



Tomas Bata University in Zlín
Faculty of Management and Economics

Doctoral Thesis

**Digital channels and B2B customer experience
among industrial companies**

Zákaznická zkušenost s digitálními kanály u průmyslových firem

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ABSTRACT

In the digital era, companies can get lost in the variety of available tools and tactics now at their disposal. Industry 4.0. and digital transformation change B2B industrial buyer-seller relationships, making them customer-centric. To deliver a good customer experience, companies must understand the values of their buyers and develop an effective communication strategy with a clear and consistent value proposition. The study uses primary data collected from 143 B2B industrial companies in Germany to identify which customer values create a positive B2B buyer's experience. This exploratory, descriptive study builds a theoretical model upon the existing technology adoption theories, literature review, and expert interviews. The study offers some important insights into the theory of technology adoption applied to B2B customer experience. The online survey analysis conducted with PLS-SEM highlights the importance of information quality, perceived ease of use, perceived usefulness, and service quality for B2B communication. The study contributes to both theory and practice and partially confirms previous observations from the technology adoption models. In line with previous research, the results reveal the importance of perceived ease of use, perceived enjoyment and service quality for perceived usefulness, service quality and information quality for satisfaction and information quality for perceived ease of use. However, contrary to expectations, the study did not confirm a positive relationship between satisfaction and customer loyalty, which were used to operationalise customer experience. At the same time, the study provides the first comprehensive assessment of customer engagement from two points of view – end-user-to-buyer and buyer-to-customer. Herewith, it attempts to assess the complexity of a communication process in B2B buyer-seller relationships. Furthermore, the study reveals the importance of entertaining and easy-structured information, which indirectly influences the perception of information quality. The growth of multi-channel and omnipresent marketing makes it challenging to provide qualitative and consistent information throughout the whole range of communication channels. The analysis of communication channels at different customer journey stages demonstrates that industrial buyers use WOM and recommendations in the pre-purchase stage and prefer highly customised and direct communication when business relationships are established. The study contributes to the literature by expanding the current understanding of ease of use and customer engagement and revealing new insight about tools and values customers prize the most in buyer-seller communication.

ABSTRAKT

V digitálním věku se mohou společnosti snadno ztratit v široké nabídce nástrojů a taktik, které jsou jim nyní k dispozici. Průmysl 4.0. a digitální transformace mění dodavatelsko-odběratelské vztahy B2B v průmyslu a zaměřuje je na zákazníka. K dosažení dobrých zákaznických zkušeností musí společnosti porozumět hodnotám svých zákazníků a vyvíjet efektivní komunikační strategii s jasnou a konzistentní nabízenou hodnotou. Tato studie používá primární data shromážděná od 143 průmyslových B2B společností v Německu k identifikaci zákaznických hodnot vytvářejících pozitivní B2B zkušenost zákazníka. Tato výzkumná popisná studie vytváří teoretický model na základě stávajících teorií přijímání technologií, řešerší z dostupné literatury a rozhovorů s odborníky. Nabízí některé důležité vhledy do teorie přijímání technologií aplikované na zákaznickou zkušenost B2B. Analýza online průzkumu provedená s PLS-SEM zdůrazňuje důležitost kvality informací, vnímané snadnosti použití, vnímané užitečnosti a kvality služeb pro komunikaci B2B. Tato práce přispívá k teoretickým i praktickým poznatkům a částečně potvrzuje předchozí pozorování založená na modelech přijímání technologií. V souladu s předchozím výzkumem výsledky ukazují důležitost vnímané snadnosti použití, vnímané zábavnosti a kvality služeb pro vnímanou užitečnost, kvality služeb pro spokojenost a kvality informací pro vnímanou snadnost použití. Navzdory očekáváním však tato studie nepotvrdila pozitivní vztah mezi spokojeností a loajalitou zákazníků, které byly použity k operacionalizaci zákaznické zkušenosti. Současně tato práce poskytuje první ucelené hodnocení angažovanosti zákazníků ze dvou hledisek – od koncového uživatele ke kupujícímu a od kupujícího k zákazníkovi. Pokouší se vyhodnotit složitost komunikačního procesu v odběratelsko-dodavatelských vztazích B2B. Studie dále ukazuje důležitost zábavnosti a přehledné struktury informací, která nepřímo ovlivňuje vnímání kvality informací. Rozvoj vícekanálového a všudypřítomného marketingu ztěžuje poskytování kvalitních a konzistentních informací napříč všemi komunikačními kanály. Analýza komunikačních kanálů v různých fázích cesty zákazníka ukazuje, že průmysloví odběratelé používají WOM a doporučení ve fázi před nákupem a po navázání obchodních vztahů preferují osobní přístup a přímou komunikaci. Tato práce přispívá ke zmíněnému tématu rozšířením aktuálního chápání snadnosti použití a angažovanosti zákazníků a přináší nové poznatky týkající se nástrojů a hodnot, kterých si zákazníci nejvíce cení v komunikaci mezi odběratelem a dodavatelem.

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LIST OF ABBREVIATIONS

AI	Artificial Intelligence
AVE	Average Variance Extracted
B2B	Business-to-Business
B2C	Business-to-Customer
CE	Customer Engagement
CE-EU	End-User Engagement
CEO	Chief Executive Officer
CL	Customer Loyalty
CRM	Customer Relationship Management
H	Hypothesis
HTMT	Heterotrait-Monotrait Ratio
IDT	Innovation Diffusion Theory
IQ	Information Quality
IS	Information System
IT	Information Technology
PE	Perceived Enjoyment
PEOU	Perceived Ease of Use
PLS	Partial Least Squares
PU	Perceived Usefulness
S	Satisfaction
SEM	Structural Equation Modelling
SMEs	Small and medium-sized enterprises
SQ	Service Quality
TAM	Technology Acceptance Model
TOE	Technology-Organisation-Environment
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
UTAUT	Unified Theory of Acceptance and Use of Technology
VIF	Variance Inflation Factor
WOM	Word-of-Mouth

INTRODUCTION

Digital marketing changes the approach to business strategy and customer relationship management. B2B industrial customers, alongside end-users, have become more knowledgeable and demanding regarding response times, customising levels, and the quality of communication (Morgan, 2019; Sahin, 2021). As a result, customer experience has become the focus of buyer-seller relationships. Recently, considerable literature has evolved around digital transformation and digital marketing. However, existing research initially focused on particular marketing channels, e.g., e-commerce or social media (D. Cao et al., 2020; Chen et al., 2013; Mai et al., 2013) or has given attention only to B2C settings. Digital transformation in the B2B context is not a new term, but B2B industrial companies were always cautious in adopting cost-demanding and mindset-changing strategies (McKinsey & Company, 2016; Morgan, 2019). With the outbreak of the COVID-19 pandemic, businesses are left with no choice but to facilitate digital transformation and rapidly adopt new trends. According to the latest research provided by McKinsey & Company in November 2021, nine out of ten customers nowadays use omnichannel marketing with more than ten communication channels (Harrison et al., 2021). Based on the survey results, customer experience is important more than ever – eight out of ten B2B decision-makers reported a desire to consider a new business partner if the quality of the existing business relationship is not satisfying. The survey respondents outline the growth of self-service, which implicates an increase in the importance of information quality and other customer values essential for making a purchase decision. To prevent failure and deliver a good customer experience, marketing managers should, amongst other things, better understand the values of their buyers and develop an effective communication strategy with a clear and consistent value proposition. The study aims to determine what value digital communication channels deliver to create a positive customer experience.

The dissertation contains seven chapters. The introduction sets the study's preamble and emphasises the motivation and the research problem. The first chapter (state of the art) presents the theories on technology adoption and the theoretical underpinnings of the variables related to the study. The research problem and gap are posed based on the literature review and expert interviews. The second chapter specifies the research goals, objectives, hypotheses, and conceptual framework to address the research problem. Chapter three presents a detailed methodology consisting of the research design, approach, measurement items, sampling, and data collection. The data analysis with PLS-SEM, including preliminary analysis and assessing the measurement and the structural models, is presented in chapter five. The main results and discussions are shown in the succeeding chapter. The contribution of the study to science, academia, and practice, as well as study limitations and the recommendation for future work, are presented in the last two chapters.

1. STATE OF THE ART

1.1 Communication among B2B industrial companies

Before B2B customer experience and digital channels are outlined in detail, it is logical to address the specifics of communication among B2B industrial companies.

B2B companies differ from B2C companies in many ways. Compared to B2C markets, B2B relationships are based on fewer customers, last longer, take more time to develop and have high switching costs (Casidy & Nyadzayo, 2019; Holliman & Rowley, 2014; Hristova, 2013). The decision-making process is more complex and takes longer than in B2C settings because it involves a group of people (Hristova, 2013; Järvinen et al., 2012; Wille-Baumkauff, 2015).

B2B relationships are associated with a higher than B2C settings level of market transparency (Wille-Baumkauff, 2015). This can be explained by a small number of players in the industrial market. A limited number of suppliers alongside fewer but larger purchases lead to a high level of information exchange between suppliers and buyers or between buyers (Wille-Baumkauff, 2015). To gain and keep customer trust and loyalty, companies must be transparent. Therefore, the digital channels used among B2B companies are shorter and more direct than in B2C settings. Personal relationships play here an important role. Close and long-lasting relationships with industrial buyers help customers understand their needs and clearly define target groups for different activities. Given the length and complexity of purchase decisions in B2B settings, reciprocity plays an essential role in cultivating business relationships (Meehan & Wright, 2013; Wille-Baumkauff, 2015). Furthermore, purchase decisions are based on business values that require technical and functional information and need to correspond with the business objectives (Gillin & Schwartzman, 2011; Swani et al., 2014; Wille-Baumkauff, 2015). As a result, a B2B purchase process is more knowledgeable than among B2C buyers (Jussila et al., 2014; Wille-Baumkauff, 2015).

Industrial companies are different from other B2B companies, and one of the main characteristics of such companies is a complex structure. While many industrial companies have high specialisation and work in one particular segment, they tend to offer an extensive product portfolio. Additionally, they often use cross-selling. In such a case, adopting more than one of the business products may bring a buyer a functional, logistical or economic advantage (Saavedra, 2016). Often, the relationships between a seller and a buyer do not end with the purchase and include some post-purchase services, e.g., aftersales, training or technical assistance (Hristova, 2013).

Another essential feature of industrial companies is non-standardized and individualised solutions for niche applications (Krings et al., 2021).

Consequently, all actors involved in the distribution process should have high technical knowledge (Saavedra, 2016). Therefore, it is essential to demonstrate a high level of expertise in all buyer-seller interactions and provide reliable and qualitative communication content.

Next, the supply chain of B2B industrial companies is usually more complex than in B2C settings. It involves different market players, including various suppliers, manufacturing companies, intermediary companies, assemblers, institutions, retailers, and the end-user (Saavedra, 2016; Vrijhoef & Koskela, 2000; Wille-Baumkauff, 2015). *Fig. 1.1* depicts a generic supply chain configuration in the industrial context. As a result, business transactions are motivated by derived demand. This means that the demand for business goods or services results from the demand for related goods or services within the existing supply chain. Furthermore, B2B transactions are characterised by inelastic and volatile demand (Glynn, 2012; Hristova, 2013). Small changes at one end of the supply chain could cause a significant effect at the other end or throughout the existing supply chain (Hristova, 2013).

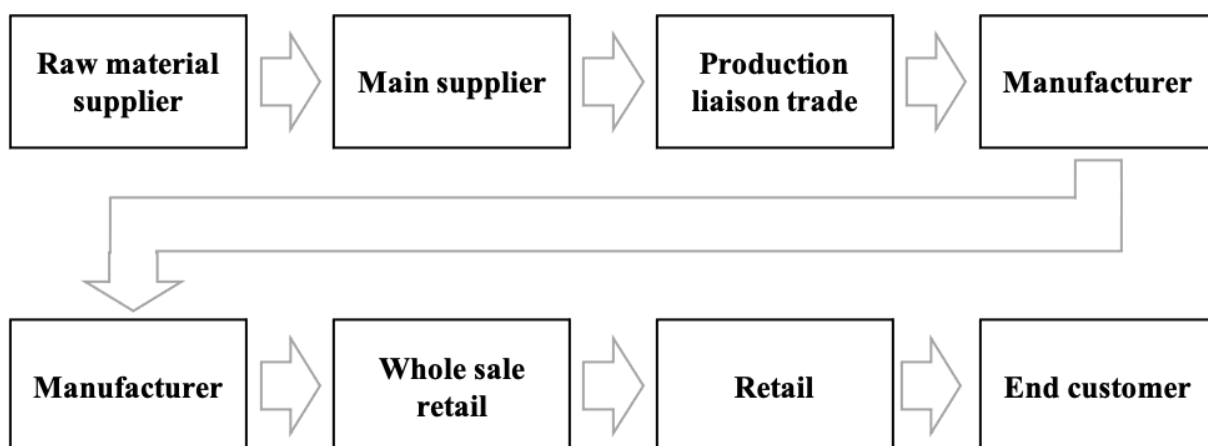


Fig. 1.1 Possible supply chain among B2B industrial companies. Source: Author adapted from Wille-Baumkauff (2015).

The following characteristics of industrial companies refer to the role of industry characteristics in strategic decision-making. Industry influences the conduct and performance of all companies representing the industry (M. E. Porter, 1981). In particular, understanding industry specifics and trends provides companies with the necessary information for strategic decision-making. These decisions are essential for delivering customer value throughout the whole supply chain and controlling their position in the market (McGahan, 2004). Under these circumstances, B2B companies should understand the needs and values of their direct supply chain partners and the end-user (Asare et al., 2016). Moreover, B2B companies must know their position in the existing supply chain to define their business and communication strategy and commit to customer value.

Table 1.1 summarises the main characteristics of B2B industrial markets compared to B2C markets.

Table 1.1 Special characteristics of B2B industrial market compared to B2C market. Source: Author adapted mainly from Glynn (2012), Hristova (2013), Wille-Baumkauff (2015).

Structure of market and demand	<ul style="list-style-type: none"> • Derived demand • Price-inelastic demand • Volatile demand
Business relationships	<ul style="list-style-type: none"> • Fewer and larger buyers • Long relationship setting-up time • High switching costs • Reciprocity • Close and long-term relationships • Clearly defined target groups • Market transparency
Purchase process	<ul style="list-style-type: none"> • Multiple buying influences • Multiple points of contact • Technical and organizational complexity • Business decisions are made based on business value • Professional and knowledgeable purchase process • Great role of technical information in the decision-making process • Product quality is critical • Potential post-purchase services
B2B industrial communication process	<ul style="list-style-type: none"> • Direct and shorter communication channels • High importance of technical information • Relevant and qualitative information • Value-added information • Useful basis for decision-making

Since the era of Industry 4.0, the industrial environment has become more complex and dynamic. Industry 4.0 is widely used in Europe, especially in the German manufacturing sector (Deloitte AG [online], 2015), which was first announced in 2013 as a German strategic initiative. Industry 4.0 is based on integrating information and communication technologies with manufacturing technology. Industry 4.0 involves "... digitisation and smartisation of factories, distribution channels, and value chain members" (Ghobakhloo, 2020, p. 2). Digital transformation requires the digitalisation of the entire value chain of business products. The significant features of Industry 4.0 involve, among others, digitalisation, customer-oriented solutions, value-added services and businesses, use of Big Data (Plattform Industrie 4.0, 2022; F. Yang & Gu, 2021).

The characteristics of B2B industrial markets strongly influence the communication process among companies. Companies use direct and personalised communication channels. Industrial companies integrate suppliers' and buyers' needs into all value-creation activities to improve communication (Deloitte AG [online], 2015). Given the complexity of business products and the nature of B2B relationships, industrial buyers use different communication channels and tools to gather relevant information for making a purchase decision. Several studies have shown that B2B buyers do online research before engaging a supplier (CEB Marketing Leadership Council, 2012; Garner [online], 2021; Lingqvist et al., 2016; McKinsey & Company, 2021). Hence, industrial buyers use content marketing primarily for search intent. Herewith, the key to industrial content is to provide qualitative, technical, and value-added information. B2B companies must build business relationships with fewer partners in a complex and rapidly changing environment. As a result, successful customer experience has become a central issue of B2B business relationships.

1.2 B2B customer experience

Customer loyalty and satisfaction have long been seen as essential for successful relationships. Even though digital transformation is not a new term, the changes it has caused are still in progress. Digitalisation has changed the nature of relationships with customers. Business partners do not have to meet personally to start business relationships. As a result, the cost of entering a new market, even abroad, has reduced, but competition has increased (OECD, 2018). Due to the absence of physical contact, it has become more difficult to gain customer trust and achieve customer satisfaction and loyalty. To boost the existing and build new business relationships, companies must better understand the needs of their customers at every stage of the customer journey.

With the distribution of digitalisation, traditional customer relationship management has become out-of-dated. Communication with customers has changed from broadcasting, one-directional to customer-centric (Holliman & Rowley, 2014; Järvinen et al., 2012). Modern customers are knowledgeable and empowered (Bashir et al., 2017; Nunes et al., 2013). As a result of an abundance of use of social media platforms and multiple devices, customers have gained unlimited access to information, which facilitates transparency and information consistency. They are now involved in a dialogue with a company or other customers (Brien, 2011) and can influence the decision process of prospective customers (Brien, 2011; Eid et al., 2019; Grabs et al., 2014; O'Hern & Kahle, 2013). The changes in customer behaviour have shifted the primary goal of customer relationship management from traditional managing customers to managing dialogue with customers (Lipiäinen, 2015; Vivek et al., 2012). Companies try to make doing business with customers more accessible, engaging them and inspiring them. This requires new communication strategies and a holistic approach to a digital appearance.

This digital transformation started in the B2C settings much earlier than among B2B customers. Traditionally, customer experience in a B2B context has been associated with pure rational and economic considerations. However, nowadays, the difference between B2B and B2C customers is no longer noticeable. Recent research outlines the importance of emotions in customer experience and their role in driving overall perceived value and satisfaction (Candi & Kahn, 2016; Čater & Čater, 2010). Behaviour theory says that people making decisions in the business environment are, first of all, human beings and therefore, they decide based on personal beliefs and experiences (Schüller, 2016). As a confirmation of this statement, more and more studies confirm the importance of emotional appeal, entertainment and engagement in B2B relationships (Candi & Kahn, 2016; Swani et al., 2014; Vivek et al., 2012), also in the industrial context (Candi & Kahn, 2016; Elsässer & Wirtz, 2017; Jensen & Klastrup, 2008; Vivek et al., 2012).

To summarise the previous statements, it is clear that due to growing digitalisation, B2B industrial companies are forced to know their customers. Industrial sellers aim to strengthen dialogue with buyers through multiple communication channels to ensure positive, long-lasting relationships based on customer satisfaction and loyalty.

1.3 B2B digital channels

Nowadays, it is almost impossible to imagine a business without digital channels. Even the most conservative companies are involved in a digital transformation, which considerably affects communication and marketing strategy. Straker et al. (2015) believe that a clear understanding of the use of digital channels provides companies with a solid foundation for marketing strategy, helping them match company objectives with customers' needs (Straker et al., 2015; Straker & Wrigley, 2016). A multi-channel and omnipresent marketing strategy addresses customers' needs at every step of their customer journey. A new approach to customer communication helps customers solve their problems quickly and creates additional value, leading to customer satisfaction and loyalty.

The emergence of digitalisation has boosted the development of new technologies and, as a result, new channels (Rosenbloom, 2013). Companies are trying to use a multi-channel strategy to win customers at different steps of their customer journey. One of the significant challenges of a multi-channel approach is to create an omnipresent marketing strategy, where no channel stands alone but instead is used interchangeably and seamlessly (Verhoef et al., 2015). This positively affects the usage behaviour of customers, allows a steady interaction with a company (Straker et al., 2015) and increases customer value through value-co-creation (Holliman & Rowley, 2014; Lipiäinen, 2015; Sichtmann et al., 2011; Vivek et al., 2012).

To achieve a successful multi-channel strategy, companies should understand what value channels transmit to their customers. Dhebar (2013) identifies five characteristics of digital touchpoints, which could be used for digital channels in general: 1) reflection of company value, 2) clear value proposition; 3) easy access; 4) easy navigation, 5) strategic differentiation (Dhebar, 2013). These criteria correspond with the customer behaviour theories, namely the Information System (IS) Success Model, the Technology Acceptance Model (TAM) and the modifications of these two models.

