 2021).

"The motorcycle industry includes all powered-two-wheelers, i.e. all motorized single-track two-wheeled vehicles, ranging from pedelecs to smaller scooters and large-engine motorcycle" (Faust & Glanzmann, 2016, p. 241). Global motorcycle sales in 2020 reached a sales volume of $108.8 billion (Baumann, 2021, p. 1). In addition, the motorcycle industry is chosen as the example in this study to investigate the influence of logistic performance on achieving customer satisfaction and loyalty in its end-consumer market. The end-consumer market in this study refers to the consumption activities happening in authorized motorcycle dealerships. In other words, this study only examines the impact of logistics service quality that occurs between motorcycle brands and their authorized motorcycle dealerships on customers. Authorized motorcycle dealerships are the essential physical touchpoints of motorcycle brands towards customers in terms of sales and services since customers in the market for high-priced durable goods tend to visit physical stores to obtain product information and inspect the product quality (Yavorsky, Honka & Chen, 2020, p. 1). The primary profit resource of motorcycle dealerships is generated from service and after-sales. As a result, it is crucial for motorcycle dealerships to maintain good relationships with customers (Gaiardelli, Saccani & Songini, 2007, p. 698). Especially, since logistics service quality has been considered an effective way to form closer relationships with customers, this study attempts to know whether this new academic perspective can be extended into the motorcycle industry or not (Foggin, Mentzer & Monroe, 2004, p. 827).

1.2 Research Gap

Compared to relevant studies in customer satisfaction and loyalty, using the logistics perspective to examine customers' satisfaction level and loyalty intention seems to be a relatively novel research area, where there is a need for further investigation (Ghoumrassi & Tigu, 2018, p. 40). Previous literature review on the contemporary

studies of service quality, especially in logistics service quality, has revealed that the definition and conceptualization of this subject have been formed up by two critical approaches, which can be called subjective quality and objective quality in general (Thai, 2013, p. 115). For example, technical quality and functional quality by Grönroos (1984), output quality and process quality by Lehtinen and Lehtinen (1991), and core quality and relational quality by McDougall and Levesque (2001). The impact of logistics service quality on customer satisfaction and loyalty has been discussed and examined by both academic literature and empirical practice. However, since the research models in extant logistics service quality studies were derived from traditional service quality models, the research dimension was only concentrated on the effectiveness of operational and relational performance to customer satisfaction and loyalty. Other potential variables that may influence satisfaction level and loyalty intention were not considered (Stank, Goldsby & Vickery, 1999; Davis, 2006; Saura, Francés, Contrí & Blasco, 2008; Kilibarda & Andrejic, 2012; Jang, Marlow & Mitroussi, 2013).

In terms of customer satisfaction literature based on marketing principles, the determinants of customer satisfaction involve not only overall service quality but also other factors. For instance, the disconfirmation of expectation theory emphasizes that customer satisfaction is influenced by the combination of the product or service performance and customer expectation level (Gunning, 2000, p. 24). In pursuing a holistic comprehension of the antecedents and consequences of customer satisfaction in the consumer context, researchers have made a new model development step forward. The European Customer Satisfaction Index (ECSI) has been widely applied in the service-oriented sector and proved its explanatory availability to customer satisfaction and loyalty (Johnson, Gustafsson, Andreassen, Lervik & Cha, 2001, p. 219). The ECSI model is a structural equation model, indicating the antecedents to build up customer satisfaction and loyalty intention (Kristensen, Martensen & Gronholdt, 2000, p. 1007-1008). More specifically, the ECSI model reveals that perceived service quality, corporate image, customer expectation and perceived value have direct impacts on the creation of customer satisfaction and indirect influences on the formation of loyalty intention (Haaften, 2017, Rovaha). Different from other customer satisfaction indices, the ECSI model further divides perceived service quality into two dimensions, technical and functional, and adds corporate image as a new

latent variable (Johnson, Gustafsson, Andreassen, Lervik & Cha, 2001, p. 219; Ciavolino & Dahlgaard, 2007, p. 546).

However, to the best of our knowledge, none of the current logistics service quality studies have adopted the ECSI model to analyze its influence on creating customer satisfaction and loyalty behavior under the consumer context. Although researchers have found some commonalities between marketing theory on customer satisfaction and service operation study at the theoretical level, there is a wide difference in measurement (Stank, Goldsby & Vickery, 1999, p. 444). Moreover, since the motorcycle industry is a niche market, little empirical research has done a comprehensive analysis to examine customer satisfaction and loyalty intention in the motorcycle end-consumer market by leveraging logistics service quality and using customer perspective instead of depending on service providers' self-reported performance. Therefore, based on the several reasons mentioned above, a further holistic study is needed to make up this research gap by integrating the Service Quality model and the ECSI model.

1.3 Research Purpose

In order to fill up the research gap, this study sets up the goal to examine factors influencing customer satisfaction and loyalty intention and identify the key determinants using customer perceptions with in-depth analysis on this topic. The proposed research model of this study integrates the Service Quality model and the ECSI model. The Service Quality model is selected to understand the fundamental composition factors of service quality and further imported into logistics perspective. The ECSI model is chosen to identify what factors affect customer satisfaction and loyalty intention via customer perception. Therefore, this integrated model is developed to comprehensively understand the total effects of logistics service quality on customer satisfaction and loyalty intention of motorcycle end-consumer market through customer perspective. Additionally, since the market size and consumer behavior differ from country to country, the German market is selected to be the investigated market of the study. The research questions are listed as following:

RQ1: How does logistics service quality influence customer satisfaction which, in turn, influence customers' loyalty intention?

RQ2: How do corporate image and customer expectation influence customer satisfaction which, subsequently, influence customers' loyalty intention?
RQ3: How does customer satisfaction influence customers' loyalty and switching intentions?
RQ4: What are the interrelationships among logistics service quality, corporate image, and customer expectation?

1.4 Research Method

The steps of the research method to fulfill the abovementioned research goals are visualized in Figure 1. First of all, the inductive approach is used for the fundamental concepts and theories, and subsequently, the related fields and themes are concerned through a comprehensive analysis of the academic literature, industry research reports, and press release (Thomas, 2006, p. 238). The extant research has indicated that besides service quality, corporate image and customer expectation are the other two factors influencing customer satisfaction and loyalty when evaluating their service providers (Grönroos, 1984, p. 37; Johnson, Gustafsson, Andreassen, Lervik & Cha, 2001, p. 225). Therefore, considering corporate image and customer expectation when assessing overall logistics service quality is expected to offer a more comprehensive understanding of customer satisfaction and loyalty intention. The proposed research model of this study is structured through integrating the Service Quality model presented by Grönroos (1984) and the ECSI model introduced by the ECSI Technical Committee (1998) to analyze (1) the impacts of logistics service quality, corporate image, and customer expectation on satisfaction which, in turn, on loyalty, and (2) the effectiveness of satisfaction to customers' loyalty and switching intentions. Through the analyses based on previous literature and proposed models, the research hypotheses are raised correspondingly.

Furthermore, the quantitative method is chosen to test the proposed research model's availability and hypotheses and understand the interrelationships between variables (Watson, 2015, p. 44). Thus, the survey instrument is adopted and further conducted in the German motorcycle end-consumer market. The survey questions are developed according to the extant literature and experts' opinions to enhance content validity. The initial version of the survey is reviewed and revised through pre-test with frequent motorcycle buyers who have sufficient service experiences in authorized motorcycle

dealerships. To make sure measured beliefs are valid, only the respondents who have direct service experiences in authorized motorcycle dealerships are concerned in the analysis. The survey data is collected from direct contacts and social media platforms and further analyzed using PLS-SEM 3.0. Through the abovementioned research method, it is believed that the findings of this study can provide critically managerial insights for motorcycle brands and specially authorized motorcycle dealerships involved in customer acquisition and maintenance.