1.4 B2B consumer behavior theories

Consumer behaviour explores the decision-making processes and behavioural intentions of individuals, groups or organisations (Thanabodhyath et al., 2021). Over many years the research in consumer behaviour has been based on intention-based research. Intention-based research is utilised to examine how individual perceptions can predict external behaviour, such as technology adoption behaviours (Chu & Chen, 2016). Technology adoption has been extensively researched within the last half of the century. These studies aim to identify, describe, and predict the factors that cause technology adoption.

The Theory of Reasoned Action (TRA), developed by Fishbein and Ajzen (1975), advocates that an individual's behaviour is jointly determined by the individual's beliefs, attitudes, norms and intentions (Fishbein & Ajzen, 1975). The Theory of Planned Behaviour (TPB) added perceived behaviour control to improve the predictive power of the TRA (Ajzen, 1985). The TRA and the TPB explain behaviour based on personal and social beliefs but do not consider technological aspects (Chu & Chen, 2016; Thanabodypath et al., 2021).

The Technology Acceptance Model was developed in 1985 based on TRA to explain Information Technology usage behaviour. According to the TAM, technology adoption results from four factors: 1) external factors affecting attitudes (e.g., social influence, age or gender), 2) perceptions including perceived usefulness and perceived ease of use, 3) attitude toward using behaviour, and 4) behavioural intention to use itself. (Chu & Chen, 2016). The TAM proposes two attributes of new technology adoption - perceived usefulness and ease of use. Perceived usefulness refers to a user's belief that new technology helps achieve the desired goal. Ease of use refers to a user's belief that new technology is free of effort (Davis, 1989). Venkatesh and Davis (2000) have extended the TAM, referred to as TAM2, by adding external variables, the determinants of perceived usefulness and intention to use (Venkatesh & Davis, 2000). Venkatesh and Bala (2008) extended the TAM2 by adding the determinates of perceived ease of use, combined into two categories – an individual's IT adoption and use.

The technology-organisation-environment (TOE) framework was developed by Tornatzky and Fleischer (1990) to study the adoption and implementation of various information system (IS) innovations and new technologies at the organisational level (Tornatzky & Fleischer, 1990). According to the authors, this process is affected by three types of factors: the technology context (e.g., availability or characteristics), the organisation context (e.g., organisation structure and complexity), and the environment context (e.g., industry characteristics or market structure) (Hasani et al., 2017; Sun et al., 2020).

Another model, the Information System Success Model, was designed in 1992 to evaluate system (technology) success components. Initially, the model focused on two system characteristics - system quality and information quality (DeLone & McLean, 1992). After a decade, the authors updated the model by adding another element - service quality (DeLone & McLean, 2003). The development of technologies has motivated researchers to extend the existing models and adapt them to different users and systems (Legris et al., 2003). The IS success model has evolved over time to respond to the notion of time. Seddon (1997) has slightly extended the original IS success model by explaining that the level of satisfaction and the system used depends on the quality of a system and information (Seddon, 1997).

The Innovation Diffusion Theory (IDT) theory was initially developed in 1962 to explain the ways new technologies are adopted by different individuals or

organisations (Rogers, 2003). Over the years, this model has been modified to increasingly reflect the changing business environment. The model explains innovation diffusion processes in five stages: knowledge, persuasion, decision, implementation, and confirmation (Rogers, 2003). Before individuals or organisations decide on adopting or rejecting a new technology, they must understand its function, value and potential utility for the company and develop a favourable or an unfavourable attitude toward it (Sun et al., 2020). Hence, adopting innovation does not purely depend on the ability of new technology to solve technical problems. It must be evaluated from the point of view of an added value and the level of integration into the existing organisational structure and processes.

The Unified Theory of Acceptance and Use of Technology (UTAUT) model was developed by Venkatesh et al. (2003). It combines eight technology adoption theories to understand the factors influencing users' adoption decisions comprehensively. The eight models combined within the UTAUT are the theory of reasoned action, the motivational model, the technology acceptance model, the theory of planned behaviour, a model combining the technology acceptance model and the theory of planned behaviour, the model of personal computer utilisation, the innovation diffusion theory, and the social cognitive theory (Venkatesh et al., 2003). According to the model, performance expectancy, effort expectancy, social influence, and facilitating conditions determine behavioural intentions to use technology. Because of the moderators of the key relationships (i.e., gender, age, experience, and voluntariness), the model is applicable mainly in explaining technology adoption and usage among individuals (Dwivedi et al., 2019). The original UTAUT model was extended in 2012 by incorporating hedonic motivation, price value, and habit to tailor it to consumer behaviour (Venkatesh et al., 2012).

Appendix A provides the graphical representation of the abovementioned technology adoption models.

Industry 4.0 enhances industrial digitalisation and the adoption of new technologies with smart and autonomous systems, e.g., Artificial Intelligence (AI) or the Internet of Things (Baabdullah et al., 2021). Company innovations are, in general, applicable to two areas: what a company offers (e.g., products, services) and how it delivers it (e.g., value chain, organisation and partnership, strategy) (Žižlavský, 2014). Consistent with the Oslo Manual, managed by OECD and Eurostat, innovations could be grouped into (1) product, (2) process, (3) marketing and (4) organisational innovations (OECD/Eurostat, 2005). Product innovations involve changes in the capability of a business product. Process innovations refer to new knowledge in production and delivery methods. Marketing innovations aim to address new marketing methods to provide a better customer experience. Organisational innovations include changes in business practices, workplace organisation and external relationships (OECD/Eurostat,

2005; Žižlavský, 2014). The IDT and the TOE are commonly used to examine the adoption of the first two groups. The IS success theory, the TAM and the UTAUT, including their extensions, are primarily used in explaining the adoption of marketing and organisational innovations. Comparing the abovementioned technology adoption theories, the UTAUT has little application in the industrial sector due to the specifics of the model.

In recent years big data and AI have become rapidly developing research areas. Big data and AI are becoming mainstream not only in the B2B sector but in the whole business environment. Big data is used in analytical and predictive processes to create business value and complete advantage to support business decisions and improve the existing processes and services (Sun et al., 2020). Grounded in several technology adoption theories, including the IDT and the TEO, Sun et al. (2020) analyse the influence of different technological, organisational and environmental factors on the adoption of big data among 197 B2B companies, including 72 manufacturing companies, in the east of China. The findings highlighted the importance of technological competence, technology resources and top management support in adopting big data.

Following a similar theoretical approach, Ghobakhloo and Ching (2019) explore the determinants of adoption of Smart Manufacturing-related Information and Digital Technologies on the example of 177 Malaysian and 183 Iranian manufacturing SMEs. The results highlighted the significant role of perceived costs, value, and compatibility (Ghobakhloo & Ching, 2019).

Existing research on technology acceptance focuses on various areas of digital marketing: e.g., social media, mobile marketing, and e-commerce. For instance, Karjaluoto et al. (2014), paving on the assumption of the TAM, investigates the behavioural intentions of 105 Finnish B2B sales managers to use mobile technology in their jobs. The authors identified perceived usefulness, perceived ease of use, perceived innovativeness, perceived risk, and perceived reachability being essential drivers of mobile CRM systems among B2B industrial companies. Siamagka et al. (2015) applied TAM2 to explore the factors determining the adoption of social media among 105 industrial companies in the United Kingdom. The findings show that perceived usefulness and organisational innovativeness are the main antecedents of social media adoption. Moreover, the post-hoc interviews highlighted the importance of perceived perceptions of key stakeholders (e.g., buyers or competitors) on the adoption of social media. Furthermore, research finds that perceived usefulness tends to be determined by image or external pressure, e.g., from the industry.

In the following study, Lacka and Chong (2016) investigate the impact of usefulness, usability and utility on the adoption and use of social media among 181 B2B marketing professionals across industries in China. The results reveal the importance of perceived usefulness, usability, and utility for adopting social media sites.

Relatedly, Veldeman, van Praet and Mechant (2017), relying on the TAM, investigated perception and attitudes toward social media among 92 Belgian B2B companies from traditional industries (Veldeman et al., 2017). The findings go alongside previous research on the TAM. Moreover, the authors try to unravel the differences between the use of social media sites among industrial and IT companies. Belgian companies from traditional industries evaluate social media's perceived usefulness lower than their IT companies' counterparts. In particular, industrial companies see more risks and fewer advantages than the IT sector and expect no rise in the interest in social media marketing. The study compares the IT and the industrial sector results and matches the findings with the existing UK, USA, and Dutch research.

Eid, Abdelmoety, and Agag (2019) examine the antecedents and consequences of social media use among 277 British B2B exporting SMEs and how the adoption of social media influences their export. The authors extend the TAM and link it to factors from the IDT theory. Consequently, the proposed model confirmed the primary outcomes of the TAM and could explain 64 % variance in social media marketing use. The findings confirm the influence of social media on international marketing activities, including understanding customers' views and brand awareness and monitoring competition in different markets.

Chatterjee and Kumar (2020) adapt the TAM and the UTAUT2 to investigate adopting social media marketing to improve a company's business impact. The results highlighted the positive influence of perceived usefulness, perceived ease of use and compatibility on the adoption of social media marketing. The authors surveyed 310 SMEs in India, and the proposed model showed 76% of explanatory power.

Thanabodypath et al. (2021) united the existing B2B consumer behaviour theories and TAM models into an industrial buyer innovation adoption model to examine industrial consumer technological adoption. The authors collected data from 400 factories in Thailand to study the adoption of Smartphone-Based Electrochemical Analytical Devices for heavy metal detection in the manufacturing industry. The findings revealed that the variables referred to seller, buyer, internal organisation, and invented technology advantages positively impact the adoption experience. At the same time, the external environment and internal people characteristics tend to hinder technology adoption (Thanabodypath et al., 2021).

These studies provide thorough research into separate areas of B2B digital marketing; however, no study considers a multi-channel context and evaluates the buyer-seller experience from a holistic standpoint. Nonetheless, existing theories have limitations and might not be able to explain customer behaviour fully. Therefore, it is necessary to consider additional factors to describe all technology adoption phenomena within B2B digital transformation.

1.5 Information quality

Information quality is defined as a user's perception of the goodness and usefulness of the information in an information system (Hilligoss & Rieh, 2008). Information quality plays an essential role in B2B buyer-seller relationships. On the one hand, qualitative information enables effective communication with a company, the media, or other users of the media. On the other hand, it plays a vital role in decision-making. Due to the specifics of B2B relationships, information is essential in the pre-purchase phase of the customer journey. The lack of physical contact makes B2B companies rely on the information available across different touchpoints (Chen et al., 2013; Gharib et al., 2017; Habibi et al., 2015). Therefore, it is important to have timed, up-to-date, consistent, and coordinated information across different touchpoints (Habibi et al., 2015; McKnight et al., 2017). In the B2B setting, buyers must base their decisions on the information they receive. Therefore, it must be relevant, applicable, and helpful for the task at hand (Knight and Burn, 2005).

Consequently, the buyer-seller relationships have to be more intense and personalised than those in B2C settings (DeLone & McLean, 2003; Habibi et al., 2015). Moreover, the products and services in the B2B area are often more complex than in the B2C area and therefore require detailed, accurate, complete and reliable information (Wixom & Todd, 2005). At the same time, a high level of risk in a high-value purchase requires the decision-makers to be more knowledgeable than those in B2C settings.

The research on information quality has been developed through several studies. The information theory was developed in the 1940es and determined information as that which reduces uncertainty. Shannon and Weaver (1949) model of communication proposed three levels of information: the technical level (accuracy and efficiency of transference of the system that produces it), the semantic level (the accuracy in the interpretation of the intended message), and the effectiveness level (its impact on the receiver) (Shannon & Weaver, 1964). Mason (1978) has modified this theory and expanded the effectiveness of information success based on three categories: receipt of information, influence on the recipient, and influence on the system (Mason, 1978). The information theory was also used in the IS success model developed by DeLone and McLean (DeLone & McLean, 1992). The authors base their model on six variables of the IS success: System Quality, Information Quality, Use, User Satisfaction, Individual Impact, and Organisational Impact. System Quality was equivalent to the technical level of communication (accuracy and efficiency of the system that produces it). Information Quality was equal to the semantic level of communication (its ability to transfer the intended message). Use, User Satisfaction, Individual Impact, and Organisational Impact were the equivalent of the effectiveness level according to Mason's perspective: Use related to the "receipt of information", User Satisfaction and Individual Impact to the

“information’s influence on the recipient”, Organisational Impact to the “influence of the information on the system” (Petter & McLean, 2009). In a follow-up study, DeLone and McLean proposed a modified taxonomy by adding a dimension of service quality and combining the dimensions of individual and organisational impact into net benefits. According to DeLone and McLean (2003), the dimension of system quality is measured in terms of ease of use, functionality, reliability, flexibility, data quality, portability, integration, and importance (DeLone & McLean, 2003). Moreover, the authors suggested some changes related to the development of e-commerce. Concerning information quality, the authors proposed that personalised, complete, relevant, easy to understand, and secure content ensures information quality (DeLone & McLean, 2003).

Most of the studies relate information quality to the system's content. For instance, McKnight et al. (2017) distinguish intrinsic or contextual information quality (McKnight et al., 2017). Intrinsic information quality represents the level of accuracy between the data values presented by the system and the actual status quo (McKnight et al., 2017). Contextual information quality represents the degree to which the information helps complete a particular task (McKnight et al., 2017). It could refer to the information relevance, completeness, and currency (McKnight et al., 2017). Some researchers consider information quality as a part of perceived usefulness (Chen et al., 2013). Other researchers recognise information quality as a separate construct and report a positive correlation between information quality and both perceived ease of use and perceived usefulness (Chen et al., 2013; DeLone & McLean, 2003; Lin, 2008).

Based on previous research, information quality is a significant predictor of satisfaction (Bai et al., 2008; Lin, 2008; Petter & McLean, 2009; Roky & Meriouh, 2015). According to McLean (2017), information quality directly affects the B2B customer experience and the success of a customer’s search in general (McLean, 2017). Several studies observed a significant positive relationship between the information quality and the continuous usage intention (Diop et al., 2019; Huertas-Garcia et al., 2013; McKnight et al., 2017; Petter & McLean, 2009; Roky & Meriouh, 2015). Users compare their expectations of the system's quality with the actual system's performance and the outcomes and decide whether to use it. This attitude is especially important during the pre-purchase phase of the customer journey and influences the post-purchase behaviour by affecting customer satisfaction (Diop et al., 2019).

Among other dimensions of information quality, researchers distinguish reliability (Hänninen & Karjaluoto, 2017), timeliness (Hänninen & Karjaluoto, 2017; Ukpabi & Karjaluoto, 2018), importance (Hilligoss & Rieh, 2008), usefulness (Hilligoss & Rieh, 2008) and goodness (Hilligoss & Rieh, 2008; Rieh, 2002).

1.6 Perceived usefulness

Perceived usefulness is the core construct of the TAM (Davis, 1989) and TAM2 (Venkatesh & Davis, 2000). Perceived usefulness is explained as users' believing that using the technology will enhance their performance (Siamagka et al., 2015).

Most studies examine perceived usefulness in B2C relationships. Amin et al. (2014) found significant associations between the perceived usefulness of the user of mobile technologies and trust (Amin et al., 2014) and satisfaction (Amin et al., 2014). In e-commerce, Mai et al. (2013) and Wong et al. (2014) proved that perceived usefulness is one of the factors contributing to satisfaction and customer loyalty (Mai et al., 2013; Wong et al., 2014). Lin (2008) determines the importance of perceived usefulness and ease of use on the attitudes toward virtual communities on the Internet (Lin, 2008).

Growing number of studies analyse the perception of usefulness in the B2B settings. The existing research among B2B companies shows the impact of perceived usefulness on attitude (Karjaluoto et al., 2014; Lacka & Chong, 2016), usage intention (Karjaluoto et al., 2014; Keinänen & Kuivalainen, 2015; Lacka & Chong, 2016; Martinez-Caro et al., 2013; Siamagka et al., 2015; Venkatesh & Davis, 2000), satisfaction (Chen et al., 2013; T. M. Lee & Park, 2008) and loyalty (Chen et al., 2013). Siamagka et al. (2015) determine organisational innovativeness, image, perceived ease of use, and perceived barriers important for the perceived usefulness of social media for B2B companies (Siamagka et al., 2015).

Among the most frequently used measurements of perceived usefulness, researchers use performance (Chatterjee & Kumar Kar, 2020), productivity (Chen et al., 2013; C. L. Hsu & Lin, 2008; Lu et al., 2019; Siamagka et al., 2015), effectiveness (Chatterjee & Kumar Kar, 2020; Karjaluoto et al., 2014; Siamagka et al., 2015), usefulness (Karjaluoto et al., 2014; S. K. Roy et al., 2018; Siamagka et al., 2015).

In their initial work, Davis et al. (1989) identify six characteristics of perceived usefulness influencing the adaption of computer technologies for work purposes: Work More Quickly, Job Performance, Increase Productivity, Effectiveness, Makes Job Easier, Useful (Davis et al., 1989).

Eid et al. (2019) posit the importance of the clear usefulness of digital touchpoints in the example of social media marketing for exporting companies when buyers cannot perform physical contact with a seller (Eid et al., 2019).

The researchers determine the importance of certain factors facilitating perceived usefulness. Venkatesh and Davis (2000), in the extended model of TAM, TAM2, explain usage intentions from the point of view of social influence and cognitive instruments (Venkatesh & Davis, 2000). The TAM2 offers considerable insights into the potential origins of usefulness perceptions,

proposing five antecedents of perceived usefulness: subjective norm, image, job relevance, output quality, and result demonstrability (Venkatesh & Davis, 2000). Social influence processes cover social norms and image as determinants of perceived usefulness and usage intention - i.e., when a user believes that technology helps to gain status and influence within the workgroup and increases job performance (Venkatesh & Davis, 2000). On the other hand, from the point of view of cognitive instruments, researchers determine perceived usefulness from a user's beliefs of job or business relevance, output quality, and demonstrability (Venkatesh & Davis, 2000). Job relevance explains a user's belief of what extent the technology is relevant to his or her job and could support a set of tasks (Chen et al., 2013; Karjaluoto et al., 2014; Lu et al., 2019; S. Sohn, 2017; Venkatesh & Davis, 2000). Output quality refers to a user's belief of what extent the technology helps to perform the tasks well (Amin et al., 2014; Chen et al., 2013; S. K. Roy et al., 2018; S. Sohn, 2017; Venkatesh & Davis, 2000). Result demonstrability reflects a user evaluation that the technology produces results desired by a user (Chen et al., 2013; Karjaluoto et al., 2014; Lu et al., 2019; S. K. Roy et al., 2018; S. Sohn, 2017; Venkatesh & Davis, 2000).

Cognitive beliefs are usually acquired from existing experience. While evaluating the quality of communication channels, users compare it with their expertise (S. Sohn, 2017). As a user must use digital touchpoints to perform buyer-seller relationships, users may build their attitude toward a seller based on the cognitive beliefs of an object or a touchpoint. Hence, expected quality influences whether to accept or reject the technology (S. Sohn, 2017).

The researchers draw particular attention to the impact of information quality on perceived usefulness (Chen et al., 2013; S. Sohn, 2017). Researchers highlight the role of online information in the search before purchase, which helps to evaluate the search and helps in the decision-making process (S. Sohn, 2017). Other studies have confirmed the importance of information quality for adopting information technology (Chen et al., 2013; Karjaluoto et al., 2014).

Existing literature posits a strong relationship between extrinsic (e.g. perceived usefulness) and intrinsic factors influencing usage intentions (Ryu et al., 2009). Intrinsic factors motivate a user to spend more time with the task and herewith facilitate perceived usefulness (Ryu et al., 2009).

Davis et al. (1992) suggest examining perceived enjoyment as a determinant of use intention (Davis et al., 1992) and as a determinant of ease of use (Venkatesh, 2000).

Kim et al. (2017) found that perceived usefulness, perceived ease of use, and perceived enjoyment play a significant role in predicting the adoption of smart retail technologies (H. Y. Kim et al., 2017).