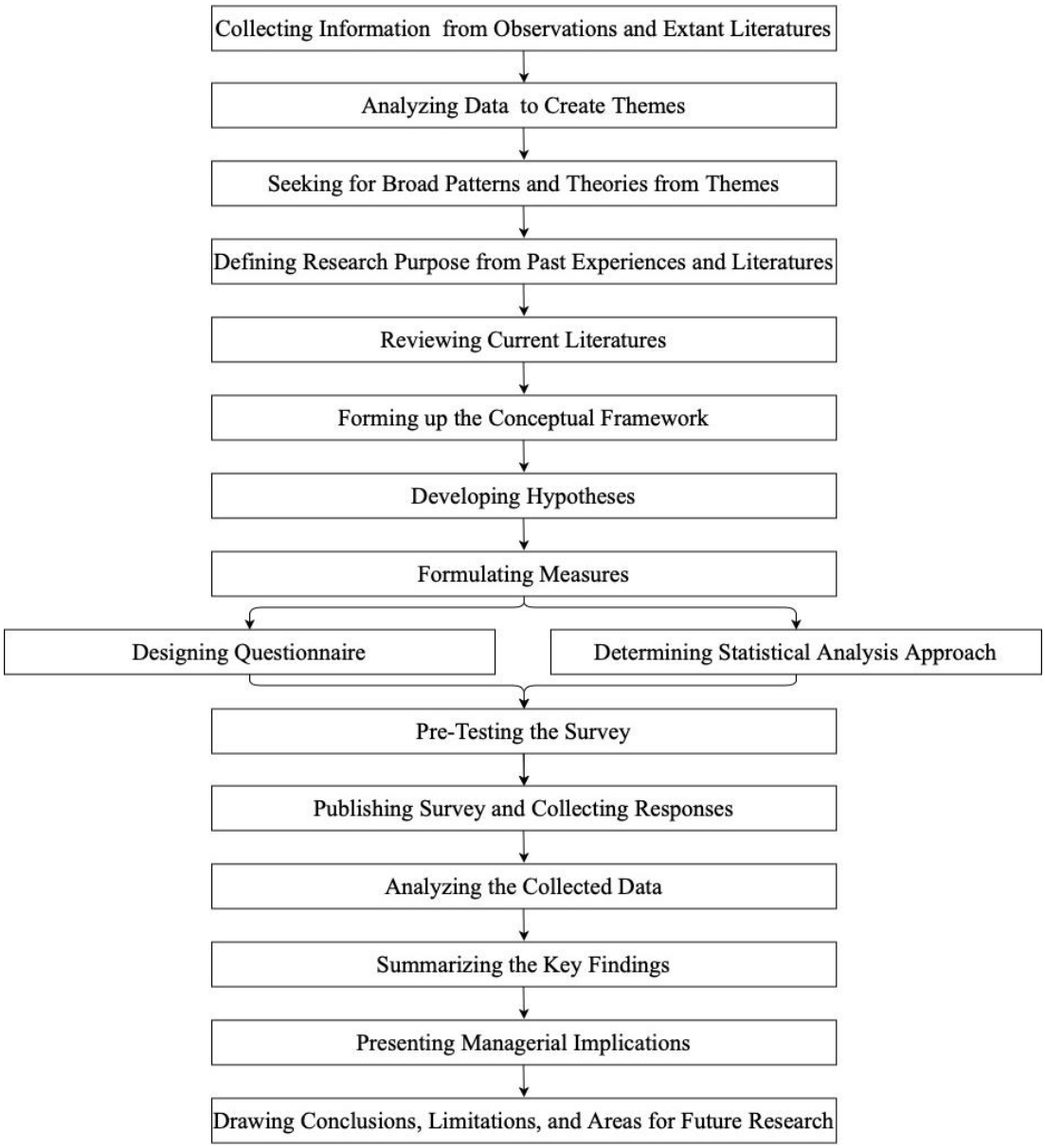

Figure 1: Research Framework

2. Theoretical Framework

Since the study aims to understand the role of logistics service quality in achieving customer satisfaction and loyalty in the German motorcycle end-consumer market via customer perception, this chapter provides an in-depth analysis of fundamental concepts of service quality, logistics service quality, corporate image, customer expectation, customer satisfaction and loyalty, and the market overview of German motorcycle industry based on the academic literature, industry research reports, and press release.

2.1 The Concept of Service Quality

The concept of Service quality has been identified in Lewis and Booms' research (1983, p. 101), they indicate that "Service quality is the measure of how well the service level delivered matches customer expectations. Delivering quality service means conforming to customer expectations on a consistent basis." Therefore, service quality is considered the output of a service delivery organization, and it has become a significant differentiator for service delivery organization to stand out from its competitors (Parasuraman, Zeithaml & Berry, 1988, p. 35). Grönroos (1984, p. 38) further divides service quality into two perspectives in his study: Technical quality and functional quality. Technical quality is the result of operational process, which includes what the customer is actually receiving from the service. Functional quality is the result of interaction between the service provider and the recipient and involves how the service is delivered (Grönroos, 1984, p. 38-39; Parasuraman, Zeithaml & Berry, 1985, p. 43). Comparing these two perspectives, functional quality is more critical than technical quality, as long as the technical quality is at least on a satisfactory level. A high level of functional quality might make up temporary problems with technical quality. This argument is especially significant for service providers since technical quality among companies is relatively similar in markets (Grönroo, 1984, p. 41-42).

2.2 Logistics Service Quality

Logistics service creates value by means of accommodating customers' delivery requirements in a cost-effective way (Stank, Goldsby & Vickery, 1999, p. 430; Stank, Goldsby, Vickery & Savitskie, 2003, p. 27). It is a distinct subset of industrial services

that connect suppliers and customers (Stank, Goldsby, Vickery & Savitskie, 2003, p. 27). When a company pursues higher service levels, it must be more active to its customers, predict customer expectations, and measure the degree of customers' satisfaction (Stank, Goldsby & Vickery, 1999, p. 430). Consequently, logistics service provides companies a new way to enhance customer service level and improves their competitive positions in markets (Davis, 2006, p. 30). The concept of logistics service quality is presented by Mentzer (Mentzer, Flint & Hult, 2001, p. 82-83). He implies that the customer perception of logistics service quality is related to the physical distribution and is particularly concerned about the after-sales process. In other words, logistics service quality is determined by processes of order and delivery, customers' perception about after-sales services, and quality and relevant information provided by sales and customer service staff (Micu, Capatina & Aivaz, 2013, p. 2). Therefore, it is a means to evaluate the level of a service provider's ability to deliver requested products or services on time and at a reasonable cost continually (Jang, Marloe & Mitroussi, 2013, p. 496). Mentzer, Flint, and Hult (2001, p. 84) develop a nine-item model of logistics service process segmentation. This framework provides a holistic perspective to evaluate logistics service quality. The nine items include personnel contact quality, order release qualities, information quality, ordering procedures, order accuracy, order condition, order quality, order discrepancy handling, and timeliness.

More specifically, logistics service quality is composed of two fundamental elements derived from two-element categorization of service quality, which are operational and relational dimensions (Stank, Goldsby & Vickery, 1999, p. 430). Operational logistics service quality concerns about physical distribution service. Physical distribution service is focused on the ability of logistics services to deliver logistics seven Rs, which is "deliver the right product in the right amount at the right place at the right time in the right condition at the right price with the right information" (Uvet, 2020, p. 2). Stank, Goldsby, and Vickery (1999, p. 430) further indicate that physical distribution service is those activities carried out by service providers that contribute to productivity, efficiency, and consistency of quality. For instance, features of delivery, which define and tackle time, form, and place utilities of service. On the other hand, relational logistics service quality concerns marketing customer service, which is concentrated on the perspectives of customer satisfaction in logistics service (Uvet, 2020, p. 2). Marketing customer service underlines the activities that help service

providers understand their customer needs and expectations better and develop processes to fulfill them. The ultimate goal of these activities is to shorten the distance between service companies and their customers (Stank, Goldsby & Vickery, 1999, p. 430). According to the extant literature mentioned above, this study defines operational logistics service quality as means of physical features of the logistics service contributing to consistent quality, efficiency, and productivity and the service providers' ability to offer physical distribution service based on customers' needs; Relational logistics service quality is defined as service providers' ability to understand customers' needs and expectations better and responses in a proactive manner by marketing customer service. (Micu, Capatina & Aivaz, 2013, p. 2; Stank, Goldsby & Vickery, 1999, p. 430)

2.3 Corporate Image

Corporate image is an indispensable factor in customer satisfaction and loyalty maintenance (Chien & Chi, 2019, p. 4). American economist, Boulding (1956, p. 175), indicates that image is a subjective perception representing the perspectives perceived or created by certain people according to their fragmented information or experience. In other words, corporate image is formed by customers' experience of receiving services and products over time and further influences customer expectation level (Grönroos, 1984, p. 39; Chien & Chi, 2019, p. 4). Therefore, the corporate image can be defined as an overall impression of a company held in customers' minds (Lai, Griffin & Babin, 2009, p. 982). Particularly, corporate image is the outcome of a company's different stakeholders' affections, viewpoints, interactions, and impressions towards a company, hence it is essential for companies to build up a positive public image. As customers are the majority of external stakeholders, a favorable corporate image can help companies ensure their competitive advantages and create trust in customers' minds (Alam & Noor, 2020, p. 3).

2.4 Customer Expectation

Customer expectation has been defined in different ways in the previous service quality and customer satisfaction literature. In service quality literature, the expectation is seen as desires or wishes of customers, while customer satisfaction literature tends to view expectation as predictions made by customers about what may

happen during an impending transaction (Lewis & Mitchell, 1990, p. 12; Parasuraman, Zeithaml & Berry, 1993, p. 2). Generally, customers have several different information sources resulting in expectations regarding products or services provided by a specific company. These sources are word-of-mouth, expert suggestion, prior experience about the service or the competitive service, publicity, and company communication (Almsalam, 2014, p. 80). Parasuraman, Zeithaml, and Berry's study (1993, p. 1) further gives customer expectation a more comprehensive investigation. They specify customer expectation into three different types: desire service expectation, adequate service expectation, and predicted service expectation.

Services are heterogeneous; hence, the level to which customers recognize and are willing to accept heterogeneity is so-called the zone of tolerance (Almsalam, 2014, p. 80). The zone refers to the difference between the level of desired service expectation and adequate service expectation. Namely, customer expectation is evaluated by a range of levels instead of a single level. The influential factors include customer experience, number of alternative service providers, expectations of an associated party, and emergency or recovery circumstances (Parasuraman, Zeithaml & Berry, 1993, p. 5). However, the size of the zone of tolerance is very dynamic. It might be different from customer to customer and is distinct from one circumstance to the other for the same customer (Parasuraman, Zeithaml & Berry, 1991, p. 42). Besides, there is no sufficient study supporting how the Likert scale could be applied to quantify the size of individual customer's zone of tolerance for the further empirical investigation of the study. Therefore, though customer expectation contains different expectation levels and dimensions, this study simply views customer expectation as a customer's prediction of the level of product or service offered by companies.

2.5 Customer Satisfaction

Customer Satisfaction is the main result of marketing activities and plays a role in connecting processes culminating in purchase and consumption with the post-purchase phenomenon, for instance, repeat purchase, attitude transform, and brand loyalty (Churchill, Jr. & Surprenant, 1982, p. 491). Expectation disconfirmation theory is the essential marketing study to understand customer satisfaction and the process by which customers grow their feelings of satisfaction or dissatisfaction (Cadotte, Woodruff & Jenkins, 1987, p. 305; Gunning, 2000, p. 24). Disconfirmation emerges from

discrepancies between customers' previous expectations and the actual performance of products or services that customers receive (Churchill, Jr. & Surprenant, 1982, p. 492). Consequently, this theory shows how customer satisfaction is affected by product and service performance and the level of expectation (Anderson & Sullivan, 1993, p. 127; Gunning, 2000, p. 24). Namely, perceived quality and customer expectation are related antecedents to form up customer satisfaction. Even though customer satisfaction is a fundamental factor in business research, there is no specific definition regarding customer satisfaction. The descriptions in Table 1 conceptualize the concept of customer satisfaction. These definitions highlight that customer satisfaction is an outcome of consumption activity or experience and is also a process of customer's evaluation between what service or product was received and what was expected by customer (Churchill, Jr. & Surprenant, 1982, p. 493; Mathews, 2001, p. 38). Consequently, this study defines customer satisfaction as the outcome of evaluation between received products or services and customers' expectations throughout the customer relationship.

"Satisfaction is the customer's fulfillment response. It is a judgment that a product/ service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfillment, including levels of under-or over-fulfillment" (Oliver, 2015, p. 8).
"Customer satisfaction is the outcome of a comparison between expected and perceived performance throughout the customer relationship" (Wagenheim, 2003, p. 5).
"Customer satisfaction is viewed as the overall assessment of the service provider while future intentions are the stated likelihood of returning to the service provider" (McDougall & Levesque, 2000, p. 393).

Table 1: Definitions of Customer Satisfaction

2.6 Customer Loyalty

The marketing literature to date implies that customer loyalty can be viewed from two distinct perspectives. The first perspective sees loyalty as an attitude, indicating that the degree of customer loyalty depends on the customer's feeling. Customers' different feelings generate an individual's overall attachment to a service, product, or company (Parasuraman, Zeithaml, and Berry, 1996, p. 33). The second perspective considers customer loyalty as a behavior, for instance, saying positive word-of-mouth, recommending to others, repurchasing from the same company, and enhancing the scope and the scale of a relationship with the company, (Hallowell, 1996, p. 28).

Instead of attitudinal perspective, this study examines customer loyalty by behavioral perspective because behavioral intention can be seen as the indicator of whether customers will remain with or leave the company (Parasuraman, Zeithaml & Berry, 1996, p. 34). According to Oliver's study (2015, p. 432), behavioral loyalty is a deeply held commitment to consistently repurchase a preferred product or service in the future, although situational effects and marketing activities may cause switching behavior. Chaudhuri and Holbrook (2001, p.83) also point out that behavioral loyalty is the average customer's willingness to rebuy the brand. Therefore, based on the extant definitions of behavioral customer loyalty, the study defines customer loyalty as the average of customer's willingness to repurchase a preferred product or service from the same company and hold a relationship with the company.

2.7 Market Overview of the German Motorcycle Industry

2.7.1 Market Growth and Leading Players

In recent years, the German motorcycle industry has experienced an overall growth on account of general growth in the automobile industry, the launch of new motorcycle models equipped with fuel-efficient or electric engines, and the rise of the e-commerce sector (Techsci Research, 2020). However, because the sales of the motorcycle industry are positively linked to economic stability and fluctuations, the outbreak of the Covid-19 pandemic starting from the end of 2019 has severely hit on the German motorcycle industry (Statista, 2020). Figure 2 reflects the current market situation of German motorcycle industry that mentioned above: the stable growth of revenue and unit sales of motorcycles from 2016 to 2019, and the dramatic decline in 2020. In terms of market share, the main players in the German motorcycle industry are BMW Motorrad, Harley-Davidson, Yamaha, Honda Motorcycles, Suzuki Motorcycles, KTM Motorcycles, Kawasaki, Ducati, Piaggio, and Triumph. Especially, BMW Motorrad is in the leading position both in market share of motorcycle sale and revenue (Statista, 2020).

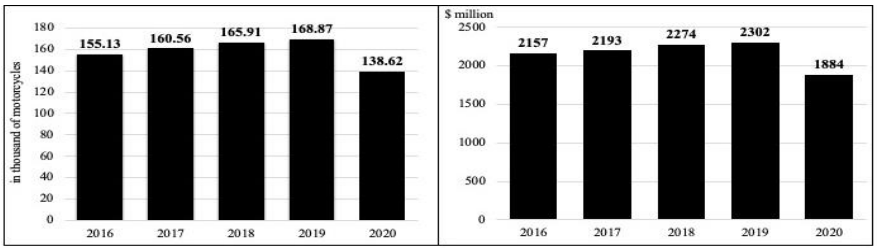

Figure 2: Unit Sales of Motorcycles (left) and Market Revenue in Germany (right) (Adapted from Statista, 2020)

2.7.2 The Digital and Customized Services in German Motorcycle Market

Since the motorcycle market is very seasonal, most motorcycle dealers adopt out-of-town dealership strategies that allocate their dealer shops in the shopping center instead of the city center and form up a motorcycle village (Wheatley, 2016, Automotive Logistics). To get closer to customers, apart from traditional services and after-sales in physical motorcycle dealer shops, lots of motorcycle brands have launched their digital services, which allow customers to order components, parts, and accessories online, and ship orders to the assigned addresses. However, through market research (Appendix I), the study sorts out that the digital service in the German motorcycle end-consumer market is not that mature. For example, some motorcycle brand websites only provide product availability information in physical dealer shops instead of containing online order function; and the online sales system between brands and dealerships are not connected, customers hence can not pick up ordered products in any authorized dealerships nearby.

To respond to customers' demands for customization and faster delivery lead time, several motorcycle companies have developed or upgraded their production and sales process, this study takes BMW Motorrad and Harley-Davidson as instances because their customization strategies are distinct from each other, BMW Motorrad focuses on the upgrade of production line, and Harley-Davidson concentrates on the cooperation with their dealerships. As the leading player for manufacturing luxury cars, BMW has been the first in the automotive industry to use KOVP, so-called customer-oriented sales and production process, to enhance the customization process, and apply it into its motorcycle sector (Renner & Ciesielski, 2000, SAE Mobilus). With the assistance of KOVP, authorized dealers of BMW Motorrad could use the online ordering process to check the availability of production capacity and show customers their desired parts and motorcycle on PC in the meantime. The confirmation that the motorcycle can be

built to the required specification and completed production date is instantly provided to customers thanks to the direct communication with the respective plant. Moreover, customers are allowed to change their customized designs up to 10 days before the handover date. Hence, due to the KOVP strategy, product delivery lead time has been ideally shortened to ten days (Renner & Ciesielski, 2000, SAE Mobilu; Kochan, 2003, PSI).

In the case of Harley-Davidson, the company adopted the program, customer vehicle operation, to offer unique large-displacement engines, paint designs, and additional accessories for its selected mass-produced motorcycle models in order to provide premium quality services to the most demanding customers (Adamopoulos, 2014, Consumer Value Creation). From February 2011, Harley-Davidson has made one step further. It launched its new website-based customization program, HD1. Customers can design their own motorcycle parts and accessories online, selecting among 8000 items. Additionally, the most customized parts and accessories are made in Harley-Davidson dealer shops except for engines. This strategy not only assists Harley-Davidson saves the expense of re-modeling its production lines and supply chain capacity but also helps its authorized dealerships earn more profit than just selling motorcycles (Cyril Huze Post, 2014).

2.7.3 The Relation between Motorcycle Brand and Authorized Dealership

The relationship between motorcycle brands and authorized dealerships has been symbiotic. In other words, motorcycle brands rely on their dealers' networks for sales and services to the end consumers. In the meantime, dealerships depend on motorcycle brands to provides motorcycles and components to sell and finance their servicing activities when motorcycles are still under warranty (Naus, 2021, Bearing Point). Motorcycle brands use their screening program to select their channel partners in the respective areas. The motorcycle brands present a business case to the potential dealership partners, explaining the business plan regarding volumes and profitability. On the same assessment, the potential dealership partners can decide whether they want to cooperate with these specific motorcycle brands and propose their interests (Auto Punditz, 2020). Once the cooperation between each other is confirmed, the dealership partner must provide the infrastructure as the standard laid down by the motorcycle brand. Meanwhile, the motorcycle brand sets up a series of strict guidelines

with the dealership partner regarding store display, the standard of workforce recruitment, and operating procedures (Naus, 2021, Bearing Point). The profits of dealerships mainly derive from services and after-sales (over 40%), while the sales of new motorcycles only generate a small portion of profit margins (less than 8%) (Gaiardelli, Saccani & Songini, 2007, p. 698).

Therefore, based on the features of the relationship between motorcycle brands and authorized dealerships, it is significant that dealerships are the face of motorcycle brands because they are the touchpoint for customers and are responsible for maintaining good relationships with customers throughout the sales and service lifecycle. That is to say, when dealerships generate a higher level of customer satisfaction, it may lead to customer loyalty and then better profitability (Bowen & Chen, 2001, p. 213; Stank, Goldsby, Vickery & Savitskie, 2003, p. 30). Simultaneously, motorcycle brands may also benefit from the high level of customer satisfaction generating by their dealerships, and it may further result in a positive brand image and even brand loyalty.

3. Literature Review and Hypotheses Development

Following the framework of the theoretical remarks, the research model of this study is developed to examine the impact of logistics service quality on customer satisfaction and loyalty in the German motorcycle end-consumer market with the integration of Grönroos' Service Quality model and the ECSI model. In this chapter, the study proposes the following hypotheses based on the current literature findings.