1.7 Perceived ease of use

Perceived ease of use was proposed initially within the TAM. Perceived ease of use could be explained as the extent to which a person believes that using technology will be free of effort (Davis, 1989).

In the 1990es, the TAM was applied to examine behavioural intentions in adopting automation tools and office systems. With the development of the Internet, business has started to use more complex Internet-based systems, such as mobile CRM (Rodriguez & Trainor, 2016; Sinisalo et al., 2007), mobile services (Amin et al., 2014; Boonsiritomachai & Pitchayadejanant, 2019; Karjaluoto et al., 2014), e-commerce (Chen et al., 2013; Janita & Miranda, 2013; López-Miguens & Vázquez, 2017; Oliveira et al., 2017), online (Belanche et al., 2012; Lu et al., 2019; Mai et al., 2013; C. E. Porter & Donthu, 2006) or social media (C. L. Hsu & Lin, 2008; Keinänen & Kuivalainen, 2015; Siamagka et al., 2015).

The existing literature on B2B technology adoption determines a significant effect of perceived ease of use on attitude (C. L. Hsu & Lin, 2008), behaviour intention (Karjaluoto et al., 2014), customer satisfaction (Amin et al., 2014; Wong et al., 2014), trust (Hernández-Ortega, 2011) and customer loyalty (Wong et al., 2014).

The original TAM emphasises the importance of perceived ease of use as a predictor of perceived usefulness. Some researchers have confirmed these findings by (Amin et al., 2014; Karjaluoto et al., 2014; Mai et al., 2013). However, some other studies do not support this relationship (Lacka & Chong, 2016; Siamagka et al., 2015). Siamagka et al. (2015) explain in their B2B social media adoption research that using social media platforms *per ce* is easy. Still, the strategic usage of social media to bring benefits to a company is not (Siamagka et al., 2015). Moreover, recent studies indicate that the increasing level of experience in using specific touchpoints, e.g. social media platforms or mobile devices, leads to changes in the PEOU-PU relationships: ease of use starts showing a lack or no significant influence on behavioural intentions (Boonsiritomachai & Pitchayadejanant, 2019; Karjaluoto et al., 2014; Oliveira et al., 2017; Siamagka et al., 2015). With the development of digitalisation, more and more people use social media and mobile devices not only at work but also for their private purposes and get used to this technology.

Based on these findings, some researchers consider ease of use not in the context of using a technology *per ce* (e.g. ease of use of a tablet or a mobile phone), but in the contexts of hedonic characteristics of technology, a channel or a touchpoint, such as a touchpoint or a system quality (López-Miguens & Vázquez, 2017; Petter & McLean, 2009; S. Sohn, 2017; Stein & Ramaseshan, 2016), usability (Belanche et al., 2012; Flavian et al., 2006; Lacka & Chong, 2016; D. Lee et al., 2015), navigability (Janita & Miranda, 2013; Toufaily et al., 2013),

website infrastructure (Oliveira et al., 2017), website image (Pereira et al., 2016) or effort expectancy (Boonsiritomachai & Pitchayadejanant, 2019).

Lacka and Chong (2016) determine ease of use as a user's perception of "whether or not using particular a technology... involves minimal effort in the process of goal achievement" (Lacka & Chong, 2016, p. 83). Easy navigation and convenience help users access product information quickly (Wong et al., 2014). Navigability and clear information quality create a positive customer experience, letting them achieve their goals and improving customer journeys (Mai et al., 2013). In their analysis of ease of use, Amin et al. (2014) reveal that the convenience and user-friendliness of the service help gain customer satisfaction (Amin et al., 2014). The development of personalised products and services is important in increasing perceived ease of use and perceived usefulness (Mai et al., 2013; Oliveira et al., 2017) and, as a result, the level of satisfaction (Flavian et al., 2006).

Researchers agree that if a customer gets a consistent customer experience across different channels, this increases the value of the business relationship and makes the communication process with the company easier. The existing research argues that other communication channels address diverse customer needs and create various customer experiences (de Haan et al., 2015; Gao et al., 2020; Madaleno et al., 2007; Straker et al., 2015). Moreover, different channels are used at different customer journey stages (de Haan et al., 2015; Gao et al., 2020). Like a company website, some channels are more commonly used to search for information about a product, a service, or a company. The other, e.g., chats on social media platforms, create the room to interact with a company.

With the development of technology, researchers distinguish a shift from multi-channel marketing to omnichannel marketing (Verhoef et al., 2015). The omnichannel approach to digital marketing anticipates that marketing channels and touchpoints are used interchangeably and seamlessly. It is challenging to separate communication among different communication channels, e.g., only through social media or a company website. As a result, the borders between the channels are getting blurred. Moreover, omnipresent marketing allows not only to increase the number of channels but also to consider value co-creation (Verhoef et al., 2015). Existing research highlights the importance of mobile devices in creating the omnichannel world (de Haan et al., 2015; Verhoef et al., 2015).

Developing an effective communication strategy that incorporates omni- and multichannel is still a challenge for companies; however, it brings many advantages. Consistent communication across channels intensify customer experience in a comfortable, easy and effortless way (Gao et al., 2020). Whereas the multi-channel communication strategy tries to broaden the information flow between a buyer and a seller, omnichannel communication strategy tries to ensure consistency of the information flow and to integrate the channel interactions (Neslin et al., 2014; Verhoef et al., 2015).

1.8 Perceived enjoyment

Perceived enjoyment refers to the perception that a product, service, or technology is enjoyable, pleasant, or interesting (Venkatesh, 2000). It refers to the pleasurable feeling, including fun, curiosity and exploration (C. L. Hsu & Lin, 2008). The concept of enjoyment is connected with aesthetics, entertainment and positive experience (Tasci & Ko, 2016).

Perceived enjoyment in digital services has been studied greatly in the B2C context. Most of the studies cover web-based e-shopping experience (Ha & Stoel, 2009; Mai et al., 2013; Wong et al., 2014; S. Yang et al., 2014), the use of social media (C. L. Hsu & Lin, 2008; Ukpabi & Karjaluoto, 2018) or the use of artificial intelligence (K. Sohn & Kwon, 2020). These studies assert that the users of digital services are looking for an escape, entertainment and interaction (M. Cao et al., 2005).

It has also been considered within a technology adoption, including TAM. Several studies demonstrate customer perception of the technology's ease and usefulness when the technology is enjoyable. Over time with the increase of experience, the ease of technology use increases, and at the same time, this could lead to enjoyment (Venkatesh & Bala, 2008). Praveena & Thomas (2014) analyse the role of perceived enjoyment in the TAM to explain the intention to use Facebook (Praveena & Thomas, 2014). The results have shown a significant effect of perceived enjoyment on attitude. On the other side, in the study of Nath, Saha and Salehi-Sangari (2019), perceived enjoyment did not show a substantial effect on attitude (Nath et al., 2019).

The growing part of the existing research on perceived enjoyment covers adopting new technologies (Ha & Stoel, 2009; Ukpabi & Karjaluoto, 2018). Researchers report the influence of perceived enjoyment on perceived ease of use (Driediger & Bhatiasevi, 2019; Venkatesh, 2000), perceived usefulness (Driediger & Bhatiasevi, 2019; Ha & Stoel, 2009) and the positive attitude toward a new technology (Ha & Stoel, 2009; C. L. Hsu & Lin, 2008). These studies report that perceived enjoyment is one of the main factors driving an acceptance of new technology (Ha & Stoel, 2009; C. L. Hsu & Lin, 2008; Ukpabi & Karjaluoto, 2018; S. Yang et al., 2014).

With the increased digitalisation, many studies focus on assessing perceived enjoyment in the B2B context. Most of them are focused on using social media. Lacka and Chong (2016) investigate the usability of social media sites in China among B2B companies. In their research, the authors reveal that enjoyability and satisfaction positively affect the intention to use social media. The authors define social media sites as a so-called “pleasure-oriented technology” dependent on enjoyability and satisfaction (Lacka & Chong, 2016). Bruhn et al. (2014) analyse the interaction in B2B brand communities. The authors highlight the importance of such emotions as fun, variety and challenge in the B2B communication process

(Bruhn et al., 2014). The researchers indicate that emotional involvement develops value-creative behaviour and positively impacts user behaviour and customer loyalty (Henderson & Cote, 1998; Lipiäinen & Karjaluoto, 2015; Pascucci et al., 2018; Straker & Wrigley, 2016).

The growing number of studies on B2B companies generate the idea that decisions made in B2B settings may not always be based on rational argumentation (Candi & Kahn, 2016; Jensen & Klasttrup, 2008; Prior, 2013). This idea contradicts the previous understanding of B2B relationships as purely rational and value-based driven (Russo et al., 2016). The existing research highlights the importance of emotional contact, engagement, and interaction in B2B relationships. An entertaining way of presenting useful information increases the level of perceived enjoyment. Lack of physical contact between online sellers and buyers motivates B2B companies to give information on a website or other digital channels sufficient for making customer decisions (López-Miguens & Vázquez, 2017). Using interactive communication tools could be emotionally and intellectually challenging for the users of these technologies. To meet these needs, many companies try to offer a wide range of interacting opportunities, e.g., chats, videos, blog postings, and social media. In this way, the users of these communication tools could satisfy their intellectual demands on information and get relational and emotional benefits (Bruhn et al., 2014).

Perceived enjoyment contributes to the perception of relationship quality and satisfaction. When buyers enjoy the communication process with sellers, they may positively evaluate the sellers' efforts to build a relationship with them. A positive evaluation creates a psychological bond, motivating buyers to stay with sellers (Park & Kim, 2014). A positive emotional connection leads to a positive experience (Spieth et al., 2019), which leads to satisfaction, behavioural intentions and customer loyalty.

Some studies, however, report that emotions in the B2B settings have only a limited impact. These studies indicate that services with increasing emotional input only increase customer satisfaction until a certain threshold (Candi & Kahn, 2016). Thus, perceived enjoyment in the B2B context is an important facilitating factor for fostering B2B communication but needs to be considered with other factors. In general, researchers appeal to carefully balance the entertaining and rational content in order not to affect the level of technical competence (Habibi et al., 2015).

1.9 Service quality

Researchers explain service quality as the degree of support delivered by the service provider (Chen et al., 2013; DeLone & McLean, 2003). Most of the studies cover the areas of retail and customer service.

With the development of digitalisation, the concept of service quality has shifted from the assessment of interactions between humans to the evaluation of interactions between humans and technology (M. Kim et al., 2006). Service quality covers two areas: technical quality (representing the outcome of the service) and functional quality (describing the manner of process delivery) (Chumpitaz Caceres & Paparoidamis, 2007; Parasuraman, 1998). For instance, functional quality could be represented by a timely and complete delivery (McKnight et al., 2017). Some studies consider service quality as a part of relationship quality (Rauyruen & Miller, 2006). The most recent research considers service quality in the context of e-commerce websites (M. Cao et al., 2005; Chen et al., 2013; L.-C. Hsu et al., 2013; Parasuraman et al., 2004).

Several models have been developed to assess the service quality of an e-commerce website. The most widely used of them is the SERVQUAL model, that suggests measuring service quality by reliability, responsiveness, assurance, empathy, and tangibles (Nyadzayo & Khajehzadeh, 2016; Parasuraman et al., 1988, 2005).

The next model, the E-S-QUAL model, assesses reliability, responsiveness, access, flexibility, ease of navigation, efficiency, assurance/trust, security/privacy, price knowledge, site aesthetics and customisation/personalisation of a website dividing these measures into four dimensions: efficiency, fulfilment, system availability, and privacy (Parasuraman et al., 2004, 2005). Cao et al. (2005) assess service quality in a B2B e-commerce context from the point of view of trust and empathy (M. Cao et al., 2005). DeLone and McLean (2003) expand the IS success model by adding a separate service quality dimension to respond to the increasing Internet coverage. The authors suggest measuring service quality through assurance, empathy and responsiveness (DeLone & McLean, 2003). Chen et al. (2013), in turn, expand the dimension of service quality within the IS model by adding the measures of process and collaboration quality and testing the model in the B2B e-commerce (Chen et al., 2013). The authors argue that service quality is driven by the attractiveness of online services and their support capabilities, empathy and technical competence (Chen et al., 2013). According to the study, process quality in the B2B e-commerce context ensures the technical smoothness of the services provided and is therefore critical for building perceived usefulness and satisfaction. Collaboration quality facilitates information integration and exchange and improves usefulness and satisfaction (Chen et al., 2013).

Different studies confirm the impact of service quality on behavioural intentions (Molinari et al., 2008; Zeithaml et al., 1996), perceived usefulness (Chen et al., 2013), perception of value (S. Roy et al., 2019), satisfaction (Chen et al., 2013; Rauyruen & Miller, 2006; S. Roy et al., 2019) and customer loyalty (Chen et al., 2013; Nyadzayo & Khajehzadeh, 2016; Parasuraman et al., 2004; Rauyruen & Miller, 2006) in the B2B context. The previous research considers a strong link between service quality perception and satisfaction, leading to customer loyalty and a positive WOM (Rauyruen & Miller, 2006; S. Roy et al., 2019).

1.10 Satisfaction

Satisfaction is a process of evaluating a purchase experience based on comparing the expectations with the result (Gil-Saura et al., 2009). Satisfaction is seen as a phenomenon linked to cognitive judgements and affective responses (Gil-Saura et al., 2009; López-Miguens & Vázquez, 2017; Oliver, 1997). The cognitive component represents the evaluation of an experience. The affective component is exhibited by particular feelings formed as a result of the evaluation (Gil-Saura et al., 2009). Satisfaction accumulates and results from the appraisal of all aspects of the business relationship with a seller, (Gil-Saura et al., 2009; López-Miguens & Vázquez, 2017; Russo et al., 2016).

Satisfaction refers to the main key metrics of information system success (DeLone & McLean, 1992; Seddon, 1997). A large body of the existing research has been dedicated to understanding satisfaction and its role in the B2B relationships (S. Yang, 2015). Satisfaction in B2B settings is considered one of the key antecedents of customer loyalty (Chumpitaz Caceres & Papparoidamis, 2007; Oliveira et al., 2017; Oliver, 1997; Pan et al., 2012; Rauyruen & Miller, 2006; Russo et al., 2016; S. Yang, 2015).

1.11 Customer loyalty

Defining customer loyalty, many researchers refer to the definition provided by Oliver (1997), “a deeply held commitment to rebuy or re-patronise a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour.” (Oliver, 1997, p. 432).

Customer loyalty is a complex multi-dimensional construct, including attitudinal and behavioural dimensions (Pan et al., 2012). Attitudinal loyalty focuses on physiological components of loyalty, such as likeliness, satisfaction or intent (Giovanis et al., 2015; Toufaily et al., 2013; Valvi & Fragkos, 2012). Behavioural loyalty is defined by repeat purchase behaviour and measures the number or frequency of purchases (Toufaily et al., 2013; Valvi & Fragkos, 2012).

The composite approach to loyalty combines both previous approaches and highlights the complexity of the concept.

Many researchers, (Han et al., 2011; López-Miguens & Vázquez, 2017; Toufaily et al., 2013), consider customer loyalty by the Oliver model (Oliver, 1997, 1999). Oliver (1997, 1999) proposes four stages of customer loyalty - cognitive, affective, conative and action. Attitudinal loyalty is presented by the cognitive and the affective stages, and behavioural loyalty – is by the conative stage and the action itself. The cognitive stage reflects an attitude to a product, service or technology based on a previous or existing knowledge or experience (Han et al., 2011; López-Miguens & Vázquez, 2017; Oliver, 1997, 1999; Toufaily et al., 2013). Cognitive loyalty could be determined by the information related to perceived value involving price, functional or psychological aspects and quality (Han et al., 2011). Affective loyalty reflects a favourable attitude to a product, service or technology and involves emotions and satisfaction (Han et al., 2011; López-Miguens & Vázquez, 2017; Oliver, 1997, 1999; Toufaily et al., 2013). Conative stage indicates the desire to intend an action (Han et al., 2011; López-Miguens & Vázquez, 2017; Oliver, 1997, 1999; Toufaily et al., 2013). Conative loyalty involves a solid commitment to a product, service or technology and the intention to re-purchase (Han et al., 2011). Action loyalty transmits the intention into action (Han et al., 2011; López-Miguens & Vázquez, 2017; Oliver, 1997, 1999; Toufaily et al., 2013).

In this context, B2B customer loyalty describes a buyer's willingness to maintain a stable business relationship with a seller and engage in repeat behaviour. A buyer considers that particular seller the first choice among alternatives and has favourable beliefs and positive emotions toward a seller's product, service or technology (López-Miguens & Vázquez, 2017). Moreover, satisfaction is often seen as an antecedent of customer loyalty (Anderson & Swaminathan, 2011).

The current research measures customer loyalty by the re-purchase intentions (Askariazad & Babakhani, 2015; Čater & Čater, 2010; Chen et al., 2013; Legris et al., 2003; López-Miguens & Vázquez, 2017; Martínez-Caro et al., 2013; S. Yang, 2015), considering the seller as first choice (Anderson & Swaminathan, 2011; Čater & Čater, 2010; Chen et al., 2013; C. L. Hsu & Lin, 2008; Janita & Miranda, 2013; López-Miguens & Vázquez, 2017; Pereira et al., 2016; Valvi & West, 2013), give a positive WOM or recommendation (Čater & Čater, 2010; Chen et al., 2013; López-Miguens & Vázquez, 2017), having a positive feeling and believes toward the seller (Valvi & West, 2013), having no intention to switch to another seller (Anderson & Swaminathan, 2011; L.-C. Hsu et al., 2013; Janita & Miranda, 2013; Valvi & West, 2013).

1.12 Customer engagement

Literature understands customer engagement as an extension of customer emotional and rational bond with a brand or a company (Steward et al., 2018; Vivek et al., 2012). As the construct of satisfaction and customer loyalty, customer engagement is considered from a behavioural and a psychological point of view (Hollebeek, 2019; Jaakkola & Aarikka-Stenroos, 2019; Nyadzayo et al., 2020). The existing research recognises affective, cognitive and behavioural dimensions of customer engagement (Hollebeek, 2019; Ng et al., 2020; Wang, 2020). The affective dimension of customer engagement indicates a positive feeling toward a seller and a willingness or tendency to engage (Ng et al., 2020; Steward et al., 2018). The cognitive dimension involves collaboration and knowledge sharing. Cognitive engagement brings advantages to buyer-seller business relationships. From a buyer's point of view, collaboration and knowledge sharing help a buyer learn new information about a product, a service, or a company. From the point of view of a seller, cognitive engagement helps to understand a buyer's actual needs by using direct communication with a buyer (Hardwick & Anderson, 2019). The behavioural dimension of customer engagement refers to active actions, including buying behaviour, referrals, responses to promotional efforts or feedback (Wang, 2020).

Existing research highlights the importance of customer engagement in value co-creation (Hardwick & Anderson, 2019; Yu et al., 2020). Extant literature offers examples of co-developing, influencing or mobilising behaviour or knowledge sharing (Alexander & Jaakkola, 2015). Many studies consider the impact of customer engagement in the development and maintenance of long-lasting instead of transactional business relationships (Ng et al., 2020). Another part of the existing research considers customer engagement under the lens of the social exchange theory. From this point of view, customer engagement is seen as a two-directional process involving the interaction of both parties - a buyer and a seller (Ng et al., 2020; Nyadzayo et al., 2020). Previous research shows that customer engagement positively impacts satisfaction, behavioural intentions, and loyalty.

2. THEORETICAL FRAMEWORK

2.1 Research problem

Industry 4.0 announced by the German government in 2013, refers to a trend in the industrial sector associated with a high level of automation and industrial information integration. It promotes the adoption of different technologies, including digitalisation, the Internet of Things, process automatisisation, cloud computing, and big data analytics (Szabo et al., 2020). With these changes and the focus on digital transformation, B2B companies must re-organise internal processes, sales and communication channels to improve customer experience (Morgan, 2019). As a result, the focus of companies has shifted towards improving buyer experience. Due to the lack of physical customer contact, B2B companies must learn to understand industrial buyers' needs only through digital communication.