3.1 The Research Model

The research model suggests that operational and relational logistics service quality, customer expectation, and corporate image influence customer satisfaction which, in turn, influences customer's loyalty intention in the end-consumer market of German motorcycle industry. Additionally, the proposed model structure is beneficial for testing the specified relationships via using a set of linear structural equations to explore the antecedent and consequent relationships (McDougall & Levesque, 2000, p. 400). The proposed research model is visualized in Figure 3.

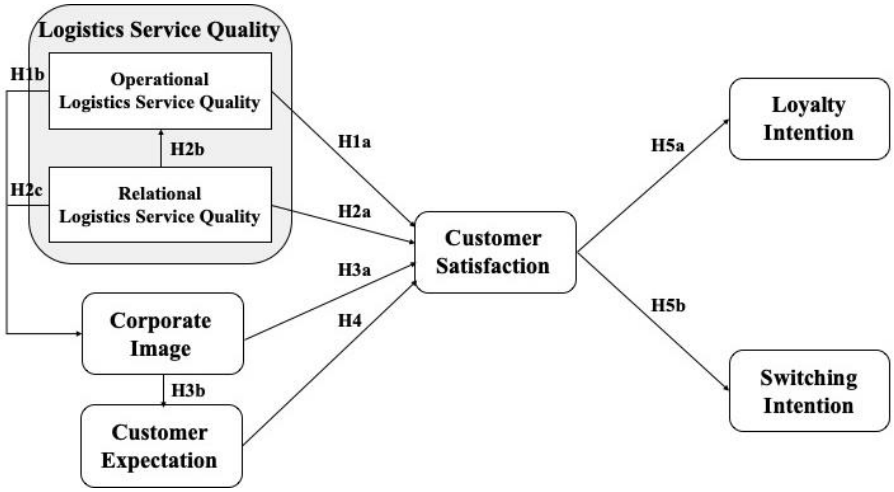

Figure 3: The Research Model

3.2 The Interrelationships between Variables and Hypotheses Development

3.2.1 Operational and Relational Logistics Service Quality

Significant amounts of researches have strongly supported that the logistics service quality is the critical marketing factor that helps enhance customer satisfaction (Mentzer, Flint & Hult, 2001, p. 83; Stank, Goldsby, Vickery & Savitskie, 2003, p.

30). Meanwhile, expectation disconfirmation theory has suggested that perceived service quality positively affects customer satisfaction (Gunning, 2000, p. 24). More specifically, based on the perspectives of Grönroos' Service Quality model and the ECSI model, perceived service is comprised of two fundamental service quality dimensions, technical quality and functional quality (Grönroos, 1984, p. 39; Kang & James, 2004, p. 267; Ciavolino & Dahlgaard, 2007, p. 546). This categorization of two-quality dimensions from Grönroos' model and the ECSI model is the same as the categorization of logistics service quality (Thai, 2013, p. 116). That is to say, operational and relational logistics service quality might have positive effects on customer satisfaction.

Simultaneously, extant studies have also shown that relational logistics service quality has a positive effect on operational logistics service quality, and it is an antecedent of operational logistics service quality. When a customer relationship is established, it allows the service provider to obtain a better view of the customer's desires and needs. Once the service provider would have learned these customer expectations, the service provider can concentrate on the operational means to reach them. (Stank, Goldsby & Vickery, 1999, p. 433; Stank, Goldsby, Vickery & Savitskie, 2003, p. 32; Davis, 2006, p. 136). In addition, the previous chapter has pointed out that corporate image is influenced by technical and functional quality (Grönroos, 1985, p. 39; Zameer, Tara, Kausar & Mohsin, 2015, p. 448). Therefore, this study assumes that based on the scope of the categorization of two-quality dimensions from Grönroos, operational and relational logistics service quality may also have positive impacts on corporate image. In short, based on the above analysis, it could conceivably be hypothesized that:

H1a: Operational logistics service quality has a positive effect on customer satisfaction.
H1b: Operational logistics service quality has a positive effect on corporate image.
H2a: Relational logistics service quality has a positive effect on customer satisfaction.
H2b: Relational logistics service quality has a positive effect on operational logistics service quality.
H2c: Relational logistics service quality has a positive effect on corporate image.

3.2.2 Corporate Image

The corporate image refers to the operational capabilities and competitive advantage of a firm. Namely, a positive image of a firm generates trust in customers' perception (Chien & Chi, 2019, p. 4). When the firm has a good image, its customers will believe that the quality of products or services they receive from the firm is high. Consequently, it is easy for the firm to create better customer satisfaction, and meanwhile, its customers will be more willing to repurchase products or services from the same firm (Hsu, Chen & Hsueh, 2006, p. 442). Additionally, Grönroos (1984, p.39) has already emphasized that corporate impression is especially vital for service-oriented companies in his study. Similarly, the ECSI model also indicates that corporate image plays a vital role in forming customer satisfaction (Johnson, Gustafsson, Andreassen, Lervik & Cha, 2001, p. 225). In brief, a favorable corporate image has been seen as a significant factor that affects customer satisfaction and loyalty (Hsu, Chen & Hsueh, 2006, p. 442; Lai, Griffin & Babin, 2009, p. 982; Razavi, Safari, Shafie & Vandchali, 2012, pp. 589; Faria & Mendes, 2013, p. 1280-1281; Alam & Noor, 2020, p. 3). Meanwhile, extant literature has implied that corporate image positively affects customer expectations since it influences customers' perception of a company (Grönroos, 1984, p. 39). Therefore, based on the above analysis, it could conceivably be hypothesized that:

H3a: Corporate image has a positive effect on customer satisfaction.
H3b: Corporate image has a positive effect on customer expectation.

3.2.3 Customer Expectation

An amount of service quality and customer satisfaction literature and marketing theories have pointed out that perceived service quality influences customer satisfaction positively and it results from customers' comparison of what they wish to receive and what they actually perceive from companies. Namely, perceived service quality is seen as the extent and direction of the discrepancy between customers' desires and perceptions. (Grönroos, 1984, p. 39; Parasuraman, Zeithaml & Berry, 1985, p. 46; Parasuraman, Zeithaml & Berry, 1993, p. 6; Ciavolino & Dahlgaard, 2007, p. 546). Several researchers indicate that customer expectation affects customer satisfaction and retention since the confirmation of the original expectation has been

proved that it is the most dominant factor of customer satisfaction and might finally result in the repurchase of the products or services (Prakash & Lounsbury, 1984, p. 1; Querin & Göbl, 2017, p. 92). Therefore, the study concludes that customer expectation plays a crucial character in the antecedent of customer satisfaction and is also an indispensable factor in terms of customer loyalty. Thus, based on the above analysis, it could conceivably be hypothesized that:

H4: Customer expectation has a positive effect on customer satisfaction.

3.2.4 Customer Satisfaction

There has been a broad agreement in marketing and service management literature that customer satisfaction is the dominant factor influencing customers' loyalty and switching intentions, and customer loyalty further leads to profitability (Hallowell, 1996, p. 29; Bowen & Chen, 2001, p. 213; Stank, Goldsby, Vickery & Savitskie, 2003, p. 30; Wangenheim, 2003, p. 3; Mannan, Mohiuddin, Chowdhury & Sarker, 2017, p. 147). The growth of customer loyalty is the most significant driver of long-term financial performance for firms. These increased profits come from the increase of sales, less expense on the acquisition of new customers, and reduction of marketing and operational costs (Rust & Zahorik, 1993, p. 196; Jones & Sasser, Jr., 1995; McDougall & Levesque, 2000, p. 395; Bowen & Chen, 2001, p. 213). In addition, loyal customers have better resistance to counter persuasion and negative word of mouth (Stank, Goldsby, Vickery & Savitskie, 2003, p. 30). However, Bowen and Chen (2001, p. 215) have further pointed out that customer satisfaction does not always lead to customer loyalty because customer satisfaction has to reach a certain level, and subsequently, customer loyalty will increase dramatically. Even though the linkage between customer satisfaction and loyalty is not straightforward and not symmetric, the positive correlation exists between them (Wangenheim, 2003, p. 3). Consequently, based on the above analysis, it could conceivably be hypothesized that:

H5a: Customer satisfaction has a positive effect on customer loyalty intention.
H5b: Customer satisfaction has a negative effect on customer switching intention.

4. Empirical Study

The following chapter illustrates the methodologies that were applied in this study. The empirical investigation was carried out to test the research model. The quantitative method is selected to accomplish the objective of the study, reliability and validity analyses hence are conducted to confirm the collected data is reliable. Moreover, the sample distribution is presented to provide a better comprehension of the survey respondents' features.

4.1 Methodology and Research Measurement

The research executes the survey instrument adopting the following measures to investigate the raised hypotheses through customer perspective. The survey adopts the multi-item method measure to examine the proposed research model since the multi-item method measure can help average out errors and specificities that are intrinsic in a single item and subsequently increase reliability and construct validity (Diamantopoulos, Sarstedt, Fuchs, Wilczynski & Kaiser, 2012, p. 436). There are 35 questions in the survey. All items are developed by adapting the extant measures validated by the scholars concerning the Service Quality model and the ECSI model and revising questions to fit the German motorcycle end-consumer market scenario. The questions are all structured, and each question is measured on a five-point Likert scale from strongly disagree to strongly agree. Three to Seven questions are set for every variable, and the complete survey and the sources of these questions are listed in Appendix II.

4.2 Data Collection

The survey is distributed to motorcycle riders in Germany to investigate the proposed hypotheses of this study. Before the official release of the survey, a pre-test section is conducted by frequent motorcycle buyers who have sufficient service experiences in authorized motorcycle dealerships to confirm face validity, and experts' opinions are applied to check content validity. After the pilot testing, the items with dissonances of the measurement tool, incorrect wording, and misleading semantics are entirely adjusted. The survey is designed in English and reviewed several times for content validity. As the purpose of this research is concentrated on the German motorcycle end-consumer market, the survey is further translated into German and revised by

native German speakers to ensure content validity and confirm all the questions are understandable for survey participants. Subsequently, the online survey is distributed to German motorcycle riders through direct contacts and nationwide motorcycle rider groups on Facebook, MotoMunich /// Motorrad München Spontan and Motorradfahrer/innen, and the data then was collected via SAP online survey platform, Qualtrics. Furthermore, for marketing research conducted by quantitative method, the ideal range of the sample size is around 300-500 (Malhotra & Dash, 2016, p. 344). The survey received 409 responses in total from December 29, 2020, to December 31, 2020. However, only the responses from the participants who had direct service experiences in authorized motorcycle dealerships are taken into the analysis phase to ensure the measured beliefs are valid. As a result, 335 responses were considered valid at the end, indicating an adequate sample size. The profile of sample characterization including every gender, age, and preference of motorcycle brands is shown in Table 2.

Division		**Number (N)**	**Percentage (%)**
Gender	Male	260	77.62%
	Female	73	21.79%
	Not Specified	2	0.60%
	Total	335	100.00%
Age	16-20	3	0.90%
	21-30	51	15.22%
	31-40	46	13.73%
	41-50	80	23.88%
	51-60	131	39.10%
	61 and above	24	7.16%
	Total	335	100.00%
Motorcycle Brand	Aprilia	10	2.99%
	BMW Motorrad	75	22.39%
	Ducati	16	4.78%
	Harley-Davidson	28	8.36%
	Honda	44	13.13%
	Kawasaki	43	12.84%
	KTM	19	5.67%
	Suzuki	32	9.55%
	Triumph	22	6.57%
	Yamaha	30	8.96%
	Others	16	4.78%
	Total	100	100.00%

Notes: 'others' in the row of motorcycle brand includes Buell, GasGas, Hyosung, Indian, Moto Guzzi, and Royal Enfield.

Table 2: Sample Demographic Profile

4.3 Data Analysis

After gathering survey responses, the collected data is analyzed by partial least square-structural equation modeling (PLS-SEM) to test the research model. PLS-SEM 3.0 has

a solution with small sample size thanks to the path modeling technique, and it is the ideal choice when the research purpose is through investigating theoretical extensions of extant theories to understand growing complexity (Hair, Risher, Sarstedt & Ringle, 2019, p. 5), PLS-SEM 3.0 hence is chosen in this study.

4.3.1 Measurement Model Assessment: Reliability and Validity Analysis

PLS-SEM assessment is a two-step process, including assessments of the measurement model and the structural model. The measurement model is aimed to examine the measures' reliability and validity based on particular criteria related to reflective measurement model specification (Hair, Sarstedt & Ringle, 2011, p. 144; Hair, Risher, Sarstedt & Ringle, 2019, p. 4). Reliability includes internal consistency reliability and indicator reliability, and validity contains convergent validity and discriminant validity (Hair, Hult, Ringle & Sarstedt, 2017, p. 133). Although the measurement scale of this study is adapted from extant literature, the outcome might be very different from the present research since the empirical study is applied in a different market sector and cultural context. Therefore, it is necessary to adopt reliability and validity analysis to examine the internal consistency of each item from the same construct and test whether the research model evaluates what it is supposed to measure.

Table 3 and 4 below report the results of reliability and validity analysis. Factor loadings of each construct are all higher than 0.50, representing good indicator reliability, and Cronbach's alpha and composite reliability (CR) are all greater than 0.70, showing good internal consistency (Hair, Black, Babin & Anderson, 2014, p. 145; Hair, Risher, Sarstedt & Ringle, 2019, p. 12). The AVEs of all construct meets the minimum acceptable value, 0.50, indicating good convergent validity (Hair, Risher, Sarstedt & Ringle, 2019, p. 13). Meanwhile, the squared roots of AVEs are greater than all relevant correlation coefficients, suggesting good discriminant validity (Hair, Ringle & Sarstedt, 2011, p. 145). Therefore, according to the statistical analysis based on extant literature, the overall reliability and validity of this study is satisfactory, which implies that the constructs from the measurement model are statistically significant and distinct.

Construct	Items	Outer Loadings	Cronbach's Alpha	Composite Reliability	AVE
Operational Logistics Service Quality	OLSQ1	0.67	0.80	0.86	0.50
	OLSQ2	0.79			
	OLSQ3	0.72			
	OLSQ4	0.50			
	OLSQ5	0.74			
	OLSQ6	0.81			
Relational Logistics Service Quality	RLSQ1	0.88	0.92	0.93	0.67
	RLSQ2	0.85			
	RLSQ3	0.84			
	RLSQ4	0.81			
	RLSQ5	0.85			
	RLSQ6	0.79			
	RLSQ7	0.71			
Corporate Image	CI1	0.87	0.90	0.93	0.77
	CI2	0.91			
	CI3	0.90			
	CI4	0.82			
Customer Expectation	CE1	0.74	0.74	0.83	0.56
	CE2	0.72			
	CE3	0.81			
	CE4	0.72			
Customer Satisfaction	CS1	0.93	0.92	0.94	0.77
	CS2	0.95			
	CS3	0.93			
	CS4	0.87			
	CS5	0.70			
Loyalty Intention	LI1	0.69	0.93	0.94	0.74
	LI2	0.84			
	LI3	0.90			
	LI4	0.92			
	LI5	0.93			
	LI6	0.84			
Switching Intention	SI1	0.83	0.75	0.85	0.65
	SI2	0.77			
	SI3	0.81			

Table 3: Reliability and Validity Analysis

	CE	CI	LI	CS	OLSQ	RLSQ	SI
CE	**0.75**						
CI	0.34	**0.88**					
LI	0.35	0.82	**0.86**				
CS	0.29	0.86	0.84	**0.88**			
OLSQ	0.34	0.61	0.55	0.60	**0.71**		
RLSQ	0.33	0.80	0.77	0.81	0.61	**0.82**	
SI	-0.21	-0.60	-0.68	-0.67	-0.35	-0.56	**0.80**

Table 4: Discriminant Validity Analysis by the Fornell-Larcker Criterion

4.3.2 Structural Model Assessment: Hypotheses Testing Using all Data

The path analysis is applied to assess structural model. Following the suggestion of current literature, this study chose bootstrapping calculation as a resampling technique and used the minimum number of bootstrap samples, 5000, when evaluating the path significant levels (Hair, Risher, Sarstedt & Ringle, 2019, p. 17). The primary assessment criteria for the structural model are the coefficient of determination (R^2), the statistical significance of the t-statistics, and the relevance of the path coefficient

(β). The R^2 statistics describe the explanatory power of the structural model and is also named as in-sample predict power (Hair, Risher, Sarstedt & Ringle, 2019, p.17-18). The R^2 ranges from 0 to 1, with a higher value showing a better explanatory power. Moreover, the individual path coefficient can be explained as a standardized beta coefficient (β) of ordinary least squares regressions. The path coefficient (β) with positive values is viewed as having a positive correlation between the constructs. In other words, the larger the significant weights of the constructs are, the greater correlations are (Hair, Ringle & Sarstedt, 2011, p. 147).

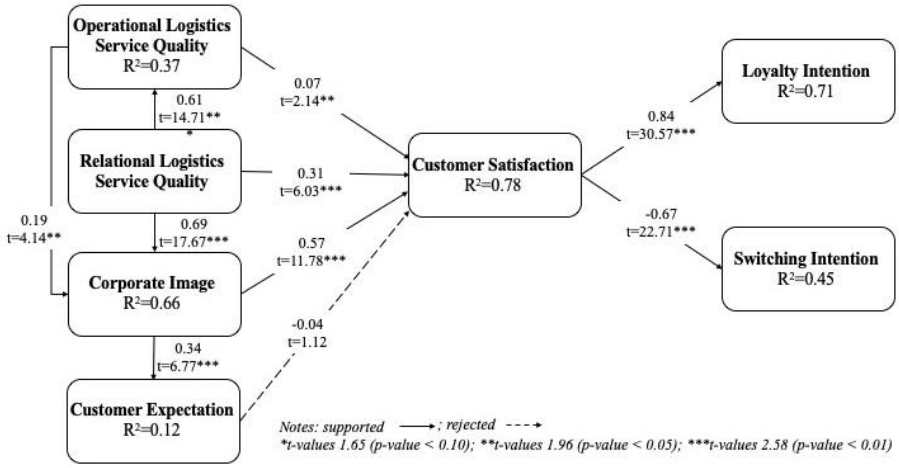

Figure 4: The Result of the Structural Model Assessment

Figure 4 presents that the model explains variances of operational logistics service quality, corporate image, and customer expectation are 37%, 66%, and 12%, respectively. Concerning the specific relationships among customer satisfaction and its antecedents, the R^2 measures for customer satisfaction (R^2=78%), which meets the requirement of the ECSI Technical Committee that R^2 measure of customer satisfaction should be at least greater than 65% (ECSI Committee, 1998, p. 20). The entire research model explains 71% of the variances in customer intention to be loyal, and the model is significant but less successful in recovering the switching intention (R^2=45%).