Understanding customer value is critical to any marketing strategy and has been intensively analysed in B2C settings. Building a positive customer experience in B2B settings is different from a B2C experience due to the smaller amount of business partners, complex and more extended decision-making processes, higher customising, and the lower level of adoption of digital tools. Regardless of how digital transformation is implemented, it requires a strong culture and new thinking (Morgan, 2019).

Increasing digitalisation turned the B2B customer experience into a complex and demanding process. B2B buyers have become more demanding regarding response time, customising levels, and quality of communication (Morgan, 2019; Sahin, 2021). A multi-channel and omnipresent marketing strategy addresses customers' needs at every step of their customer journey. B2B companies must address the specific customer values across different channels to provide a positive customer experience. However, this process includes several challenges and risks. Statistically, some 70% of the cases of digital transformation fail (Bucy et al., 2016). To prevent failure and gain customer loyalty, sellers should, among others, better understand the values of their buyers and develop an effective communication strategy with a clear and consistent value proposition.

These gaps show the practical and scientific need for further research on customer experience in a multi-channel B2B industrial environment. For B2B sellers developing customer relations by integrating digital tools is vital and yet an enigma. To bridge these research gaps, the current research attempts to determine what value digital communication channels deliver and to what extent they influence buyer-seller relationships and contribute to creating a B2B customer experience.

2.2 Research goal and research objectives

The current research deepens the understanding of buyer-seller digital communication among industrial companies. The primary goal is to investigate digital communication channels' value to industrial buyers and how they impact B2B customer experience.

The main objective of the research is to assess what attributes of digital communication influence customer experience in B2B buyer-seller relationships among industrial companies. The attributes of communication were derived from the existing technology adoption models and reflect the characteristics of digital communication tools.

To achieve the primary goal, the following secondary objectives have been developed. First, the current study aims to explore how the choice of digital channels changes with the development of business relationships. Second, the study seeks to understand how complex the purchase process among B2B industrial companies is and who is involved in this process. Third, the study investigates the impact of end-user customer engagement on the relationship between a buyer and a seller and explores its moderating role.

2.3 Research questions

The following research questions are addressed in the current research:

RQ1: What communication tools do B2B industrial companies use?

RQ1a: What communication tools do B2B industrial companies use to get information about a product, a service, or a company before the first contact with a seller?

RQ1b: What communication tools do B2B industrial companies use to get information about a product, a service, or a company during the existing business relationships with a seller?

RQ2: What attributes of communication are significant in buyer-seller relationships?

RQ3: To what extent does digital communication in buyer-seller relationships influence customer loyalty among B2B industrial companies.

RQ4: How does end-user customer engagement affect the relationships between industrial buyers and sellers?

RQ5 How complex is the decision-making process among industrial buyers?

2.4 Research hypotheses

- H₁: Information quality has a positive impact on perceived ease of use.
- H₂: Information quality has a positive impact on perceived usefulness.
- H₃: Information quality has a positive impact on satisfaction.
- H₄: Perceived usefulness has a positive impact on satisfaction.
- H₅: Perceived ease of use has a positive impact on perceived usefulness.
- H₆: Perceived enjoyment has a positive impact on perceived usefulness.
- H₇: Service quality has a positive impact on perceived usefulness.
- H₈: Service quality has a positive impact on satisfaction.
- H₉: Satisfaction has a positive impact on customer loyalty.
- H₁₀: End-user engagement has a positive moderation effect on the relationships between satisfaction and customer loyalty.
- H₁₁: Customer engagement has a positive impact on customer loyalty.
- H₁₂: End-user engagement has a positive impact on customer loyalty.

2.5 Conceptual framework

The conceptual framework (*Fig. 2.1*) of the research was inspired by the existing intention-based behavioural theories on technology acceptance: Theory of Reasoned Actions (Fishbein & Ajzen, 1975), Technology Acceptance Model (Davis, 1989), the IS success model (DeLone & McLean, 1992, 2003) and the Seddon model (Seddon, 1997). TAM introduces two main attributes of adopting new technology - perceived usefulness and perceived ease of use. The IS success model helps to understand the importance of information and service quality in the attitude toward digital technology. The Seddon model helps connect satisfaction and system usage with the system's quality and information. More detailed information about the abovementioned theories is presented in chapter 1.4).

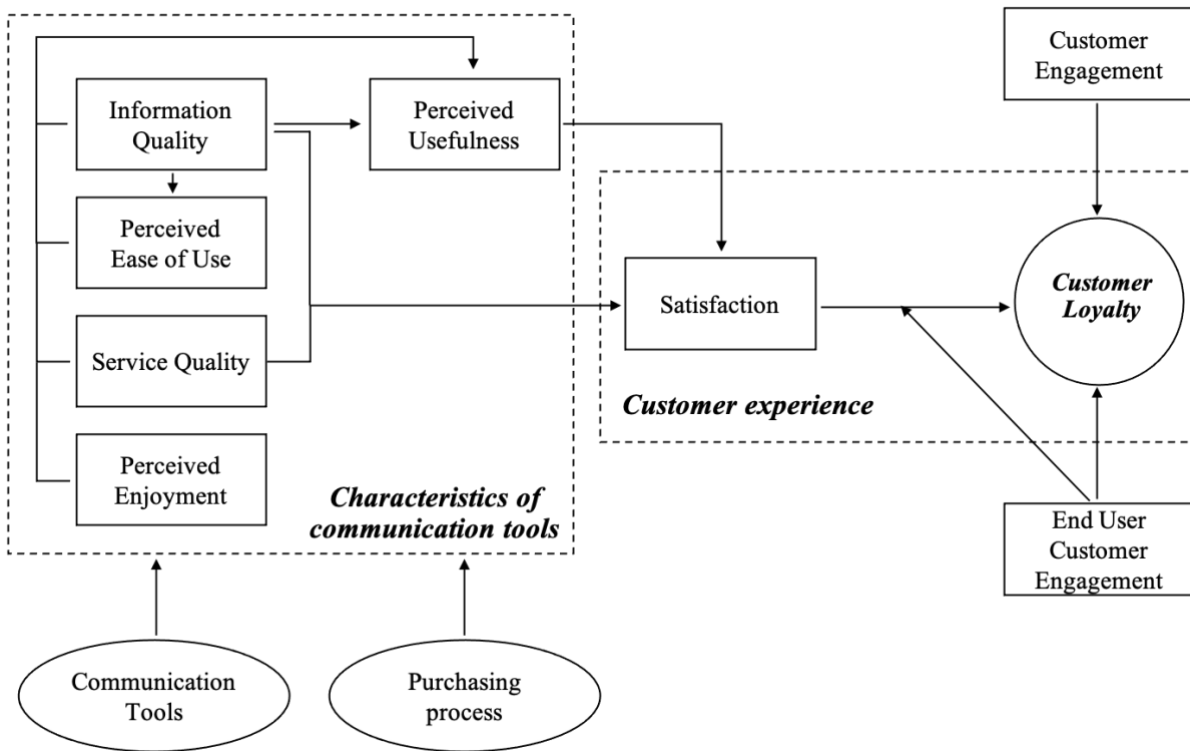


Fig. 2.1: Conceptual framework. Source: Author.

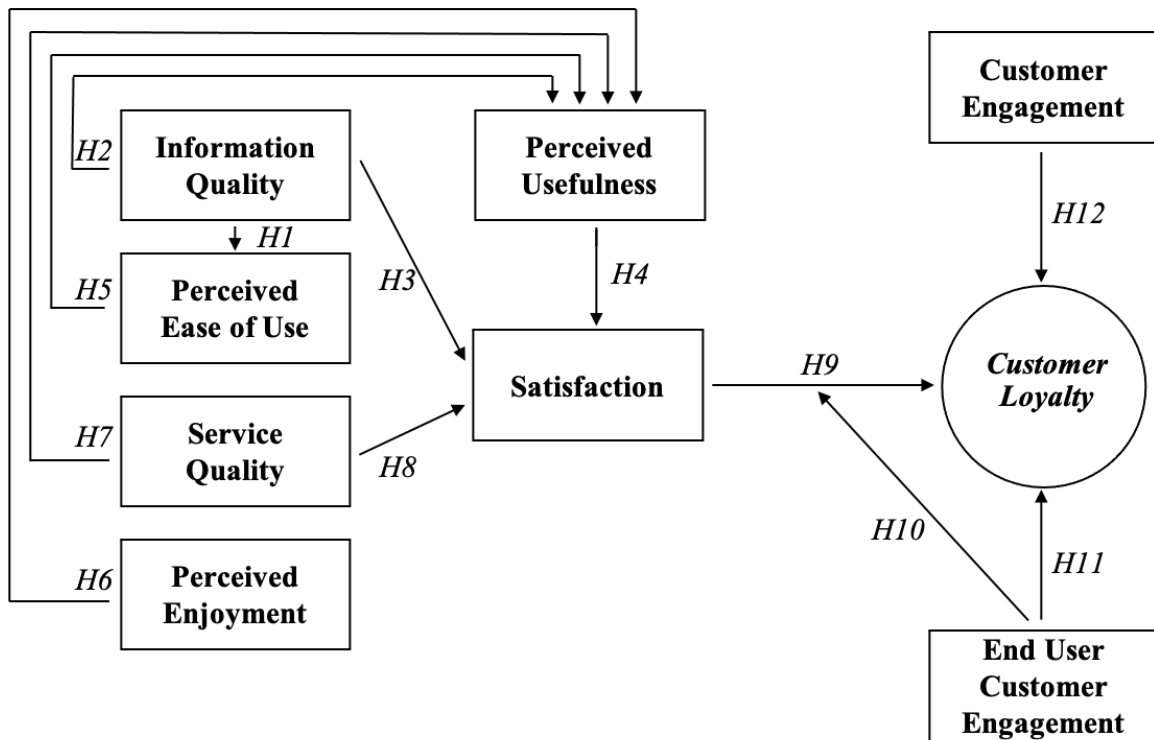


Fig. 2.2: Graphical depiction of the research hypotheses. Source: Author.

3. METHODOLOGY

3.1 Research design

The research aimed to identify to what extent communication influences customer loyalty in buyer-seller relationships among B2B industrial companies. The research grid is presented in *Fig. 3.1*.

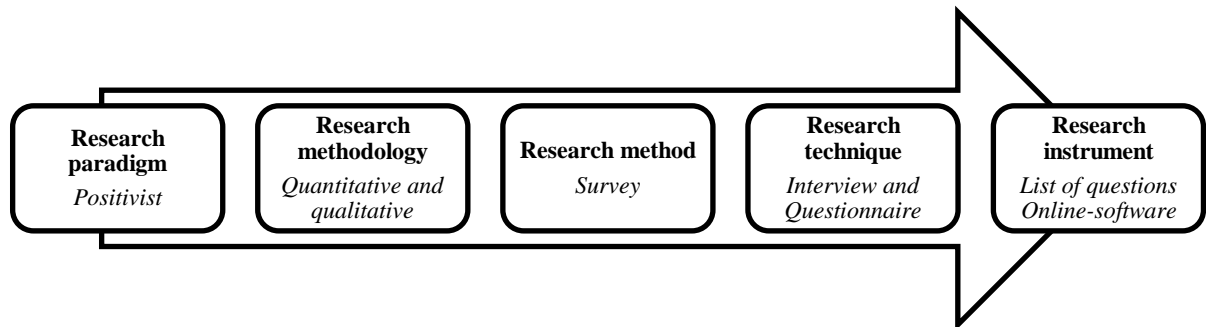


Fig. 3.1: The research hierarchy. Source: Author.

The research used a multi-domain approach to fulfil the research goals and objectives and gain a deep understanding of the research domain-based outlined in *Fig. 3.2*. First, the literature review was conducted to identify the best practices in B2B customer loyalty research. A theoretical framework and the research instruments have been determined based on the literature review. In the next step, some expert interviews have been conducted to increase the understanding of the research problem and validate the theoretical framework. Next, a couple of interviews with experts in the academic field and a pilot study were conducted to validate the chosen survey instrument. Upon validation of the research instrument, an online survey has been provided on a platform of one of the leading research agencies in Europe. The collected data have been analysed using PLS-Modelling with the help of the software SmartPLS3.0.

3.2 Research approach

The current research used both exploratory and descriptive research. Descriptive research was used to describe the adoption of communication tools and represented the primary approach in the current research. Exploratory research was primarily used in the early stage of the research and during the online survey to specify the answers.

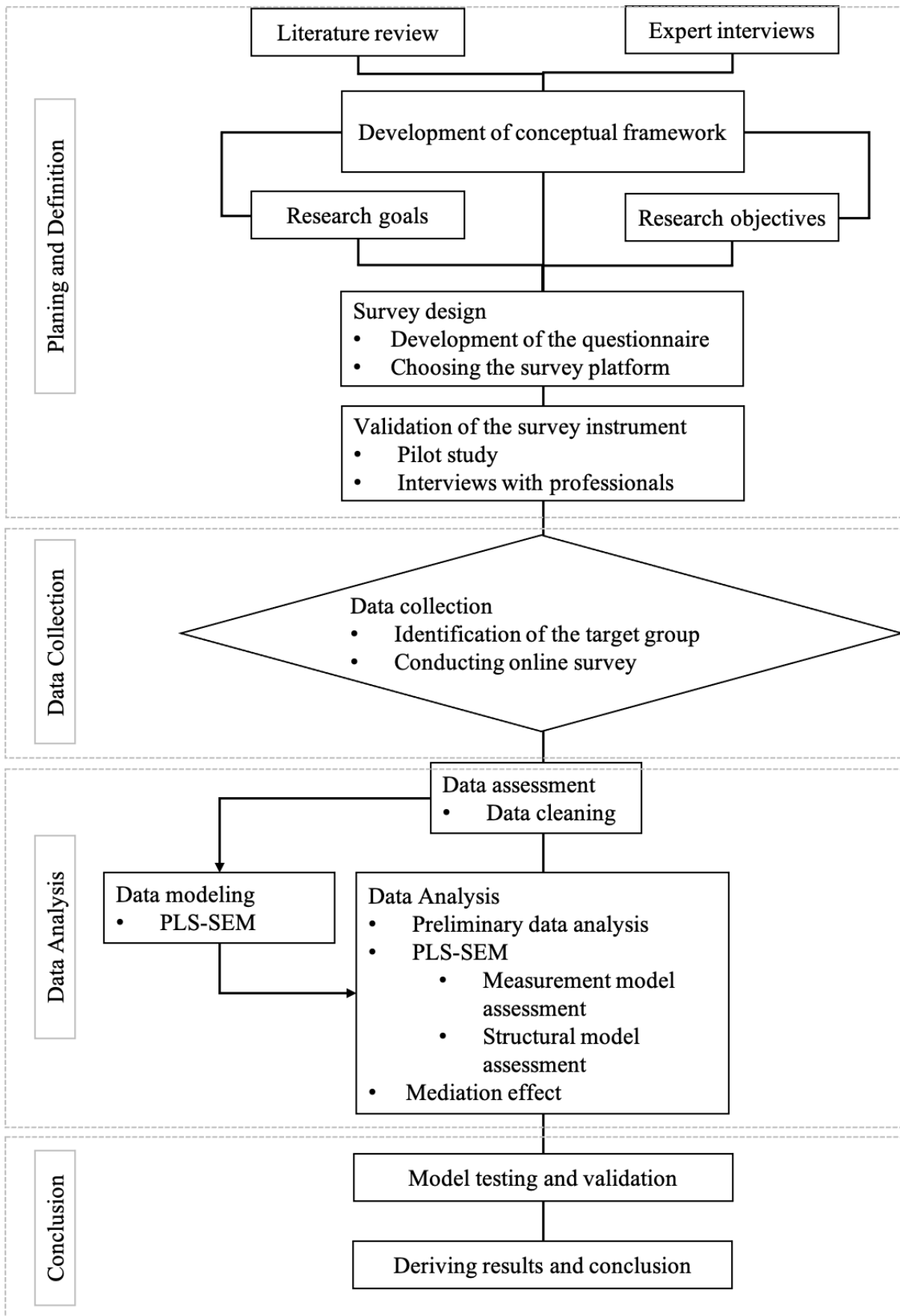


Fig. 3.2: Research design. Source: Author.

As part of the introduction to the descriptive research, the exploratory research was conducted in the form of secondary data analysis and expert interviews. The main objective of the secondary data analysis was to identify the level of adoption of communication tools among B2B companies and to identify the tools themselves. The identified tools were included in the survey questionnaire in the following research step. The main objective of the expert interviews was to specify the findings of the secondary data analysis and explain the relationships between the variables. Later on, the conclusions of the interviews were integrated into the results of the descriptive research.

After the exploratory research, descriptive research in the form of an online survey was conducted. The online survey included a structured questionnaire with mostly pre-formulated closed questions in a predetermined sequence (Sreejesh et al., 2014).

The research used a mixed approach combining qualitative and quantitative research methods. However, the primary part of the study was entirely quantitative in nature with a partial segment of the qualitative methods. Qualitative research has been adopted to understand the research's status quo better and validate the selected research instrument. Four semi-structured expert interviews were conducted to verify the theoretical framework of the research, and some other interviews were open-ended and aimed to verify the selected instrument. A pilot study was conducted to test and verify the questions and the online survey.

The quantitative research method was used to obtain the information required to cover the research questions and test hypotheses. Statistical data were used to collect data and provide their analysis. The study used open and closed-ended questions to connect quantitative and qualitative research methods in the online survey. Herewith the secondary goal of the research - to understand the level of adoption of digital communication tools among the respondents – was reached.

3.3 Description of the measurement items

The measurement items for our study were adapted from previous research. Table 3.1 defines the variables used in the current research, adapted from the previous studies. Appendix B provides the list of measurement items and the evidence of the supporting literature. The current study operationalises customer experience by employing the constructs of satisfaction and customer loyalty. Communication attributes are derived from various technology adoption models and operationalised by the constructs of perceived ease of use, perceived usefulness, information quality and perceived enjoyment.

Table 3.1 Definition of variables. Source: Author.

Variable	Definition	Supporting literature
Information quality	Information quality is a user's perception of the goodness and usefulness of the information in an information system.	(Hilligoss & Rieh, 2008)
Perceived usefulness	Perceived usefulness reflects a user believing that using the technology will enhance his or her performance.	(Siamagka et al., 2015)
Perceived ease of use	Perceived ease of use reflects the extent to which a person believes using technology will be free of effort.	(Davis, 1989)
Perceived enjoyment	Perceived enjoyment refers to the perception that a product, service, or technology is enjoyable, pleasant, or interesting.	(Venkatesh, 2000)
Service quality	Service quality reflects the degree of support delivered by the service provider.	(Chen et al., 2013; DeLone & McLean, 2003)
Satisfaction	Satisfaction is a process of evaluating a purchase experience based on comparing expectations with results.	(Gil-Saura et al., 2009)
Customer loyalty	Customer loyalty is a deeply held commitment to rebuy consistently or re-patronise a specific product or service.	(R. L. Oliver, 1997)
Customer engagement	Customer engagement extends a customer's emotional and rational bond with a brand or a company.	(Steward et al., 2018; Vivek et al., 2012)

The perceived ease of use and usefulness dimensions were adapted from the previous research on technology adoption.

The “currency” dimension of information quality refers to up-to-date information (Hilligoss & Rieh, 2008; Yeolib Kim & Peterson, 2017; McKnight et al., 2017). The “accuracy” dimension refers to a user’s perception that the data are error-free and correct (Chen et al., 2013; Hilligoss & Rieh, 2008; Yeolib Kim

& Peterson, 2017; McKnight et al., 2017; Ukpabi & Karjaluo, 2018). The “relevancy” or “usefulness” dimension refers to a user’s perception that the information obtained from the touchpoints is helpful to a particular task or in a decision-making process in general (Chen et al., 2013; Hänninen & Karjaluo, 2017; McKnight et al., 2017; S. Sohn, 2017; Ukpabi & Karjaluo, 2018). The “completeness” refers to a user’s perception that no data are missing (Hänninen & Karjaluo, 2017; Yeolib Kim & Peterson, 2017; McKnight et al., 2017).