Hypothesis Path	Path Coefficient (β)	T Statistics sig.	Research Result
H1 operational logistics service quality → customer satisfaction	0.07	2.14**	Supported
H1a operational logistics service quality → corporate image	0.19	4.14***	Supported
H2 relational logistics service quality → customer satisfaction	0.31	6.03***	Supported
H2a relational logistics service quality → operational logistics service quality	0.61	14.71***	Supported
H2b relational logistics service quality → corporate image	0.69	17.67***	Supported
H3 corporate image → customer satisfaction	0.57	11.78***	Supported
H3a corporate image → customer expectation	0.34	6.77***	Supported
H4 customer expectation → customer satisfaction	-0.04	1.12	Not supported
H5 customer satisfaction → loyalty intention	0.84	30.57***	Supported
H5a customer satisfaction → switching intention	-0.67	22.71***	Supported

*Notes: t-values for two-tailed. *t-values 1.65 (sig. level = 10%); **t-values 1.96 (sig. level = 5%); ***t-values 2.58 (sig. level = 1%)*

Table 5: Path Analysis

As shown in Table 5, the hypotheses postulated in the study are all supported by the path analysis results except H4 (customer expectation → customer satisfaction). Operational logistics service quality, relational logistics service quality, and corporate image have direct and significant impacts on customer satisfaction in the German motorcycle end-consumer market. Particularly, corporate image is found to have the strongest influence on customer satisfaction. In terms of the correlations between customer satisfaction and future intentions, the path analysis results indicate that customer satisfaction has direct and crucial impacts on loyalty intention and switching intention, respectively. That is to say, when customers are satisfied, they have greater intentions to be loyal to stay with their authorized motorcycle dealers for future businesses, and at the meantime, have lower intentions to switch to others. Moreover, positive relations among four determinants of customer satisfaction are observed. First, relational logistics service quality is found to have a significant impact on operational logistics service quality. Secondly, the positive correlations between logistics service quality and corporate image are observed, referring to that operational and relational logistics service quality are crucial factors in forming corporate image. Last, corporate image has a critical influence on customer expectation. Namely, corporate image can influence customers' perception when they perceive their authorized motorcycle dealers.

5. Findings and Discussion

Following the assessment of the proposed hypotheses, this chapter aims to discuss the key findings based on the results of the hypotheses and the literature findings.

5.1 Critical Determinants of Customer Satisfaction and Loyalty Intention

First of all, relational logistics service quality is a significant determinant of customer satisfaction. The finding indicates that relational logistics service quality is a more decisive factor than operational logistics service quality regarding affecting customer satisfaction. The result is consistent with the findings noted by Stank, Goldsby, Vickery, and Savitskie (2003, p. 43). The researchers found that relational logistics service quality has a significant impact on achieving customer satisfaction and is seen as the key success in delivering customer satisfaction (McDougall & Levesque, 2000, p. 403). The result confirms that relational logistics service quality has a strong and direct impact on customer satisfaction, and when the quality of relational logistics service meets customers' service requirements and maintains good customer relationships, operational logistics service quality becomes less important. Therefore, motorcycle brands and the dealerships have to focus on relational logistics performance, namely, customer service, to create a higher customer satisfaction level.

Secondly, operational logistics service quality is also an important determinant of customer satisfaction. As theorized by Stank, Goldsby, and Vickery (1999, p. 440), operational logistics service quality is found to be significant and has a positive impact on customer satisfaction for the current study. In addition, the findings point out that the operational logistics service quality to customer satisfaction path is positive provides evidence that improvements in operational logistics performance generate a greater level of customer satisfaction. Thus, the findings are in agreement with Mentzer, Flint, and Hult's research results (2001, p. 97), which confirmed that it is essential for motorcycle brands and the dealerships to provide excellent operational logistics performance in physical distribution service.

Furthermore, similar to the customer satisfaction study by using the ECSI model from Kristensen, Martensen, and Gronholdt (2010, p. 1010), the findings of the current study further confirm the positive correlation between corporate image and customer

satisfaction. Apart from operational and relational logistics service quality, the corporate image also significantly impacts customer satisfaction. The current findings imply that customers may have a higher customer satisfaction level when motorcycle brands and the dealerships own favorable images towards the public. Meanwhile, it is worthwhile to mention that it is surprising that corporate image is by far the most important factor when it comes to the generation of customer satisfaction, indicating that besides operational and relational logistics performance, corporate image is another direct and significant driver of customer satisfaction in the German motorcycle end-consumer market.

However, customer expectation does not play a crucial role in the formation of customer satisfaction. The findings of the current study indicate that the negative influence of customer expectation ($\beta = -0.04$, $t = 1.10$) on customer satisfaction. As a result, the proposed hypothesis of the study is not supported by the results of the empirical findings. However, this research outcome is consistent with other customer satisfaction studies from Ciavolino, and Dahlgaard (2007, p. 553) and Kristensen, Martensen, and Gronholdt (2010, p. 1010), which also applied the ECSI model to explain the formation of customer satisfaction and loyalty in the service industry. The possible interpretations why the effect of customer expectation is as low as this study observes is probably logistics service quality in the German motorcycle end-consumer market is an uncomplicated service procedure, the quality of which is easy to evaluate. Moreover, customer expectation might be merely a comparison standard for customers when they evaluate the received products or services instead of having a direct impact on customer satisfaction. This perspective is in agreement with Oliver’s expectation disconfirmation theory (1980, p. 460) and Parasuraman, Zeithaml, and Berry's zone of tolerance theory (1993, p. 1). Therefore, since customer expectation has a decreasing impact on customer satisfaction level, it seems that motorcycle brands and the dealerships should pay more intention not to raise their customers' expectations too high. Interestingly, it is a better strategy for motorcycle service providers to reduce customers' expectations a little and try to deliver more than customers expected (Ciavolino & Dahlgaard, 2007, p. 553).

Fifth, the researchers have claimed that customer satisfaction is a dominant factor to form up customer loyalty intention and decrease switching intention either in

marketing or service management literature (Bowen & Chen, 2001, p. 213; Wangenheim, 2003, p. 3; Mannan, Mohiuddin, Chowdhury & Sarker, 2017, p. 147) That is to say, the relationship between customer satisfaction and customers' future intentions has been identified (McDougall & Levesque, 2000, p. 395). In agreement with the previous researches, the current study proves that customer satisfaction has a direct and strong impact on loyalty intention and has an inversely significant impact on switching intention. Namely, when customers are satisfied with motorcycle brands and their dealerships, they have greater intentions to be loyal, and on the other hand, have lower intentions to switch to other competitors. Moreover, A loyal customer can bring several benefits to motorcycle brands and dealerships, for example, positive word-of-mouth, customers have a higher resistance to counter persuasions, and less expense on the acquisition of new customers (Stank, Goldsby, Vickery & Savitskie, 2003, p. 30). Therefore, based on the findings, it suggests that the higher level of customer satisfaction is, the greater possibility for customers to be loyal and less intention to switch.

Finally, yet importantly, since the research model of this study is a linear structural equation, customer satisfaction functions as an intermediary between its antecedents and consequences in the equation. The findings of the current study have confirmed that operational logistics service quality, relational logistics service quality, and corporate image, respectively, have direct and significant effects on customer satisfaction. Subsequently, customer satisfaction has direct and strong effects on customer loyalty intention and switching intentions. As a result, based on pieces of evidence, operational and relational logistics service quality, and corporate image influence customer satisfaction which, in turn, affect loyalty intention and switching intention. Namely, none of the three factors have direct effects on loyalty and switching intentions.

5.2 Key Facts of Interrelationships between Four Antecedents of Customer Satisfaction

First, consistent with the logistics performance in creating customer loyalty study from Stank, Goldsby, Vickery, and Savitskie (2003, p. 43) and Davis (2006, p. 136). The findings of the current study further confirm that relational logistics service quality has a positive and strong impact on operational logistics service quality. Apparently, the

results support the argument that when contact employees in authorized motorcycle dealerships develop working relationships with customers, the dealerships can obtain more about the customers' desires and needs regarding operational logistics service, and therefore, align processes to meet customer needs. In addition, it is interesting to note that although relational logistics service quality can help achieve better performance in operational logistics, it still can not compensate for temporary problems or overall low service quality that happened in operational logistics performance.

Secondly, as theorized by Grönroos (1984, p.39), operational and relational logistics service quality are both found to have directly positive correlations to corporate image, respectively. According to the findings of the current study, the quality of operational and relational logistics performance are essential factors in the formation of corporate image. Interestingly, relational logistics service quality has a stronger impact on corporate image comparing to operational dimension. Even though the results of the empirical study in the previous chapter reveal that corporate image is the strongest factor influencing customer satisfaction, operational and relational logistics service quality may be the fundamental factors in terms of influencing customer satisfaction, especially the relational dimension, since both of them play prominent roles to build up a corporate image.

Lastly, corporate image influences customers’ expectation when they interact with motorcycle brands and dealerships. The findings imply that there is a positive correlation between corporate image and customer expectation. In agreement with the postulation of the service quality study, Grönroos (1984, p. 39) hypothesized that customer expectation is influenced by corporate image. The results of the current study confirm the hypothesis from Grönroos and even further find that corporate image has a direct and significant impact on customer expectation. Therefore, corporate image is an unignorable factor in the formation of customer expectation.

6. Conclusion and Outlook

After the assessment of all interrelationships among seven variables, the study sorts out that relational logistics service quality may be the most crucial factor in achieving customer satisfaction and loyalty intention in the end-consumer market of German motorcycle industry, even though the corporate image was found to be the strongest factor affecting satisfaction directly. This key conclusion is based on the reasons that relational logistics service quality not only has significant impacts on customer satisfaction which, in turn, indirectly on loyalty, but also is the critical factor to improve operational logistics performance and the dominant role to build up the corporate image. The study demonstrates the results that support the findings of a significant amount of the previous research in the field of logistics service quality in creating customer satisfaction and loyalty. Thus, along with the past research and the current findings of the study, it is possible now to provide some managerial insights for motorcycle brands operating in the German motorcycle market and their authorized dealership partners involved in customer acquisition and maintenance. Especially, it is important to note that motorcycle brands (OEMs) are the producers of products, and dealerships are the actual service providers towards customers. Thus, the managerial implications mentioned below need the efforts from both sides to enhance logistics service quality and further lead to higher customer satisfaction and loyalty intention.