The construct of perceived enjoyment has been measured in the existing research by different hedonic phenomena, namely fun (C. L. Hsu & Lin, 2008; Mai et al., 2013; K. Sohn & Kwon, 2020; Valvi & West, 2013), pleasure

(C. L. Hsu & Lin, 2008) or enjoyment (C. L. Hsu & Lin, 2008; K. Sohn & Kwon, 2020). Researchers underline difficulties distinguishing the measurement items of perceived enjoyment but report minor differences. The most frequently used measurement item to operationalise perceived usefulness is fun. In this vein, fun relates more to joy with the absence of seriousness (McKee et al., 2014). Entertainment offers consumers ‘attainment of gratification’ (McKee et al., 2014; M. B. Oliver & Bartsch, 2010). Experience encompasses experiential or a tangible product, an experience which leads to positive emotions (Vorderer et al., 2004). Based on this distinction, the operationalisation of enjoyment could use entertainment instead of fun to emphasise the related questions' behavioural aspect.

Satisfaction in the current study is understood as a dual cognitive and affective response, which has a cumulative manner. The composite approach, which unites behavioural and attitudinal factors, was used likewise to measure customer loyalty.

In the B2B context, customer engagement has a twofold effect. On the one hand, it applies to the business relationships between a buyer and a seller. On the other hand, it considers the interactions between a buyer and an end-user. Due to the derived nature of industrial relationships, the outcome of the engagement with one business partner may influence the relationship with the other partner. Hence, customer engagement was operationalised by employing affective, cognitive, and behavioural dimensions for both the buyer-seller engagement (CE) and the end-user-buyer engagement (CE_EU).

Thus, information quality was measured through five items adapted from (Chen et al., 2013; McKnight et al., 2017; S. Sohn, 2017), perceived ease of use - through six items adapted from (Davis, 1989; S. K. Roy et al., 2018; K. Sohn & Kwon, 2020; Venkatesh, 2000; Venkatesh & Davis, 2000), perceived usefulness - through seven items adapted from (Chen et al., 2013; Davis, 1989; Karjaluo et al., 2014; Siamagka et al., 2015), perceived enjoyment - through three items adapted from (L.-C. Hsu et al., 2013; López-Miguens & Vázquez, 2017; K. Sohn & Kwon, 2020), service quality - through six items adapted from (Chen et al.,

2013; López-Miguens & Vázquez, 2017; S. Yang et al., 2014), satisfaction - through three items adapted from (Chen et al., 2013; López-Miguens & Vázquez, 2017; Oliveira et al., 2017), customer loyalty - through six items adapted from (Čater & Čater, 2010; C. L. Hsu & Lin, 2008; López-Miguens & Vázquez, 2017) and customer engagement - through six items adapted from (Chen et al., 2013; Vivek et al., 2012). All the items were measured on a 5-point Likert scale (from “1=totally agree” to “5=totally not agree”).

3.4 Sampling and questionnaire design

The decision to use that particular survey instrument was based on advantages of an online survey, among which were the ability to reach a more significant number of respondents than in traditional survey methods, the respondents' convince regarding the time of conducting the survey and the device used, the easiness of the survey process and low reaction time (Sreejesh et al., 2014).

A stratified sampling method was used to determine the sample size. The stratification measurement was the distribution of revenue among different industries in Germany. The decision to use the revenue as a stratification measurement instead of the number of people employed was reasoned by the opinion of the author that purchasing decisions have a more significant influence on revenues than on the number of people employed in the industry. The structure of the sample group reflected the structure of the German industry sector based on revenue for the year 2019. The number of responses was pre-defined to represent the weighted number of revenues generated per industry sector (*Fig. 3.3*).

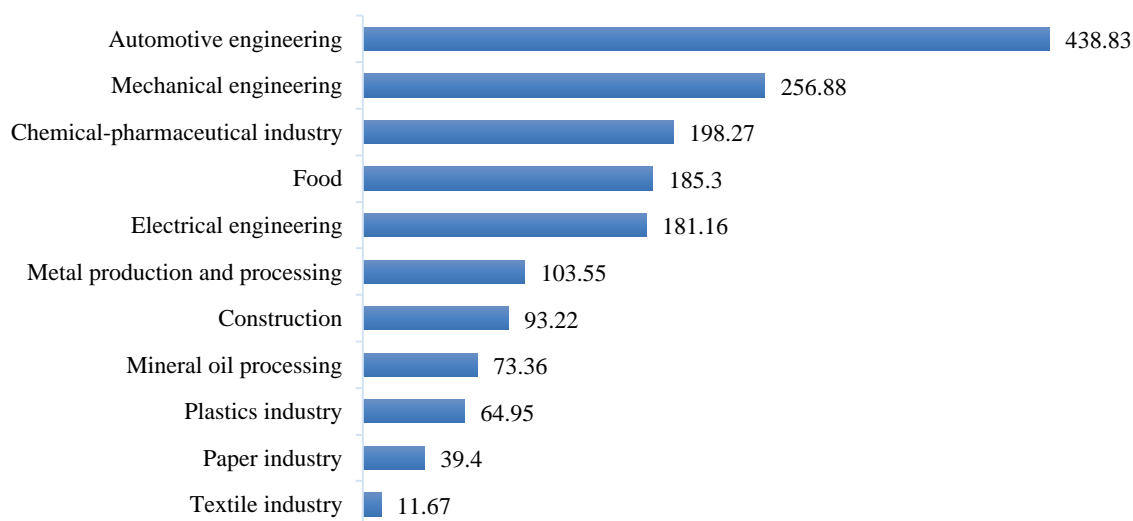


Fig. 3.3: Revenue of the most important industrial sectors in Germany in the year 2019. Source: adapted from Statista (Statista, 2020).

The questions were first designed in English and then translated into German. The questions were collected from the existing research in the English language and have been already validated and verified from the previous research. However, it was important to provide the survey in the mother tongue of the respondents to increase the reliability and validity of the answers. Therefore, the questions have been translated into the German language. The final version of the survey questions in German has been proofread by two peers, both German native speakers.

Once the survey questions were developed, a pilot study was conducted to verify the flow and wordings of the questions. The purpose of the pilot study was to evaluate whether the goal of the survey was clear, how the respondents understood and interpreted the questions and whether the answers helped achieve the desired goal (De Vaus, 2013, p. 114). The pilot study included ten respondents from the target group who tested the survey and provided feedback. Some minor changes, mostly related to the wordings, have been made.

3.5 Data collection

To collect the data, an online survey was used. The survey contained 50 closed and open questions. Ten questions were general questions to collect general information about the respondent and the company, including the industry, the company size and the respondent's position (Table 4.4 to Table 4.7). Four of these questions were closed, six were mixed, and one was an open question (number of years in the current position). The mixed question included the pre-defined answers and "Other (please specify)". The mixed questions covered the industry, occupation, position in the company, number of departments involved in the purchasing decision, and the marketing channels used to communicate with the seller at the start and during the communication. Appendix D provides the list of general questions in English and their German translation.

Forty questions were closed questions with the answers on a 5-point Likert scale (from "1=totally agree" to "5=totally not agree"). These questions had to collect the opinion of the respondents on the relationships with the leading seller/supplier.

To collect the data, a help of a research agency Bilendi (www.bilendi.de) was used. It was decided to use an external service to access the right target group. According to the company's official website, it has a database of 2,2 Million active online panellists in twelve countries (Bilendi GmbH [online], 2021), from which 250 000 panellists were located in Germany. The survey was provided online from March 1, 2021, to March 10, 2021, using the panel offered by the survey company. The target group included the respondents from Germany, who were "registered with the Access Panel, and who have authorised the use of their personal data in order to receive surveys" (Bilendi GmbH, n.d.).

The panellists have received an invitation via e-mail with the relevant information regarding the survey. The invitations explained the goal and informed about the approximate duration of the survey. The e-mail included a link to the panel platform, which could be accessed from multiple devices, including laptops, mobile phones, and tablets. The collected responses were compared with the defined quote for every industry sector. The number of responses from each industry sector had to be held within the defined quotas to ensure the study's validity. The challenge was to collect data from all industries according to the quotas of each sector. If some industry sectors had a low number of responses or were missing, an agent had to invite new representatives of the missing industry sectors.

In total, 3379 respondents took part in the survey. 625 respondents have been screened out through the filtering question referring to the B2B context. The survey has delivered 164 responses, and the response rate accounted for 4,85%.

3.6 Research ethics

Any scientific research, especially involving the human population, should be shaped by three conducts: technically correct, practically efficient, and adhering to ethical norms (Sreejesh et al., 2014). It is essential to consider the project's ethical conduct and responsibilities during the whole research process. The current study guarantees that all procedures have been done to minimise or remove any potential risks or harm to participants.

The current study ensures that all the participants in the research were voluntary. The interviewees were invited directly and were not required to participate in the survey. The survey agency highlights in its terms and conditions that participation in all surveys is made voluntarily. Participation was voluntarily, and all participants had the right to comply with or refuse participation. The requirement of informed consent in the questionnaire or interview survey was fulfilled by informing the participants about the study, its basic procedure, and the importance of private data security for the research. Anonymity and confidentiality were ensured for the questionnaire or interview participants. No personal names or the names of the companies were used in the study. The online survey results received from the survey agency did not include any personal information.

4. ANALYSIS

4.1 Analysis of semi-structured interviews

Before starting with the data assessment, some words need to be said regarding the input of expert interviews in developing the conceptual framework. During the explorative stage of the research, four interviews were conducted to clarify the outcomes of the secondary data analysis. The interviewees were experts in marketing and communication, and their answers helped to extend the understanding of marketing communication from a practical point of view. Two out of four interviewees represented sales and marketing in an industrial company, and the other two were working at advertising agencies. The aim of interviewing sales and marketing managers from an industrial company was to become an idea of how they build communication with their customers. At the same time, the interviewees from advertising agencies provided a holistic approach to a communication strategy based on their experience with multiple customers. The background information regarding the interviewees is presented in Table 4.1.

Table 4.1 Background information on interviewees. Source: Author.

Category	Inter- viewee 1	Inter- viewee 2	Inter- viewee 3	Inter- viewee 4
Company type	Industrial company	Industrial company	Advertising agency	Advertising agency
Area of occupation	Sales manager	Marketing manager	Creative director	Creative director
Number of years of experience in the selected area	10	8	13	20

The duration of each interview was about one hour. Most of the questions were semi-structured—the list of questions is presented in Table 4.2.

To analyse the interview, a two-staged and two-cycled coding process was used. During the first cycle at the first stage, structural coding was used. Structural coding results in the identification of extensive topic contents or concepts (Saldaña, 2016). In the current case, the structural codes represented the identified variables. This method is commonly used in semi-structured interviews with multiple interviewees, and it helps easy access and compare the responses and provides a foundation for further detailed coding (Saldaña, 2016). In the next stage, provisional coding is applied to the structural codes. Provisional coding refers to a pre-defined set of codes generated from a preparatory analysis (Saldaña, 2016), in the current research, a literature review. This method was chosen because the conceptual framework has been already pre-defined.

Table 4.2 Interview questions mapped against research objectives

Research objectives	Interview questions
Enhance understanding of the nature of B2B marketing	What is the level of digital transformation among B2B companies?
	Does digital marketing differ among B2C and B2B companies?
Develop attributes of communication that are important for B2B companies.	What value do B2B companies transit to their customers through digital channels?
Enhance understanding of communication associated with customer engagement and customer loyalty among B2b companies.	What characteristics of information are important for customer loyalty?
	What is the level of engagement of B2B customers with a brand?

In the second cycle, pattern coding was used to similar codes by assembling them together to generate emerging themes or explanations (Saldaña, 2016). The analysis of the expert interviews has been provided manually based on a limited number of interviewees. In order to ensure the validity and reliability of the results, several methods were used during the interviews. To prevent misunderstandings, open questions were asked to clarify vague statements. In order to reduce coding-related errors, a constant comparison between codes and interviewees has been performed. To increase the reliability of the data, triangulation techniques were employed. The main contributions from the expert interviews to the current research are presented in Appendix C. The results helped to enhance the understanding of communication among B2B industrial companies. Some new ideas, e.g., the necessity of understanding the end-user values, has been added to the existing secondary data analysis. Moreover, the analysis of the interviews has shown the importance of personal relationships and perceived usefulness.

Interestingly, interviewees representing industrial companies have provided a less optimistic assessment of the digital communication in their companies compared to their colleagues from the advertising agencies. They did not mention end-user engagement or value co-creation. Moreover, they consider the role of emotions and entertainment unimportant. The advertising agency interviewees have provided a more holistic approach to the communication strategy. This could be explained by the fact that agencies are working with companies that have approached the agency and are more open to changes.

4.2 Data assessment

During the next stage, data cleaning is performed. First, it was evaluated whether the results included missing values. The survey has been initially designed in a way to prevent missing values. All questions were obligatory for the respondents; therefore, no relevant missing values have been detected.¹ Second, the response time has been evaluated. The responses obtained within a time lower than 2 minutes have been deleted. An average response time was about 6 minutes. Next, the tendency has been analysed: the responses with the tendency to the extreme positions have been deleted, e.g., all the answers with the same response variance. The final result included 143 responses.

The overview of the data cleaning per cleaning stage is presented in Table 4.3. The final response rate accounted for 4,22%. The distribution of the final responses per industry is depicted in Table 4.4.

Table 4.3 Data cleaning. Source: Author.

Steps	Items	Lost Items
Invitations in total	3388	
Screened out	625	
Interview total	164	3224
Response time	153	11
Tendency	143	10
Final results	143	

Table 4.4 Distribution of the responses per industry. Source: Author

Industry	Number of companies
Chemical-pharmaceutical industry	20*
Automotive industry or motor vehicle construction	16
Food industry	16
Electronics & electrical engineering	15
Construction industry	14

¹ One missing value has been identified during the evaluation case. The question [Q6] “Which of the following answer options best describes your current job position?” had an answer option “Others (please specify)” and had to be specified in the following questions. However, the question has not been specified, what has been probably caused by mistake by the research company. However, this has not influenced the final results.

Paper industry	8
Mechanical and plant engineering	7
Transport and delivery	7
Plastics industry	6
Metal production and processing	6
Finance and financial services	5
Business support and logistics	4
Agriculture	3
Advertising and marketing	3
Energy industry	2
Real estate	2
Textiles, clothing and leather industry	2
Insurance	2
Mineral oil processing	1
Fastening technology (other)	1
Wholesale wood (other)	1
Education (other)	1
Consumer goods (other)	1

* One response in category 20 (Bau=Costruction) was added to "Construction Industry."

The distribution of the responses per company size is presented in Table 4.5. More than half of 143 companies represented so-called small and medium companies (Europäische Kommission, 2003), 24% of which had 2 to 49 employees and 35% - had 100 to 244 employees. According to the survey results,

41 % of respondents worked in big companies, 3% for companies with more than 10 000 employees.

Out of 143 respondents, 15% had the highest managing position of the CEO, Board of Director or a Manager, 17% were in Administration, Sales or Marketing, 14% were in Procurement and 13% in Project Management. The distribution of the respondents according to their occupation, including other occupational groups, is presented in Table 4.6.

Table 4.5 Distribution of the respondents per company size. Source: Author

Company size	Number of responses
1	1
2 to 49	34
50 to 249	50
250 to 999	31
1000 to 2499	9
2500 to 9999	13
over 10 000	5

Table 4.6 Distribution of the respondents per occupation. Source: Author

Occupation	Number of responses
Administration / Sales / Marketing / Customer Service	24
Management / CEO / Board of Directors	22
Procurement	20
Project Management	19
IT	12
Logistics / Materials Management	11
Finance	10
Business Development	7
Bookkeeping / Accounting	6
Engineering / Research / Development	6
Manufacturing / Production	3
Craftman (other)	2*
Quality Manager	1

* The responses under Category “Other” have been translated from “Bau”=“Constructor” and “Bodenleger”=“Floorer” and added to the group “Craftman”

Table 4.7 depicts the distribution of the respondents according to their position in the company. Most of the respondents (38%) represented middle management, 26% - company management, 20 % - employees with experience, 15% - owners or managers and only 1% - young professionals.

Table 4.7 Distribution of the respondents per position in the company. Source: Author

Position in the company	Number of responses
Middle management	54
Company Management	37
Employee with experience	29
Owner / Management / Management Board	22
Entry-level employee / young professional	1

4.3 Structural equation modelling

Structural equation modelling (SEM) is a comprehensive statistical approach which represents, tests and evaluates multivariate casual relationships. SEM consists of a structural model, measuring the relationships between the variables, and the measurement model, measuring directional and non-directional relationships among the latent variable and its observable indicators. SEM analysis aims to evaluate the degree to which the hypothetical model is supported by the sample data (Schumacker & Lomax, 2010).

There are several reasons why SEM was chosen for the current research. The first reason is based on the ability of SEM to assess complex models with a limited number of variables. (Li, 2016; Schumacker & Lomax, 2010). SEM techniques are commonly used in confirmatory (i.e. hypothesis-testing) exploratory analysis (Li, 2016; Schumacker & Lomax, 2010). Second, it assesses the relationships between measured (observed) variables to each other and between the latent variables and the observed measures of these latent variables (Bollen & Noble, 2011). Third, representing latent variables through multiple indicators ensures a more realistic picture of the variables (Agostini & Nosella, 2016; Bollen & Noble, 2011). Firth, SEM analysis allows the researcher to estimate simultaneous regression equations taking measurement error into account (Bollen & Noble, 2011; Li, 2016; Oberski & Satorra, 2013; Schumacker & Lomax, 2010). In addition, SEM performs effectively in assessing mediating effects (Agostini & Nosella, 2016). Finally, as a statistical tool, SEM includes several methods, such as correlation, multiple regression and factor analysis (Nachtigall et al., 2003), and provides all these analyses within one model.

4.4 Partial least squares structural equation modelling

The partial least squares structural equation modelling (PLS-SEM) is a part of SEM and represents the variance-based approach of SEM. The partial least squares structural equation modelling (PLS-SEM) estimates complex cause-effect relationships in path models with latent and observed variables (Hair et al., 2017). It is often applicable in marketing research (Hair et al., 2012).

PLS-SEM combines factor analysis and regression analysis. On the one hand, the measurement model within PLS-SEM examines the relationship between the latent variables and their measures. It assesses the quality of the constructs – their reliability and validity. It shows whether the set of observed variables represents the underlined construct. On the other hand, the structural model within PLS-SEM specifies how the latent variable is related to each other. It assesses the significance of relationships between the variables and shows whether one variable influences the other.

PLS-SEM generally shows high levels of statistical power with small sample sizes. It delivers robust results for samples with missing values (which need to be below a reasonable level) or not normally distributed. PLS-SEM has been often used in complex relationship models that require multivariable analysis. The chosen method assesses the relationship between the constructs on one side and the path analysis on the other side. It estimates the path relationships in the model to maximise the R^2 value of the endogenous constructs. PLS-SEM is a preferred method used in research for theory development and explanation of variance. A fundamental target construct has to be predicted, or a key "driver" construct has to be identified (Hair et al., 2017).

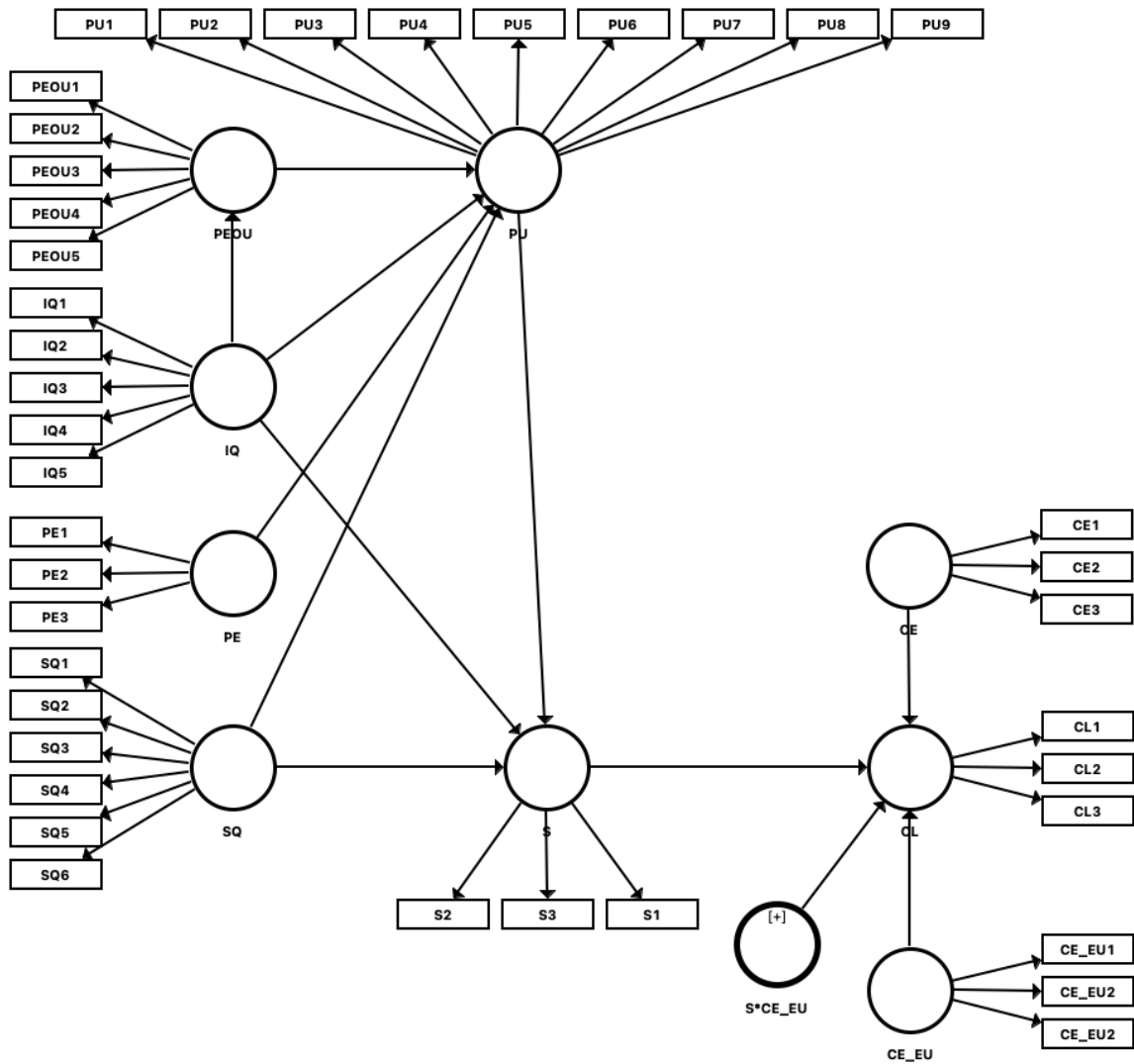


Fig. 4.1: PLS-Model. Source: Author.

4.5 Preliminary data analysis

Once the data have been cleaned and before the actual analysis can be performed, the preliminary analysis has to be made to ensure no violation of the assumptions of normality (Pallant, 2011). Preliminary analysis usually includes descriptive statistics of the variables, including the mean, median, and mode as measures of central tendency and standard deviation, variance, minimum and maximum variables, kurtosis, and skewness as measures of variability (Pallant, 2011). The general assessment of the data from the descriptive statistics, including mean, median, standard deviation, kurtosis, and skewness, are presented in Table 4.8.

Table 4.8 Descriptive statistics. Source: Author.

Construct	No.	Mean	Median	Min	Max
Currency	1	3,364	4	1	5
Accuracy	2	3,434	4	1	5
Relevancy	3	3,776	4	1	5
Completeness	4	3,699	4	1	5
Consistency	5	3,601	4	2	5
Productivity	6	3,783	4	2	5
Useful	7	3,881	4	1	5
Effectiveness	8	3,762	4	1	5
Job / Business performance	9	3,727	4	1	5
Makes job easier	10	3,853	4	1	5
Supports in tasks completion	11	3,601	4	1	5
Entertainment	12	3,441	3	1	5
Attraction	13	3,643	4	1	5
Enjoyment	14	3,608	4	1	5
Easy to learn and use	15	3,748	4	1	5
Navigation (clear and understandable)	16	3,692	4	1	5
No effort	17	3,517	4	1	5
Multichannel	18	3,587	4	1	5
Omnichannel	19	3,559	4	1	5
Problem-solving capability	20	3,615	4	1	5
Valuability	21	3,650	4	1	5
Assistance	22	3,434	4	1	5
Professionalism	23	3,734	4	1	5
Personalisation	24	3,727	4	1	5
Timeliness	25	3,846	4	2	5
Responsiveness	26	3,734	4	1	5
Knowledgeability	27	3,601	4	1	5
Communication quality	28	3,853	4	1	5

Satisfaction	29	3,811	4	2	5
High quality	30	3,804	4	1	5
Positive emotions	31	3,895	4	1	5
End-user affective engagement	32	3,727	4	1	5
End-user cognitive engagement	33	3,678	4	1	5
End-user behavioural engagement	34	3,634	4	1	5
Affective engagement	35	3,601	4	1	5
Cognitive engagement	36	3,783	4	1	5
Behavioural engagement	37	4,063	4	1	5
WOM - recommend	38	3,846	4	1	5
First choice	39	3,769	4	1	5
Re-purchase	40	3,818	4	1	5

In the next step, an assessment of missing values and outliers and the normality test have been carried out. No missing values and outliers have been detected, and all outliers have been deleted while cleaning the data. The normality check was made by assessing the skewness and the kurtosis.

Skewness is the degree of asymmetry of the probability distribution of a random variable about its mean. However, skewness is somewhat irrelevant for surveys based on a Likert scale as the Likert scales are ordinal and not interval, it will be often measured. Different researchers suggest several acceptance criteria for skewness and kurtosis, varying from $-/+1$ to $-/+3$, the most common is the distribution $-/+1$, which will be used in the current study (Boonsiritomachai & Pitchayadejanant, 2019). The only variable with a skewness less than -1 was communication quality. However, the index was very close to -1 ; therefore, it has been decided to leave the variable. Kurtosis reflects the height and sharpness of the central peak relative to that of a standard bell curve. It is more meaningful for the analysis as it indicates sufficient variance.

Kurtosis should be within the range of $-/+2$ is acceptable. All indicators for kurtosis within the sample laid within the accepted range.

The analysis in PLS is usually provided in two steps. It starts with assessing the measurement model in the first step and continues with the structural model in the next step.

4.6 Assessing the measurement model

The first criterion to evaluate the reflective measurement model is the evaluation of internal consistency reliability. Cronbach's alpha assumes that all indicators are equally reliable. Some authors state that Cronbach's alpha is too conservative for PLS-SEM models due to its sensitiveness to the number of items in the scale and often underestimating internal consistency. Moreover, PLS-SEM prioritises indicators according to their individual reliability. Therefore, another method is often used for assessing PLS-SEM models, namely composite reliability.

The threshold for Cronbach's alpha is 0,700. The composite reliability is accepted within the range of 0,700 to 0,900 (Hair et al., 2014).

Convergent validity evaluates how closely a measure correlates positively with alternative measures of the same construct. The measures related to the same construct should correlate more than other constructs. Factor loading and average variance extracted (AVE) should be assessed to measure convergent validity.

The rule of thumb is that standardised factor loadings should exceed the threshold of 0,700 (Hair et al., 2014). The threshold of AVE is 0,5, which is a square root of a standardised indicator's outer (factor) loading.

4.6.1 Factor loadings

Initially, the model was assessed. The results are presented in **Error! Not a valid bookmark self-reference.** The minimum acceptable value for factor loadings should be 0,400, which must be removed from the scale. The indicators with factor loadings between 0,400 and 0,700 have to be removed from the scale only if their deletion increases composite reliability or the average variance extracted (Hair et al., 2014). First, the items with loadings lower than 0,6 have been deleted (Latif et al., 2020). As a result, one item for perceived ease of use (PEOU3=no effort, $w=0,530$) and two items for perceived usefulness (PU1=productivity, $w=0,590$ and PU2=useful, $w=0,522$, PU5=makes job more accessible, $w=0,672$) were deleted. After the deletion of the items, the factor analysis was assessed again.

The factor loadings in the range between 0,600 and 0,700 were analysed in the following step. The deletion of IQ1 (Currency), PEOU5 (Omnichannel), PU6 (Supports in tasks completion), PU9 (Assistance) had a negative effect on discriminant validity, and therefore it was decided to retain the indicator. The deletion of CE3 (Behavioural environment) could cause context validity problems for the construct of customer engagement, and therefore it was decided to retain the indicator. The factor loadings for the remaining constructs are presented in Table 4.10 below.

Table 4.9 Factor loadings: initial analysis. Source: Author

	CE	CE_EU	CL	IQ	PE	PEOU	PU	S	S*CE_EU	CE
CE1	0,795									
CE2	0,823									
CE3	0,681									
CE-EU1		0,884								
CE-EU2		0,837								
CE-EU3		0,834								
CL1			0,790							
CL2			0,713							
CL3			0,764							
IQ1				0,670						
IQ2				0,770						
IQ3				0,784						
IQ4				0,764						
IQ5				0,737						
PE1					0,775					
PE2					0,859					
PE3					0,844					
PEOU1						0,813				
PEOU2						0,815				
PEOU3						0,530				
PEOU4						0,737				
PEOU5						0,678				
PU1							0,596			
PU2							0,522			
PU3							0,699			
PU4							0,707			
PU5							0,672			
PU6							0,631			
PU7							0,685			
PU8							0,771			
PU9							0,655			
S1								0,753		
S2								0,792		
S3								0,767		
S * CE_EU									1,278	
SQ1										0,724
SQ2										0,709
SQ3										0,759
SQ4										0,703
SQ5										0,715
SQ6										0,745

Note: CE1 - *affective engagement*, CE2 - *cognitive engagement*, CE3 - *behavioural engagement*, CE-EU1 – *end-user affective engagement*, CE-EU2 – *end-user behavioural engagement*, CE-EU3 – *end-user cognitive engagement*, CL1 - *first choice*, CL2 - *re-purchase*, CL3 - *WOM - recommend*, IQ1 - *currency*, IQ2 - *accuracy*, IQ3 - *relevancy*, IQ4 - *completeness*, IQ5 - *consistency*, PE1 - *entertainment*, PE2 - *attraction*, PE3 - *enjoyment*, PEOU1 - *easy to learn and use*, PEOU2 - *navigation (clear and understandable)*, PEOU3 - *no effort*, PEOU4 – *multi-channel*, PEOU5 - *omnichannel*, PU1 - *productivity*, PU2 - *useful*, PU3 - *effectiveness*, PU4 - *job / business performance*, PU5 - *makes job easier*, PU6 - *supports in tasks completion*, PU7 - *problem-solving capability*, PU8 - *valuability*, PU9 - *assistance*, S * CE-EU – *moderation effect of end-user engagement on the relationship between satisfaction and customer loyalty*, S1 - *satisfaction*, S2 - *high quality*, S3 - *positive feelings*, SQ1 - *professionalism*, SQ2 - *personalisation*, SQ3 - *timeliness*, SQ4 - *responsiveness*, SQ5 - *knowledgeability*, SQ6 - *communication quality*.

Table 4.10 Factor loadings: results. Source: Author

	CE	CE_EU	CL	IQ	PE	PEOU	PU	S	S*CE_EU	SQ
CE1	0,795									
CE2	0,823									
CE3	0,681									
CE-EU1		0,884								
CE-EU2		0,834								
CE-EU3		0,837								
CL1			0,790							
CL2			0,713							
CL3			0,764							
IQ1				0,668						
IQ2				0,766						
IQ3				0,786						
IQ4				0,765						
IQ5				0,738						
PE1					0,774					
PE2					0,856					
PE3					0,848					
PEOU1						0,798				
PEOU2						0,823				
PEOU4						0,763				
PEOU5						0,698				
PU3							0,696			
PU4							0,718			
PU6							0,617			

PU7							0,733			
PU8							0,801			
PU9							0,711			
S1								0,754		
S2								0,790		
S3								0,768		
S * CE_EU									1,278	
SQ1										0,730
SQ2										0,708
SQ3										0,755
SQ4										0,705
SQ5										0,711
SQ6										0,746

Note: CE1 - affective engagement, CE2 - cognitive engagement, CE3 - behavioural engagement, CE-EU1 – end-user affective engagement, CE-EU2 – end-user behavioural engagement, CE-EU2 – end-user cognitive engagement, CL1 - first choice, CL2 - re-purchase, CL3 - WOM - recommend, IQ1 - currency, IQ2 - accuracy, IQ3 - relevancy, IQ4 - completeness, IQ5 - consistency, PE1 - entertainment, PE2 - attraction, PE3 - enjoyment, PEOU1 - easy to learn and use, PEOU2 - navigation (clear and understandable), PEOU3 - no effort, PEOU4 – multi-channel, PEOU5 - omnichannel, PU1 - productivity, PU2 - useful, PU3 - effectiveness, PU4 - job / business performance, PU5 - makes job easier, PU6 - supports in tasks completion, PU7 - problem-solving capability, PU8 - valuability, PU9 - assistance, S * CE-EU – moderation effect of end-user engagement on the relationship between satisfaction and customer loyalty, S1 - satisfaction, S2 - high quality, S3 - positive feelings, SQ1 - professionalism, SQ2 - personalisation, SQ3 - timeliness, SQ4 - responsiveness, SQ5 - knowledgeability, SQ6 - communication quality.

4.6.2 Reliability and validity

Discriminant validity demonstrates how a measure of a construct is genuinely distinct from another measure whose underlying constructs are conceptually unrelated. There are three ways to assess discriminant validity: by examining cross-loadings, the Fornell-Larcker criterion and a relatively new method, the heterotrait-monotrait ratio of correlations (HTMT). All three of them are assessed in the current research and are presented in Table 4.11.

Table 4.11 Construct Reliability and validity. Source: Author.

	Cronbach's Alpha	rho_A	Composite Reliability	AVE
CE	0,654	0,672	0,812	0,591
CE_EU	0,811	0,814	0,888	0,726
CL	0,625	0,625	0,800	0,572
IQ	0,802	0,809	0,862	0,556
PE	0,768	0,775	0,866	0,683
PEOU	0,772	0,774	0,855	0,596
PU	0,808	0,817	0,862	0,511
S	0,660	0,660	0,815	0,594
S*CE_E	1,000	1,000	1,000	1,000
SQ	0,821	0,822	0,870	0,527

Note: CE - *customer engagement*, CE-EU – *end-user engagement*, CL – *customer loyalty*, IQ – *information quality*, PE – *perceived enjoyment*, PEOU – *perceived ease of use*, PU – *perceived usefulness*, S * CE-EU - *moderation effect of end-user engagement on the relationship between satisfaction and customer loyalty*, S - *satisfaction*, SQ – *service quality*.

Cross-loadings depict the idea that the discriminant validity could be established when the indicators of the associated construct correlate stronger and have higher loadings to the same construct than to different constructs. The cross-loadings should have at least a 0.10 difference to factor loadings to another construct to establish a discriminant validity (Jamali et al., 2018). If an item correlated to several constructs, it created the content issue and, therefore, should be deleted from the model.

Table 4.12 represents the results of the cross-loadings. The cross-loadings of the associated constructs were greater than the loadings to other constructs. A more detailed cross-loading analysis of the variables will be provided later within the factor-loadings comparison.

Table 4.12 Cross-loadings. Source: Author

	CE	CE_EU	CL	IQ	PE	PEOU	PU	S	S*CE_EU	SQ
CE1	0,795	0,717	0,548	0,418	0,414	0,468	0,474	0,569	-0,201	0,478
CE2	0,823	0,384	0,593	0,343	0,376	0,294	0,374	0,443	-0,142	0,398
CE3	0,681	0,327	0,432	0,354	0,186	0,260	0,296	0,429	-0,069	0,413
CE-EU1	0,592	0,884	0,550	0,378	0,465	0,444	0,498	0,546	-0,158	0,555
CE-EU2	0,526	0,834	0,498	0,426	0,422	0,403	0,475	0,541	-0,183	0,572
CE-EU3	0,478	0,837	0,503	0,337	0,450	0,362	0,522	0,539	-0,133	0,523
CL1	0,478	0,530	0,790	0,234	0,414	0,317	0,403	0,342	0,036	0,346
CL2	0,517	0,409	0,713	0,340	0,279	0,268	0,433	0,455	0,003	0,531
CL3	0,563	0,440	0,764	0,256	0,305	0,392	0,362	0,446	0,074	0,400
IQ1	0,189	0,334	0,166	0,668	0,284	0,298	0,297	0,442	-0,087	0,410
IQ2	0,347	0,251	0,214	0,766	0,311	0,298	0,317	0,382	0,021	0,383
IQ3	0,358	0,373	0,370	0,786	0,366	0,431	0,463	0,437	0,029	0,511
IQ4	0,424	0,318	0,285	0,765	0,332	0,401	0,374	0,449	-0,080	0,451
IQ5	0,435	0,364	0,290	0,738	0,466	0,532	0,531	0,406	0,061	0,477
PE1	0,327	0,395	0,399	0,395	0,774	0,551	0,571	0,381	0,144	0,373
PE2	0,411	0,457	0,369	0,378	0,856	0,588	0,584	0,451	0,031	0,480
PE3	0,344	0,444	0,330	0,420	0,848	0,623	0,677	0,537	0,121	0,515
PEOU1	0,355	0,350	0,342	0,473	0,564	0,798	0,556	0,489	0,081	0,419
PEOU2	0,436	0,366	0,381	0,457	0,516	0,823	0,536	0,509	0,070	0,390
PEOU4	0,387	0,365	0,370	0,386	0,566	0,763	0,581	0,481	0,045	0,429
PEOU5	0,190	0,384	0,237	0,352	0,553	0,698	0,562	0,474	0,046	0,450
PU3	0,439	0,464	0,457	0,455	0,476	0,450	0,696	0,400	0,028	0,497
PU4	0,398	0,422	0,385	0,405	0,555	0,486	0,718	0,387	0,075	0,437
PU6	0,141	0,325	0,217	0,330	0,407	0,405	0,617	0,326	0,096	0,381
PU7	0,351	0,457	0,374	0,377	0,599	0,611	0,733	0,463	0,027	0,524
PU8	0,366	0,477	0,400	0,360	0,651	0,643	0,801	0,528	0,014	0,550
PU9	0,421	0,348	0,408	0,436	0,456	0,463	0,711	0,496	0,008	0,505
S1	0,404	0,401	0,374	0,394	0,483	0,546	0,517	0,754	0,044	0,526
S2	0,461	0,539	0,399	0,463	0,422	0,508	0,403	0,790	-0,045	0,537
S3	0,562	0,522	0,485	0,451	0,390	0,422	0,496	0,768	-0,116	0,628
S * CE_EU	-0,184	-0,185	0,051	-0,009	0,120	0,079	0,053	-0,057	1,000	-0,025
SQ1	0,403	0,499	0,382	0,511	0,473	0,390	0,532	0,533	-0,067	0,730
SQ2	0,306	0,477	0,390	0,350	0,480	0,500	0,568	0,492	0,015	0,708
SQ3	0,534	0,427	0,470	0,505	0,367	0,425	0,468	0,501	0,008	0,755
SQ4	0,312	0,345	0,279	0,428	0,349	0,316	0,423	0,530	0,070	0,705
SQ5	0,352	0,514	0,395	0,369	0,361	0,353	0,443	0,542	0,014	0,711
SQ6	0,506	0,532	0,517	0,471	0,380	0,389	0,516	0,604	-0,131	0,746

Note: CE1 - *affective engagement*, CE2 - *cognitive engagement*, CE3 - *behavioural engagement*, CE-EU1 – *end-user affective engagement*, CE-EU2 – *end-user behavioural engagement*, CE-EU3 – *end-user cognitive engagement*, CL1 - *first choice*, CL2 - *re-purchase*, CL3 - *WOM - recommend*, IQ1 - *currency*, IQ2 - *accuracy*, IQ3 - *relevancy*, IQ4 - *completeness*, IQ5 - *consistency*, PE1 - *entertainment*, PE2 - *attraction*, PE3 - *enjoyment*, PEOU1 - *easy to learn and use*, PEOU2 - *navigation (clear and understandable)*, PEOU3 - *no effort*, PEOU4 – *multi-channel*, PEOU5 - *omnichannel*, PU1 - *productivity*, PU2 - *useful*, PU3 - *effectiveness*, PU4 - *job / business performance*, PU5 - *makes job easier*, PU6 - *supports in tasks completion*, PU7 - *problem-solving capability*, PU8 - *valuability*, PU9 - *assistance*, S * CE-EU – *moderation effect of end-user engagement on the relationship between satisfaction and customer loyalty*, S1 - *satisfaction*, S2 - *high quality*, S3 - *positive feelings*, SQ1 - *professionalism*, SQ2 - *personalisation*, SQ3 - *timeliness*, SQ4 - *responsiveness*, SQ5 - *knowledgeability*, SQ6 - *communication quality*.