6.1 Managerial Implication

First, based on the findings of the current study, it is crucial for the motorcycle brands to provide qualified physical distribution service when their customers place orders in authorized motorcycle dealerships since operational logistics performance is a service imperative in customers' eyes. Besides, comparing to relational logistics service quality, the boost in operational logistics performance can enhance customer satisfaction level in the short term. Therefore, strengthening operational logistics service quality is essential for motorcycle brands and the dealerships. An excellent physical distribution service includes the availability of products, sufficient information of products (e.g., the information about the products that customers want to order is available and adequate), effective and efficient order process, undamaged condition of orders, timeliness (e.g., the orders arrive on the promised date), and order quality (e.g., ordered products work well and meet technical requirements). Most

motorcycle brands perform quite well on the aforementioned physical distribution service dimensions. However, their order processes are not that effective and efficient. To improve the efficiency of the order process, motorcycle brands should cooperate with their dealerships closely. More specifically, besides ordering products in physical dealer shops, motorcycle brands should enhance the integrity of digital services so that customers could also purchase spare parts and accessories online and then either pick them up in nearby dealer shops or receive them at home. Meanwhile, motorcycle brands should integrate their dealerships' service appointment systems to the brands' online stores since customers may need professional mechanical help to install the products they have ordered online. This one-stop service is beneficial not only for customers to enjoy an efficient purchase process but also for dealerships since this strategy keeps customers in the value chain.

Secondly, it is worthwhile to mention that relational logistics performance has been verified as increasingly important as well as the findings of the current study have proved that relational logistics service quality has a stronger impact on customer satisfaction and loyalty intention than the operational dimension. Moreover, relational logistics service quality has been proved a dominant factor in improving operational logistics performance in this study. Therefore, relational logistics service quality is the key factor for dealers to enhance service provider-buyer relation to the level of intimacy through marketing customer service to stand out from other competitors when they provide similar operational logistics quality. On the other hand, relational logistics service quality is also a means for motorcycle brands to improve operational logistics performance based on the customer data collected by dealers.

Improving relational logistics service quality is a method for motorcycle brands and dealerships to understand customers' requirements better and build up closer relationships with customers. To do so, the qualification of contact employees in shops and the development of customer-centric customer service are essential moves for motorcycle dealerships. A qualified contact employee should pay attention to customers' needs and individual situations through interaction, equip with professional knowledge about products, be able to solve problems creating by products or services, and ultimately, work to develop long-term relationships with customers. Particularly, the real benefits of establishing long-term customer relationships for motorcycle

dealerships are saving expenses on new customer acquisition, gaining insights regarding customer needs and wants to tailor operational offerings to be more responsive and meet specific requirements, and ensuring rapid service recovery when operational logistics activity falters.

Meanwhile, authorized motorcycle dealerships should create added values beyond the point of purchase for customers to maintain customer relationships. For example, motorcycle brands could sponsor their dealerships to organize free workshops such as basic motorcycle maintenance knowledge and the introduction of practical add-on motorcycle gears. Customers not only create more pleasant customer experiences in dealerships but also may start to affiliate their success with the products and services. Eventually, it is crucial for dealerships to collect customer feedback to understand customers' desires and provide better customer-oriented service. Authorized motorcycle dealerships could collect customer feedbacks through direct communication and service marketing tools, such as Net Promoter Score (NPS) and online surveys. However, in terms of the usage of service marketing tools, it relies on the engagement of motorcycle brands so that the systems applied in every dealership and collected data are consistent. Customer feedback is beneficial not only for dealerships to improve customer service quality and shorten the distance between them and customers but also for motorcycle brands since the brands could apply these customer data to think one step ahead for refinement of operational logistics performance and future product development fit customers' needs.

Last but not least, the findings of the current study suggest that motorcycle brands and dealership partner should build up a favorable corporate image in customers' minds since it has the strongest and direct impact on increasing customer satisfaction level which, in turn, enhancing loyalty intention. Meanwhile, according to the findings, operational and relational logistics service quality are decisive factors to the formation of corporate image, especially the relational dimension. In other words, motorcycle brands and dealerships should provide qualified physical distribution service and carefully focus on customer service performance since they are the dominant factors in terms of creating a positive corporate impression. Building a positive corporate image towards the public is not only a managerial strategy to maintain current clients but also a strategic method to acquire new customers. For example, nowadays, people

are used to checking unfiltered reviews and discussions online when looking for a new service provider, and when the potential service provider has a high rating in general, it will increase new customers' willingness to give it a try and expectations. However, motorcycle brands and dealers should carefully pay attention not to exaggerating self-images and raising their customers' expectations too high because the study has revealed that customer expectation has negative impacts on satisfaction level and loyalty intention in the previous discussion.

In brief, based on the findings aforementioned, the results of the current study should be able to strengthen the understandings of the character of logistics service quality and corporate image in achieving satisfaction and loyalty of German motorcycle customers in the end-consumer market to create a win-win situation for motorcycle brands and their dealership partners. Further, the results of the study have revealed the intimacy of operational and relational logistics service quality and corporate image. Motorcycle brands and dealership partners should be aware that good relational logistics performance is not only a significant driver for achieving higher satisfaction level and loyalty intention but also is the prerequisite to success on other two factors.

6.2 Limitation and Future Research

In conclusion, the results of this study contribute several meaningful perspectives to the current literature. Firstly, the empirical findings foster a deeper understanding of the effectiveness of logistics service quality to satisfaction level and loyalty intention and its intimacy to corporate image in the German motorcycle end-consumer market. Secondly, the advantage of this study is the integration of the Service Quality model and the ECSI model to investigate customer satisfaction and loyalty intention, and the empirical findings have confirmed that the integrated model has better explanatory power than individually.

Furthermore, a few significant limitations are necessary to be brought up. First, there might be other factors that affect customer loyalty intention in the German motorcycle end-consumer market. Secondly, the loyalty intention of the study narrowly refers to dealer-loyalty. However, the intimacy between motorcycle brands and dealerships has been verified, namely, dealerships act as the face for motorcycle brands to directly interact with customers. Therefore, when customers are loyal to the dealerships, it may

reflect that customers are also loyal to the brands to some degree. Lastly, this study has only examined the German motorcycle industry, but customers' behavioral loyalty intentions may be different between various cultural contexts and industries. Thus, it is important to test the generalizability of these findings to other cultural contexts and across other industries.

Meanwhile, it is noteworthy that the study is focusing on the currently dominant traditional motorcycle business model with a multistage sales process. In the near future, digital disruption will support additional digital business models in the motorcycle industry, which are not reflected in this paper (Glanzmann & Jung, 2018).

Eventually, besides the research limitations, this study has found out several interesting questions that are worth exploring further. Therefore, there are three recommendations for future research. First, although the study has shown that logistics service quality is a strategy to achieve customer satisfaction and loyalty in the German motorcycle end-consumer market, the loyalty in this study narrowly refers to dealer-loyalty. Thus, it would be interesting to investigate further whether dealer-loyalty will lead to brand-loyalty or not, and the interrelationship between each other since dealerships are the actual touchpoint towards customers for motorcycle brands. Secondly, the research model of the current study is focused on the impact of logistics service quality on its consequences; however, there is a need to know what factors influence the quality of logistics performance. Finally, the theoretical models in the field of service quality and customer satisfaction are not updated for decades. Although this phenomenon represents that these theoretical models are convincible and reliable in the academic area, it is necessary for the practice to reinvent since the application of digitalization is an irresistible trend in the service-oriented sector. Therefore, it would be appropriate to investigate new academic models either for service quality or customer satisfaction field.

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Appendix I

Summary of Digital Service Offered by Motorcycle Brands in Germany (BMW Motorrad, 2021; Harley Davidson, 2021; Honda, 2021; Yamaha, 2021; Kawasaki, 2021; Suzuki, 2021; Ducati, 2021; KTM, 2021; Triumph Motorräder, 2021).

Brand	Service Feature & Products Category	3PL	Delivery Lead Time	Options for Pick-Up
BMW Motorrad	1. Shows availability of products in nearby BMW Motorrad stores. 2. Clothing, accessories, equipment, parts, and maintenance kits. 3. Shipping cost depends on the weights of products.	DHL	Approx. 5 working days.	1. Assigned address. 2. BMW Motorrad stores.
Harley Davidson	1. Visualizes selected parts on the desired motorcycle. 2. Clothing, accessories, equipment, parts, and maintenance kits.	N/A	N/A	N/A
Honda	1. Clothing, accessories, equipment, parts, and maintenance kits.	N/A	N/A	N/A
Yamaha	1. Shows availability of products on the website. 2. Motorcycles, clothing, accessories, equipment, parts, and maintenance kits. 3. Free shipping over 150€. 4. Extra shipping fees, 150€, when ordering a motorcycle.	DHL DPD	1. All products: Approx. 1-2 working days. 2. Motorcycles: Approx. 5-6 working days.	1. Assigned address for all products. 2. The motorcycle must be sent to a dealer shop nearby.
Kawasaki	1. Clothing, accessories, equipment, parts, and maintenance kits.	N/A	N/A	N/A
Suzuki	1. Clothing, accessories, equipment, parts, and maintenance kits.	N/A	N/A	N/A

Ducati	1. Shows availability of products on the website. 2. Clothing, accessories, equipment, parts, and maintenance kits. 3. Shipping cost depends on the weights of products. 4. Free shipping over 190€.	N/A	Approx. 3-5 working days.	Assigned address.
KTM	1. Shows availability of products on the website. 2. Clothing, accessories, equipment, parts. 3. Free shipping over 100€.	DHL	Approx. 3-10 working days.	Assigned address.
Triumph	1. Shows current products on the website (customers could only purchase products in dealerships). 2. Clothing, accessories.	N/A	N/A	N/A

Appendix II

Questionnaire (English and German Version)

Based on your own experience, please rate your primary authorized motorcycle dealer on the following dimensions: Logistics service performance, expectation, corporate image, the level of your satisfaction, and finally, your loyalty intention. Use a five-point scale where 1= strongly disagree, 2= somewhat disagree, 3= neutral, 4= somewhat agree, 5= strongly agree

Basierend auf Ihrer persönlichen Erfahrung bewerten Sie bitte Ihren bevorzugten Motorrad-Vertragshändler in den folgenden Punkten: Logistische Performance, Kundenberatung, Firmenimage, den Grad Ihrer persönlichen Zufriedenheit, und schließlich die Absicht Ihrer Loyalität. Benutzen Sie bitte eine 5-Punkte-Skala: 1= stimme überhaupt nicht zu, 2= stimme nicht zu, 3= Stimme weder zu noch lehne ich ab, 4= stimme zu, 5= stimme voll und ganz zu.

Age *Alter*

- ☐ 16 – 20 years old *Jahre*
- ☐ 21 – 30 years old *Jahre*
- ☐ 31 – 40 years old *Jahre*
- ☐ 41 – 50 years old *Jahre*
- ☐ 51 – 60 years old *Jahre*
- ☐ 61 years old and above *Jahre und darüber*

Gender *Geschlecht*

- ☐ Male *männlich*
- ☐ Female *weiblich*
- ☐ Not specified *divers*

The Brand of Your Motorcycle *Die Marke Ihres Motorrads*

- ☐ Aprilia
- ☐ BMW Motorrad
- ☐ Ducati
- ☐ Harley-Davidson

- ☐ Honda
- ☐ Kawasaki
- ☐ KTM
- ☐ Suzuki
- ☐ Triumph
- ☐ Yamaha
- ☐ Others_____ *Andere Marke*_____

Variable	Item	Source
Operational Logistics Service Quality (OLSQ)	Q1 The information about the product you want to order is available and adequate. *(Die Information über das Produkt, das Sie bestellen möchten, ist verfügbar und angemessen.)* Q2 Ordering procedures are effective and efficient. *(Bestellabläufe sind effektiv und effizient zu benutzen.)* Q3 Products ordered from the dealer meet technical requirements. *(Produktbestellungen beim Händler erfüllen die technischen Erwartungen.*) Q4 Order received from logistics services is undamaged. *(Die erhaltene Bestellung ist nicht beschädigt.)* Q5 The time between placing an order and receiving delivery is short. *(Die Zeit zwischen Bestellung und Auslieferung der Ware ist kurz.)* Q6 Deliveries arrive on the date promised. (*Die Lieferung kommt pünktlich zum angekündigten Termin.*)	Mentzer, Flint & Hult, 2001; Stank, Goldsby, Vickery & Savitskie, 2003
Relational Logistics Service Quality (RLSQ)	Q7 Contact employees pay attention on me and make efforts to understand my situation well. *(Serviceberater kümmern sich um mich und bemühen sich meine Situation zu verstehen.)* Q8 Contact employees cooperate with me to help me make order processing more efficient. *(Serviceberater helfen mir dabei den Bestellvorgang möglichst effizient abzuschließen.)* Q9 Contact employees are able to solve product/ service problems. *(Serviceberater sind in der Lage, Produkt-bzw Serviceprobleme zu lösen.)* Q10 Contact employees' knowledge or experience about the product/ service is sufficient *(Serviceberater haben genügend Wissen und Erfahrung bezüglich des Produkts/ Service.)*	Grönroos, 1984; Mentzer, Flint & Hult, 2001; Stank, Goldsby, Vickery & Savitskie, 2003; Jang, Marlow, & Mitroussi, 2013

	Q11 Contact employees work to develop a long-term relationship with me. *(Serviceberater arbeiten daran eine langfristige Geschäftsbeziehung mit mir zu entwickeln.)* Q12 When contact employees' way of handling the contacts with customers is customer-oriented and service-minded, it will compensate for temporary problems with the physical logistics service. *(Durch den kunden-und serviceorientierten Umgang des Serviceberaters kann eine vorübergehende geringere Servicequalität der Warenlieferung (z.B. Schäden, Verspätung, falsche Lieferung) ausgeglichen werden.)* Q13 When contact employees' way of handling the contacts with customers is customer-oriented and service-minded, it will compensate for an overall lower service quality of physical logistics service. *(Durch den kunden-und serviceorientierten Umgang des Serviceberaters kann eine insgesamt geringere Servicequalität der Warenlieferung (z.B. Schäden, Verspätung, falsche Lieferung) ausgeglichen warden.)*	
Customer Expectation (CE)	Q14 I expected to receive quality products and services. *(Ich habe erwartet Qualitätsprodukte und Qualitätsservice zu erhalten.)* Q15 I expected to receive my order on the promised date. *(Ich habe erwartet meine Bestellung zum versprochenen Termin zu erhalten.)* Q16 I expected the manner of the contact employees to be positive. *(Ich habe eine positive Einstellung der Serviceberater erwartet.)* Q17 I expected the contact employees give me an individualized attention. *(Ich habe erwartet, dass Serviceberater mir eine individuelle Aufmerksamkeit zukommen lassen.)*	Revilla-Camacho, Cossío-Silva & Palacios-Florencio, 2016
Corporate Image (CI)	Q18 I have always had a good impression of my primary motorcycle dealer. *(Ich hatte immer einen guten Eindruck von meinem bevorzugten Vertragshändler.)* Q19 In my opinion, my primary motorcycle dealer has a good image in the minds of customers. *(Meiner Meinung nach hat mein bevorzugter Vertragshändler ein gutes Image in der Vorstellung der Kunden.)* Q20 My primary motorcycle dealer is known to offer excellent customer service. *(Mein bevorzugter Vertragshändler ist bekannt für ausgezeichneten Kundendienst.)*	Nguyen & Leblanc, 2001; Ciavolino & Dahlgaard, 2007

	Q21 My primary motorcycle dealer is known to offer efficient physical logistics service. *(Mein bevorzugter Vertragshändler ist bekannt für effiziente Warenlieferung.)*	
Customer Satisfaction (CS)	Q22 What is your general impression of the service your primary motorcycle dealer provides? *(Was ist Ihr allgemeiner Eindruck vom Service ihres bevorzugten Motorrad-Vertragshändlers?)* Q23 How satisfied are you with your primary motorcycle dealer's service? *(Wie zufrieden sind Sie mit dem Service Ihres bevorzugten Motorrad-Vertragshändlers?)* Q24 I am delighted with my overall relationship with my primary motorcycle dealer. *(Ich bin insgesamt zufrieden mit der Beziehung zu meinem bevorzugten Motorrad-Vertragshändler.)* Q25 I wish more of other authorized motorcycle dealers were like this one. *(Ich wünsche mir, dass es mehr Vertragshändler wie meinen geben würde.)* Q26 There are always some problems with my primary motorcycle dealer. (**reverse scale**) *(Es gibt immer einige Probleme mit meinem bevorzugten Motorrad-Vertragshändler.)*	Mentzer, Flint & Hult, 2001; Stank, Goldsby, Vickery & Savitskie, 2003
Loyalty Intention (LI)	Q27 The relationship that I have with my primary motorcycle dealer is something I am very committed to. *(Die Beziehung zu meinem bevorzugten Motorrad-Vertragshändler ist etwas, dem ich mich sehr verpflichtet fühle.)* Q28 The relationship that I have with my primary motorcycle dealer is something I intend to maintain indefinitely. *(Die Beziehung zu meinem bevorzugten Motorrad-Vertragshändler ist etwas, was ich auf unbestimmte Zeit aufrecht erhalten will.)* Q29 I would consider my primary motorcycle dealer as my first choice to buy when I need motorcycle services or spare parts. *(Ich würde meinen bevorzugten Motorrad-Vertragshändler als erste Wahl betrachten, wenn ich Motorradservice oder Ersatzteile benötige.)* Q30 I would say positive things about my primary motorcycle dealer to other people. *(Ich würde über meinen bevorzugten Motorrad-Vertragshändler zu anderen Personen positiv sprechen.)* Q31 I would recommend my primary motorcycle dealer to someone who seeks my advice.	Parasuraman, Zeithaml & Berry, 1996; Stank, Goldsby, Vickery & Savitskie, 2003

	(Ich würde meinen bevorzugten Motorrad-Vertragshändler empfehlen, wenn mich jemand um Rat fragt.) Q32 I would do more business with my primary motorcycle dealer in the next few years. *(Ich würde in den nächsten Jahren mehr Geschäfte mit meinem bevorzugten Motorrad-Vertragshändler machen.)*	
Switching Intention (SI)	Q33 I would do less business with my primary motorcycle dealer in the next few years. *(Ich würde in den nächsten Jahren mit meinem bevorzugten Motorrad-Vertragshändler weniger Geschäfte machen.)* Q34 I would switch to another motorcycle dealer if I experience a problem with my current dealer. *(Ich würde zu anderen Motorrad-Vertragshändlern wechseln, falls sich Probleme mit meinem bevorzugten Motorrad-Vertragshändler ergeben.)* Q35 I would take some of my business to a competitor (other authorized motorcycle dealer shops) that offers better service. *(Ich würde einige Geschäfte an einen Mitbewerber (anderer Motorrad-Vertragshändler) übergeben, falls dort ein besserer Service angeboten wird.)*	Parasuraman, Zeithaml & Berry, 1996; Yap & Sweeney, 2007