Whereas the cross-loading method could be considered relatively liberal, the Fornell-Larcker criterion represents a more conservative way to assess discriminant validity. It compares the square root of the AVE values with the other correlation values among the latent variable. The square root of the AVE should be greater than the construct's highest correlation with any other construct in the latent variable. The results are presented in **Error! Not a valid bookmark self-reference.** Overall, the square roots of the AVEs are all greater than the correlations of these constructs with other latent variables.

Table 4.13 Fornell-Larcker criterion. Source: Author.

	CE	CE_EU	CL	IQ	PE	PEOU	PU	S	S*CE_EU	SQ
CE	0,769									
CE_EU	0,626	0,852								
CL	0,688	0,608	0,756							
IQ	0,481	0,446	0,365	0,746						
PE	0,435	0,523	0,440	0,482	0,827					
PEOU	0,446	0,474	0,433	0,542	0,712	0,772				
PU	0,500	0,585	0,527	0,548	0,742	0,724	0,715			
S	0,624	0,636	0,549	0,567	0,557	0,633	0,614	0,771		
S*CE_EU	-0,184	-0,185	0,051	-0,009	0,120	0,079	0,053	-0,057	1,000	
SQ	0,556	0,645	0,562	0,605	0,556	0,546	0,680	0,737	-0,025	0,726

Note: CE - *customer engagement*, CE-EU – *end-user engagement*, CL – *customer loyalty*, IQ – *information quality*, PE – *perceived enjoyment*, PEOU – *perceived ease of use*, PU – *perceived usefulness*, S * CE-EU - *moderation effect of end-user engagement on the relationship between satisfaction and customer loyalty*, S - *satisfaction*, SQ – *service quality*.

The results of the HTMT are presented in Table 4.14. As seen from the results, some values are above the threshold of 0,90, indicating that the latent constructs could be not distinguishable (Henseler et al., 2014; Karjaluoto et al., 2019). However, the method of cross-loadings and the Fornell-Larcker criterion indicate the discriminant validity of the indicators. The cross-loadings have been analysed to assess whether the measured indicators correlate stronger and have higher loadings to the construct with the value of HTMT over 0,90 than to the same constructs. The result of this analysis is presented in Table 4.15. The research showed that none of the constructs with the HTMT-value above the threshold had cross-loadings with less than 0,1 to other latent variables.

Table 4.14 HTMT. Source: Author

	CE	CE_EU	CL	IQ	PE	PEOU	PU	S	S*CE_EU	SQ
CE										
CE_EU	0,849									
CL	1,065	0,854								
IQ	0,652	0,546	0,503							
PE	0,598	0,662	0,640	0,599						
PEOU	0,621	0,600	0,619	0,666	0,924					
PU	0,674	0,719	0,738	0,666	0,927	0,905				
S	0,940	0,865	0,845	0,777	0,779	0,894	0,827			
S*CE_EU	0,221	0,206	0,063	0,083	0,136	0,089	0,064	0,109		
SQ	0,761	0,787	0,781	0,736	0,692	0,686	0,826	0,991	0,077	

Note: CE - *customer engagement*, CE-EU – *end-user engagement*, CL – *customer loyalty*, IQ – *information quality*, PE – *perceived enjoyment*, PEOU – *perceived ease of use*, PU – *perceived usefulness*, S * CE-EU - *moderation effect of end-user engagement on the relationship between satisfaction and customer loyalty*, S - *satisfaction*, SQ – *service quality*.

Table 4.15 Factor loadings comparison. Source: Author.

CE to CL, HTMT = 1,065	CE	CL	Delta	Result
CE1	0,795	0,548	0,247	> 0,10
CE2	0,823	0,593	0,230	> 0,10
CE3	0,681	0,432	0,249	> 0,10
CL to CE, HTMT = 1,065	CL	CE	Delta	Result
CL1	0,790	0,478	0,312	> 0,10
CL2	0,713	0,517	0,196	> 0,10
CL3	0,764	0,563	0,201	> 0,10
CE to S, HTMT = 0,940	CE	S	Delta	Result
CE1	0,795	0,569	0,226	> 0,10
CE2	0,823	0,443	0,380	> 0,10
CE3	0,681	0,429	0,252	> 0,10
S to CE, HTMT = 0,940	S	CE	Delta	Result
S1	0,754	0,404	0,350	> 0,10
S2	0,790	0,461	0,329	> 0,10
S3	0,768	0,562	0,206	> 0,10
PE to PEOU, HTMT = 0,924	PE	PEOU	Delta	Result
PE1	0,774	0,551	0,223	> 0,10
PE2	0,856	0,588	0,268	> 0,10
PE3	0,848	0,623	0,225	> 0,10
PEOU to PE, HTMT = 0,924	PEOU	PU	Delta	Result
PEOU1	0,798	0,564	0,234	> 0,10
PEOU2	0,823	0,516	0,307	> 0,10
PEOU4	0,763	0,566	0,197	> 0,10
PEOU5	0,698	0,553	0,145	> 0,10
PE to PU, HTMT = 0,927	PU	PEOU	Delta	Result
PE1	0,774	0,571	0,203	> 0,10
PE2	0,856	0,584	0,272	> 0,10
PE3	0,848	0,677	0,171	> 0,10

PU to PE, HTMT = 0,927	PU	PE	Delta	Result
PU3	0,696	0,476	0,220	> 0,10
PU4	0,718	0,555	0,163	> 0,10
PU6	0,617	0,407	0,210	> 0,10
PU7	0,733	0,599	0,134	> 0,10
PU8	0,801	0,651	0,150	> 0,10
PU9	0,711	0,456	0,255	> 0,10
PEOU to PU, HTMT = 0,905	PU	PEOU	Delta	Result
PEOU1	0,795	0,548	0,247	> 0,10
PEOU2	0,823	0,593	0,230	> 0,10
PEOU4	0,681	0,432	0,249	> 0,10
PEOU5	CL	CE	Delta	> 0,10
PU to PEOU, HTMT = 0,905	PU	PEOU	Delta	Result
PU3	0,696	0,450	0,246	> 0,10
PU4	0,718	0,486	0,232	> 0,10
PU6	0,617	0,405	0,212	> 0,10
PU7	0,733	0,611	0,122	> 0,10
PU8	0,801	0,643	0,158	> 0,10
PU9	0,711	0,463	0,248	> 0,10
S to SQ, HTMT = 0,991	S	SQ	Delta	Result
S1	0,754	0,526	0,228	> 0,10
S2	0,790	0,537	0,253	> 0,10
S3	0,768	0,628	0,140	> 0,10
SQ to S, HTMT = 0,991	SQ	S	Delta	Result
SQ1	0,730	0,533	0,197	> 0,10
SQ2	0,708	0,492	0,216	> 0,10
SQ3	0,755	0,501	0,254	> 0,10
SQ4	0,705	0,530	0,175	> 0,10
SQ5	0,711	0,542	0,169	> 0,10
SQ6	0,746	0,604	0,142	> 0,10

Note: CE – *customer engagement*, CL – *customer loyalty*, PE – *perceived enjoyment*, PEOU – *perceived ease of use*, PU – *perceived usefulness*, S – *satisfaction*, SQ – *service quality*, HTMT – *heterotrait-monotrait ratio*.

The cross-loadings analysis of both construct of customer engagement CE and CE_EU has been provided in the same vein. The results have shown that affective engagement CE1 has the cross loading less than 0,1 to end-user affective engagement CE_EU. The deletion of this item could create content validity issues. As the method of cross-loadings and the Fornell-Larcker criterion have indicated the discriminant validity of both customer engagement constructs, it has been decided to leave the item.

Table 4.16 Factor loadings comparison for CE and CE_EU. Source: Author.

CE to CE_EU, HTMT = 0,849	CE	CE_EU	Delta	Result
CE1	0,795	0,717	0,078	≤ 0,10
CE2	0,823	0,384	0,439	> 0,10
CE3	0,681	0,327	0,354	> 0,10
CE_EU to CE, HTMT = 0,849	CE_EU	CE	Delta	Result
CE_EU1	0,884	0,592	0,292	> 0,10
CE_EU2	0,834	0,526	0,308	> 0,10
CE_EU3	0,837	0,478	0,359	> 0,10

Note: CE1 - *affective engagement*, CE2 - *cognitive engagement*, CE3 - *behavioural engagement*, CE-EU1 – *end-user affective engagement*, CE-EU2 – *end-user behavioural engagement*, CE-EU3 – *end-user cognitive engagement*.

4.7 Analysis of the structural model

The measurement model analysis has shown that the construct measures are reliable and valid. Within the next step, the analysis of the structural model, the model’s predictive capabilities and the relationships between the constructs will be examined.

The first step within the structural model analysis is the collinearity analysis. Collinearity or multicollinearity arises when two or multiple indicators are highly correlated. Multicollinearity was assessed and is under the threshold of 5. The results of VIF are presented in Table 4.17. No issues with collinearity were detected as the variance inflation factor (VIF) values for all the constructs were less than the threshold of 5.0 (Hair et al., 2014).

Table 4.17 Collinearity statistics (VIF). Source: Author.

Construct	VIF	Construct	VIF	Construct	VIF
CE1	1,332	PE1	1,422	S *	
CE2	1,355	PE2	1,835	CE_EU	1,000
CE3	1,198	PE3	1,648	S1	1,331
CE_EU1	2,001	PEOU1	1,820	S2	1,405
CE_EU2	1,706	PEOU 3	1,913	S3	1,206
CE_EU3	1,721	PEOU 4	1,474	SQ1	1,594
CL1	1,344	PEOU 5	1,348	SQ2	1,526
CL2	1,178	PEOU 6	1,611	SQ3	1,739
CL3	1,251	PU3	1,751	SQ4	1,614
IQ1	1,525	PU4	1,452	SQ5	1,538
IQ2	1,921	PU6	1,859	SQ6	1,621
IQ3	1,716	PU7	2,088		
IQ4	1,601	PU8	1,538		
IQ5	1,403	PU9	1,820		

Note: CE1 - *affective engagement*, CE2 - *cognitive engagement*, CE3 - *behavioural engagement*, CE-EU1 – *end-user affective engagement*, CE-EU2 – *end-user behavioural engagement*, CE-EU3 – *end-user cognitive engagement*, CL1 - *first choice*, CL2 - *re-purchase*, CL3 - *WOM - recommend*, IQ1 - *currency*, IQ2 - *accuracy*, IQ3 - *relevancy*, IQ4 - *completeness*, IQ5 - *consistency*, PE1 - *entertainment*, PE2 - *attraction*, PE3 - *enjoyment*, PEOU1 - *easy to learn and use*, PEOU2 - *navigation (clear and understandable)*, PEOU3 - *no effort*, PEOU4 – *multi-channel*, PEOU5 - *omnichannel*, PU1 - *productivity*, PU2 - *useful*, PU3 - *effectiveness*, PU4 - *job / business performance*, PU5 - *makes job easier*, PU6 - *supports in tasks completion*, PU7 - *problem-solving capability*, PU8 - *valuability*, PU9 - *assistance*, S * CE-EU – *moderation effect of end-user engagement on the relationship between satisfaction and customer loyalty*, S1 - *satisfaction*, S2 - *high quality*, S3 - *positive feelings*, SQ1 - *professionalism*, SQ2 - *personalisation*, SQ3 - *timeliness*, SQ4 - *responsiveness*, SQ5 - *knowledgeability*, SQ6 - *communication quality*.

In the next step, the relationships between the constructs have been assessed. Bootstrapping was used to analyse the structural model. Table 4.2 and Fig. 4.2 present the results of the path analysis.

Table 4.18 Path coefficients. Source: Author

	Coefficient	Standard Deviation	T-value	P-value
CE -> CL	0,507	0,084	6,031	0,000
CE_EU -> CL	0,290	0,100	2,896	0,004
IQ -> PEOU	0,542	0,058	9,380	0,000
IQ -> PU	0,038	0,062	0,617	0,537
IQ -> S	0,155	0,078	2,001	0,046
PE -> PU	0,350	0,073	4,792	0,000
PEOU -> PU	0,286	0,074	3,867	0,000
PU -> S	0,171	0,094	1,817	0,070
S -> CL	0,060	0,090	0,667	0,505
S*CE_EU -> CL	0,157	0,060	2,634	0,009
SQ -> PU	0,306	0,069	4,453	0,000
SQ -> S	0,526	0,080	6,554	0,000

Note: CE - *customer engagement*, CE-EU – *end-user engagement*, CL – *customer loyalty*, IQ – *information quality*, PE – *perceived enjoyment*, PEOU – *perceived ease of use*, PU – *perceived usefulness*, S * CE-EU - *moderation effect of end-user engagement on the relationship between satisfaction and customer loyalty*, S - *satisfaction*, SQ – *service quality*.

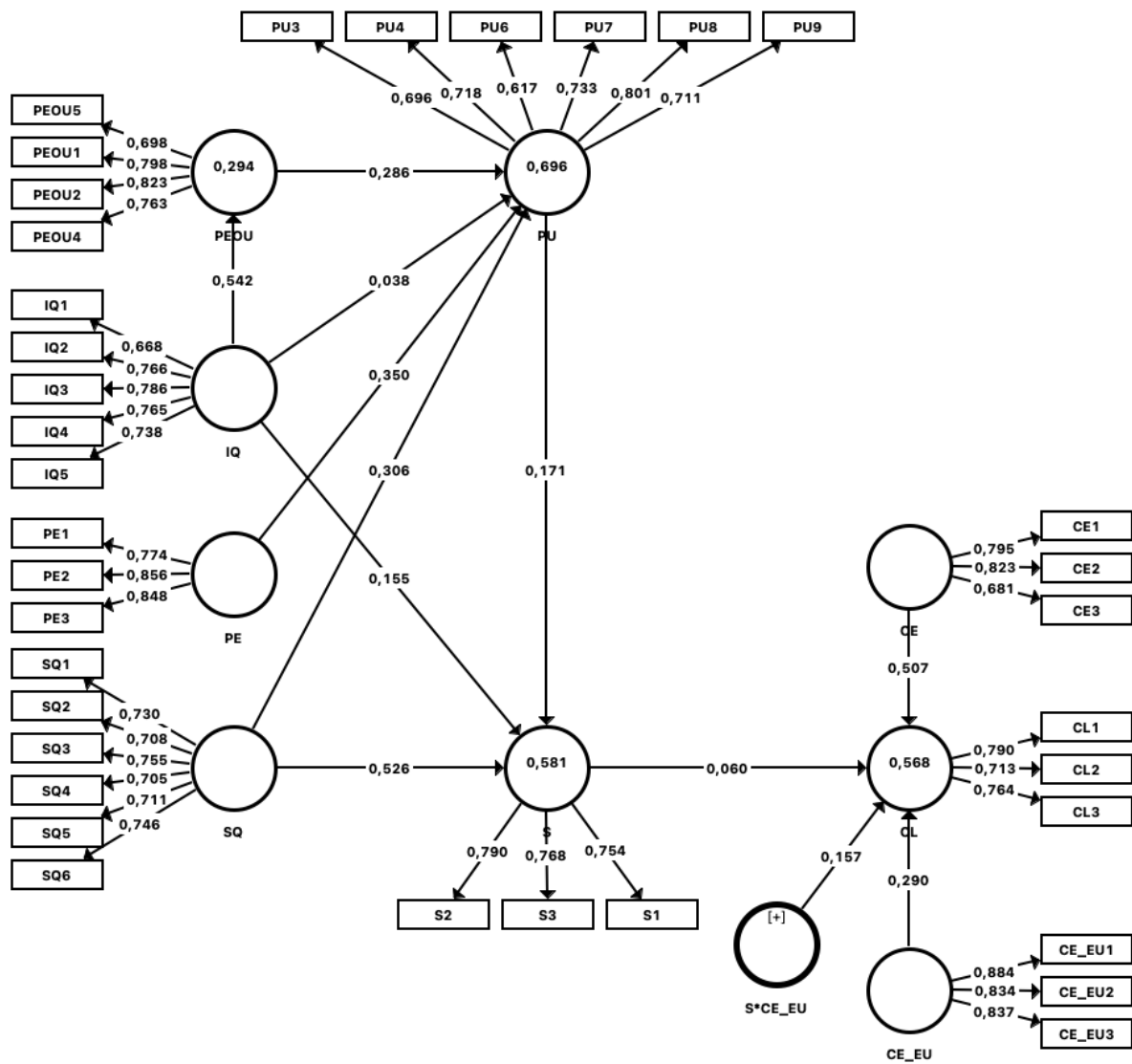


Fig. 4.2: Results of the path analysis. Source: Author.

Note: CE1 - affective engagement, CE2 - cognitive engagement, CE3 - behavioural engagement, CE-EU1 – end-user affective engagement, CE-EU2 – end-user behavioural engagement, CE-EU3 – end-user cognitive engagement, CL1 - first choice, CL2 - re-purchase, CL3 - WOM - recommend, IQ1 - currency, IQ2 - accuracy, IQ3 - relevancy, IQ4 - completeness, IQ5 - consistency, PE1 - entertainment, PE2 - attraction, PE3 - enjoyment, PEOU1 - easy to learn and use, PEOU2 - navigation (clear and understandable), PEOU3 - no effort, PEOU4 – multi-channel, PEOU5 - omnichannel, PU1 - productivity, PU2 - useful, PU3 - effectiveness, PU4 - job / business performance, PU5 - makes job easier, PU6 - supports in tasks completion, PU7 - problem-solving capability, PU8 - valuability, PU9 - assistance, S * CE-EU – moderation effect of end-user engagement on the relationship between satisfaction and customer loyalty, S1 - satisfaction, S2 - high quality, S3 - positive feelings, SQ1 - professionalism, SQ2 - personalisation, SQ3 - timeliness, SQ4 - responsiveness, SQ5 - knowledgeability, SQ6 - communication quality.

4.8 Moderation effect

The hypothesis sought to ascertain the moderating role of customer engagement with an end-user on the relationship between satisfaction and customer loyalty (Fig. 4.3). The results revealed that end-user engagement moderates the relationships between satisfaction and customer loyalty (coefficient=0,157, $t=2,634$, $p=0,009$).

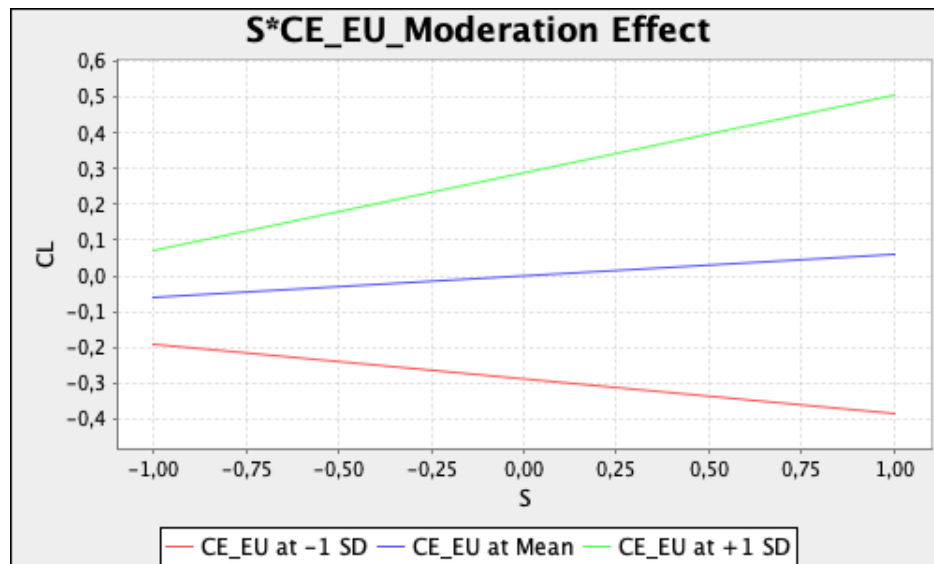


Fig. 4.3: Moderation effect of end-user engagement on the relationship between satisfaction and customer loyalty. Source: Author.

Note: CE-EU – end-user engagement, S – satisfaction, SD – standard deviation.

4.9 Mediating effect

Mediation analysis was performed to assess the mediating role of the constructs on perceived usefulness, satisfaction, and customer loyalty. By assessing mediating effect, three relationships were considered: total effect, direct effect, and indirect effect. The total effect is presented in **Error! Not a valid bookmark self-reference.** With the exclusion of mediating construct perceived ease of use, the impact of information quality on perceived usefulness became insignificant (path coefficient=0,038, $t\text{-value}=0,617$ $p\text{-value}=0,537 > 0,05$). The total indirect effect of information quality on perceived value through perceived ease of use was found to be significant (path coefficient = 0,155, $t\text{-value} = 3,633$, $p\text{-value} = 0,000$). The total effect is occurred by the indirect effect. The result of confidence intervals biased corrected has no zero between the values, and therefore the indirect effect is significant. The mediation analysis has shown no significant impact of any constructs on customer loyalty or satisfaction.

Table 4.19 Total, direct and indirect effect. Source: Author.

Total Effect					
Direction	Coefficient	Sample Mean	Standard Deviation	T-Value	P-Value
CE -> CL	0,507	0,508	0,084	6,031	0,000
CE_EU -> CL	0,290	0,295	0,100	2,896	0,004
IQ -> CL	0,011	0,011	0,018	0,617	0,537
IQ -> PEOU	0,542	0,551	0,058	9,380	0,000
IQ -> PU	0,194	0,199	0,071	2,722	0,007
IQ -> S	0,188	0,191	0,073	2,588	0,010
PE -> CL	0,004	0,004	0,007	0,531	0,595
PE -> PU	0,350	0,348	0,073	4,792	0,000
PE -> S	0,060	0,061	0,034	1,766	0,078
PEOU -> CL	0,003	0,004	0,006	0,483	0,629
PEOU -> PU	0,286	0,290	0,074	3,867	0,000
PEOU -> S	0,049	0,053	0,033	1,470	0,142
PU -> CL	0,010	0,013	0,020	0,524	0,601
PU -> S	0,171	0,179	0,094	1,817	0,070
S -> CL	0,060	0,063	0,090	0,667	0,505
S*CE_EU -> CL	0,157	0,146	0,060	2,634	0,009
SQ -> CL	0,035	0,037	0,053	0,653	0,514
SQ -> PU	0,306	0,307	0,069	4,453	0,000
SQ -> S	0,579	0,578	0,064	9,092	0,000
Direct Effect					
Direction	Coefficient	Sample Mean	Standard Deviation	T-Value	P-Value
CE -> CL	0,507	0,508	0,084	6,031	0,000
CE_EU -> CL	0,290	0,295	0,100	2,896	0,004
IQ -> PEOU	0,542	0,551	0,058	9,380	0,000
IQ -> PU	0,038	0,039	0,062	0,617	0,537
IQ -> S	0,155	0,156	0,078	2,001	0,046

PE -> PU	0,350	0,348	0,073	4,792	0,000
PEOU -> PU	0,286	0,290	0,074	3,867	0,000
PU -> S	0,171	0,179	0,094	1,817	0,070
S -> CL	0,060	0,063	0,090	0,667	0,505
S*CE_EU -> CL	0,157	0,146	0,060	2,634	0,009
SQ -> PU	0,306	0,307	0,069	4,453	0,000
SQ -> S	0,526	0,522	0,080	6,554	0,000
Specific Indirect Effects					
Direction	Coeffi- cient	Sample Mean	Standard Deviation	T- Value	P- Value
SQ -> S -> CL	0,032	0,033	0,048	0,656	0,512
IQ -> PEOU -> PU -> S - > CL	0,002	0,002	0,003	0,482	0,630
PEOU -> PU -> S -> CL	0,003	0,004	0,006	0,483	0,629
PEOU -> PU -> S	0,049	0,053	0,033	1,470	0,142
IQ -> PU -> S	0,007	0,006	0,012	0,534	0,593
PU -> S -> CL	0,010	0,013	0,020	0,524	0,601
IQ -> PEOU -> PU -> S	0,027	0,029	0,018	1,470	0,142
SQ -> PU -> S	0,052	0,055	0,033	1,583	0,114
IQ -> PEOU -> PU	0,155	0,160	0,043	3,633	0,000
IQ -> S -> CL	0,009	0,009	0,016	0,590	0,555
SQ -> PU -> S -> CL	0,003	0,004	0,007	0,483	0,629
IQ -> PU -> S -> CL	0,000	0,000	0,001	0,282	0,778
PE -> PU -> S	0,060	0,061	0,034	1,766	0,078
PE -> PU -> S -> CL	0,004	0,004	0,007	0,531	0,595
Total Indirect Effects					
Direction	Coeffi- cient	Sample Mean	Standard Deviation	T- Value	P- Value
CE -> CL					
CE_EU -> CL					
IQ -> CL	0,011	0,011	0,018	0,617	0,537

IQ -> PEOU					
IQ -> PU	0,155	0,160	0,043	3,633	0,000
IQ -> S	0,033	0,035	0,023	1,421	0,156
PE -> CL	0,004	0,004	0,007	0,531	0,595
PE -> PU					
PE -> S	0,060	0,061	0,034	1,766	0,078
PEOU -> CL	0,003	0,004	0,006	0,483	0,629
PEOU -> PU					
PEOU -> S	0,049	0,053	0,033	1,470	0,142
PU -> CL	0,010	0,013	0,020	0,524	0,601
PU -> S					
S -> CL					
S*CE_EU -> CL					
SQ -> CL	0,035	0,037	0,053	0,653	0,514
SQ -> PU					
SQ -> S	0,052	0,055	0,033	1,583	0,114
Confidence Intervals Bias Corrected					
Direction	Coeffi- cient	Sample Mean	Bias	2.5%	97.5%
CE -> CL					
CE_EU -> CL					
IQ -> CL	0,011	0,011	0,000	-0,026	0,049
IQ -> PEOU					
IQ -> PU	0,155	0,160	0,004	0,073	0,240
IQ -> S	0,033	0,035	0,002	-0,003	0,092
PE -> CL	0,004	0,004	0,001	-0,005	0,023
PE -> PU					
PE -> S	0,060	0,061	0,001	-0,004	0,129
PEOU -> CL	0,003	0,004	0,001	-0,005	0,021
PEOU -> PU					
PEOU -> S	0,049	0,053	0,004	-0,008	0,123

PU -> CL	0,010	0,013	0,002	-0,016	0,062
PU -> S					
S -> CL					
S*CE_EU -> CL					
SQ -> CL	0,035	0,037	0,002	-0,068	0,138
SQ -> PU					
SQ -> S	0,052	0,055	0,003	-0,006	0,125

Note: CE - *customer engagement*, CE-EU – *end-user engagement*, CL – *customer loyalty*, IQ – *information quality*, PE – *perceived enjoyment*, PEOU – *perceived ease of use*, PU – *perceived usefulness*, S * CE-EU - *moderation effect of end-user engagement on the relationship between satisfaction and customer loyalty*, S - *satisfaction*, SQ – *service quality*.

Table 4.20 depicts the individual results of the mediation analysis for perceived ease of use on the relationship of information quality and perceived value.

Table 4.20 Total, direct and indirect effect of PEOU on the relationship IQ to PU. Source: Author.

Direction	Coefficient	Sample Mean	Standard Deviation	T-Value	P-Value
Total Effect					
IQ -> PU	0,194	0,199	0,071	2,722	0,007
Direct Effect					
IQ -> PU	0,038	0,039	0,062	0,617	0,537
Specific Indirect Effects					
IQ -> PEOU -> PU	0,155	0,160	0,043	3,633	0,000
Total Indirect Effects					
IQ -> PU	0,155	0,160	0,043	3,633	0,000
Confidence Intervals Bias Corrected					
Direction	Coefficient	Sample Mean	Bias	2.5%	97.5%
IQ -> PU	0,155	0,160	0,004	0,073	0,240

Note: IQ – *information quality*, PEOU – *perceived ease of use*, PU – *perceived usefulness*.

The next step to evaluate the structural model is the coefficient of determination (R^2), which shows how well the regression model fits the observed data. The values of R square for perceived usefulness are considered substantial, as they are greater than the thumb of 0,67 (K. H. Lee & Che, 2013). The values for satisfaction and customer loyalty are considered moderate, as they are above or close to a rough rule of the value of 0,5, the value accepted by some marketing researchers as moderate (Hair et al., 2014). The perceived ease of use value is considered weak but acceptable (Table 4.21).

Table 4.21 Coefficient of determination (R^2). Source: Author.

	R Square	R Square Adjusted
CL	0,568	0,555
PEOU	0,294	0,289
PU	0,696	0,687
S	0,581	0,572

Note: CL – *customer loyalty*, PEOU – *perceived ease of use*, PU – *perceived usefulness*, S - *satisfaction*.

In addition to evaluating the R square, the effect size f^2 has been examined. The effect size evaluates the impact on the R square when an exogenous variable is removed from the model. The effect size is considered small if $f^2 \geq 0,020$, medium $f^2 \geq 0,150$, or large if $f^2 \geq 0,350$ (Cohen, 1988).

Table 4.22 presents the values of the effect size f^2 analysis. The results show the large effect size of information quality on perceived ease of use ($f^2=0,416$), the medium effect size of customer engagement on customer loyalty ($f^2=0,305$), service quality on satisfaction ($f^2=0,304$), perceived enjoyment on perceived usefulness ($f^2=0,182$), and service quality on perceived usefulness ($f^2=0,165$). The following effect sizes were found to be small: perceived ease of use on perceived usefulness ($f^2=0,117$), customer engagement with the end-user on customer loyalty ($f^2=0,097$), satisfaction on customer loyalty over customer engagement ($f^2=0,088$), information quality on satisfaction ($f^2=0,035$), and perceived usefulness on satisfaction ($f^2=0,035$).

Another indicator of predictive accuracy is the Stone-Geisser's Q^2 indicator of predictive relevance. Blindfolding is used to obtain predictive relevance and is a technique in which data points are progressively deleted, and their original values are predicted. The threshold for predictive relevance Q^2 in reflective PLS models is zero, which shows that the model is well reconstructed and has a predictive relevance (Hair et al., 2014). The results of the predictive relevance for the existing model show that Q^2 for customer engagement, customer loyalty, perceived usefulness and satisfaction are all above zero (Table 4.23), which implies that a model has a predictive variance for these constructs.

Table 4.22 Effect size f^2 . Source: Author.

	CE	CE_EU	CL	PE	IQ	PEOU	PU	S	S*CE_EU	SQ
CE			0,305							
CE_EU			0,097							
CL										
PE							0,182			
IQ						0,416	0,003	0,035		
PEOU							0,117			
PU								0,035		
S			0,004							
S*CE_EU			0,088							
SQ							0,165	0,304		

Note: CE - *customer engagement*, CE-EU – *end-user engagement*, CL – *customer loyalty*, IQ – *information quality*, PE – *perceived enjoyment*, PEOU – *perceived ease of use*, PU – *perceived usefulness*, S * CE-EU - *moderation effect of end-user engagement on the relationship between satisfaction and customer loyalty*, S - *satisfaction*, SQ – *service quality*.

Table 4.23 Predictive relevance. Source: Author.

Construct	SSO	SSE	Q ² (=1-SSE/SSO)
CE	429,000	429,000	
CE_EU	429,000	429,000	
CL	429,000	305,282	0,288
E	429,000	429,000	
IQ	715,000	715,000	
PEOU	572,000	473,718	0,172
PU	858,000	567,535	0,339
S	429,000	291,086	0,321
S*CE_EU	143,000	143,000	
SQ	858,000	858,000	

Note: CE - *customer engagement*, CE-EU – *end-user engagement*, CL – *customer loyalty*, IQ – *information quality*, PE – *perceived enjoyment*, PEOU – *perceived ease of use*, PU – *perceived usefulness*, S * CE-EU - *moderation effect of end-user engagement on the relationship between satisfaction and customer loyalty*, S - *satisfaction*, SQ – *service quality*.

Besides assessing R square as an indicator of predictive accuracy, researchers examine Stone-Geisser's Q^2 value as an indicator of predictive relevance. Blindfolding is used to obtain predictive relevance, and Blindfolding is a sample re-use technique in which data points are progressively deleted, and their original values are predicted. The threshold for predictive relevance Q^2 in reflective PLS models is 0, which shows that the model is well reconstructed and has a predictive relevance (Hair et al., 2014). The results of the predictive relevance for the existing model show that Q^2 for customer engagement, customer loyalty, perceived usefulness and satisfaction are all above zero (Table 4.23), which implies that a model has a predictive variance for these constructs.

4.10 Hypotheses testing

In line with the conceptual framework of this thesis, twelve null hypotheses were established and further tested. For testing null hypotheses, the significance level of 0,05 was applied. If the null hypothesis is rejected, it can be assumed that there is enough evidence to support the alternative hypothesis. The null hypothesis was refused to be accepted if the p-value was less than the significance level of 0,05. In this case, the alternative hypothesis was accepted.

Overall, nine out of twelve hypotheses were supported due to the result produced by the test (Table 4.24).

Table 4.24 Hypotheses testing results. Source: Author.

Nr.	Hypothesis	Direction	T-value	P-value	Result
H ₁	Information quality has a positive impact on perceived ease of use.	IQ -> PEOU	9,380	0,000	accepted
H _{1a}	Information quality has no or a negative impact on perceived ease of use.				rejected
H ₂	Information quality has a positive impact on perceived usefulness.	IQ -> PU	0,617	0,537	rejected
H _{2a}	Information quality has no or a negative impact on perceived usefulness.				accepted
H ₃	Information quality has a positive impact on satisfaction.	IQ -> S	2,001	0,046	rejected

H _{3a}	Information quality has no or a negative impact on satisfaction.				accepted
H ₄	Perceived usefulness has a positive impact on satisfaction.	PU -> S	1,817	0,070	rejected
H _{4a}	Perceived usefulness has no or a negative impact on satisfaction.				accepted
H ₅	Perceived ease of use has a positive impact on perceived usefulness.	PEOU -> PU	3,867	0,000	accepted
H _{5a}	Perceived ease of use has no or a negative impact on perceived usefulness.				rejected
H ₆	Perceived enjoyment has a positive impact on perceived usefulness.	PE -> PU	4,792	0,000	accepted
H _{6a}	Perceived enjoyment has no or a negative impact on perceived usefulness.				rejected
H ₇	Service quality has a positive impact on perceived usefulness.	SQ -> PU	4,453	0,000	accepted
H _{7a}	Service quality has no or a negative impact on perceived usefulness.				rejected
H ₈	Service quality has a positive impact on satisfaction.	SQ -> S	6,554	0,000	accepted
H _{8a}	Service quality has no or a negative impact on satisfaction.				rejected
H ₉	Satisfaction has a positive impact on customer loyalty.	S -> CL	0,667	0,505	rejected

H _{9a}	Satisfaction has no or a negative impact on customer loyalty.				accepted
H ₁₀	End-user engagement has a positive moderation effect on the relationships between satisfaction and customer loyalty.	S*CE_EU -> CL	2,634	0,009	accepted
H _{10a}	End user engagement has no or a negative moderation effect on the relationships between satisfaction and customer loyalty.				rejected
H ₁₁	Customer engagement has a positive impact on customer loyalty.	CE -> CL	6,031	0,000	accepted
H _{11a}	Customer engagement has no or a negative impact on customer loyalty.				rejected
H ₁₂	End user engagement has a positive impact on customer loyalty.	CE_EU -> CL	2,896	0,004	accepted
H _{12a}	End user engagement has no or a negative impact on customer loyalty.				rejected

Note: CE - *customer engagement*, CE-EU – *end-user engagement*, CL – *customer loyalty*, IQ – *information quality*, PE – *perceived enjoyment*, PEOU – *perceived ease of use*, PU – *perceived usefulness*, S * CE-EU - *moderation effect of end-user engagement on the relationship between satisfaction and customer loyalty*, S - *satisfaction*, SQ – *service quality*.

4.11 Achieving secondary objectives

One of the research objectives was to understand the process of making purchasing decisions among the analyzed companies. The survey revealed relatively low complexity of the purchasing process among the respondents. The results show that in most cases (71,4%), two to three departments take part in purchase decisions. About half of the responses (48,3%) report the involvement of only one to two departments. Only 2,8% of the respondents reported a complex purchasing process involving more than six departments (*Fig. 4.4*).

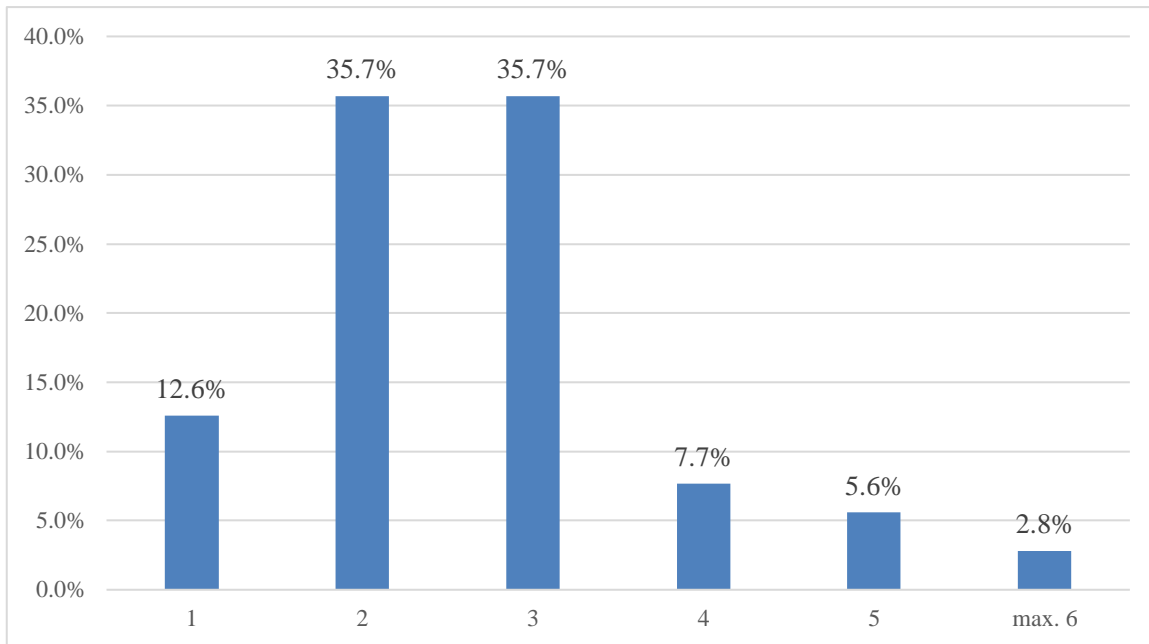


Fig. 4.4: Number of company departments participating in the purchasing decision process. Source: Author.

Almost half of the respondents report a procurement department among the departments, which are the most important for the purchasing process. The 35% to 39% of the respondents document the importance of customer services, e.g., sales or marketing and logistics. Three out of ten respondents mention the involvement of the company management in the purchasing decision process. The involvement of finance services, production, IT, and project management are very similar and vary from 27% to 27%. Engineering, Research and Development are involved in 16% of the companies that participated and Business Development – is in 18% (Table 4.25).

Another supportive objective of the current study was to understand what tools companies use in communication with their supplies and how the communication strategy changes with the development of buyer-seller relationships.

Table 4.25 Involvement of company departments in the purchasing process.
Source: Author.

Company Departments	% from the total number of the respondents
Procurement	45%
Administration / Sales / Marketing / Customer Service	39%
Logistics / Material Management	35%
Management / CEO / Board of Directors	30%
IT	29%
Accounting	27%
Manufacturing / Production	27%
Finance	27%
Project Management	27%
Business Development	18%
Engineering / Research / Development	16%

The resurvey result reveals that the TOP-5 communication tools the companies use to find information about a product or a company, before contacting the company for the first time, are a company website, e-mails, Internet search, direct calls and customer reviews (*Fig. 4.5*).

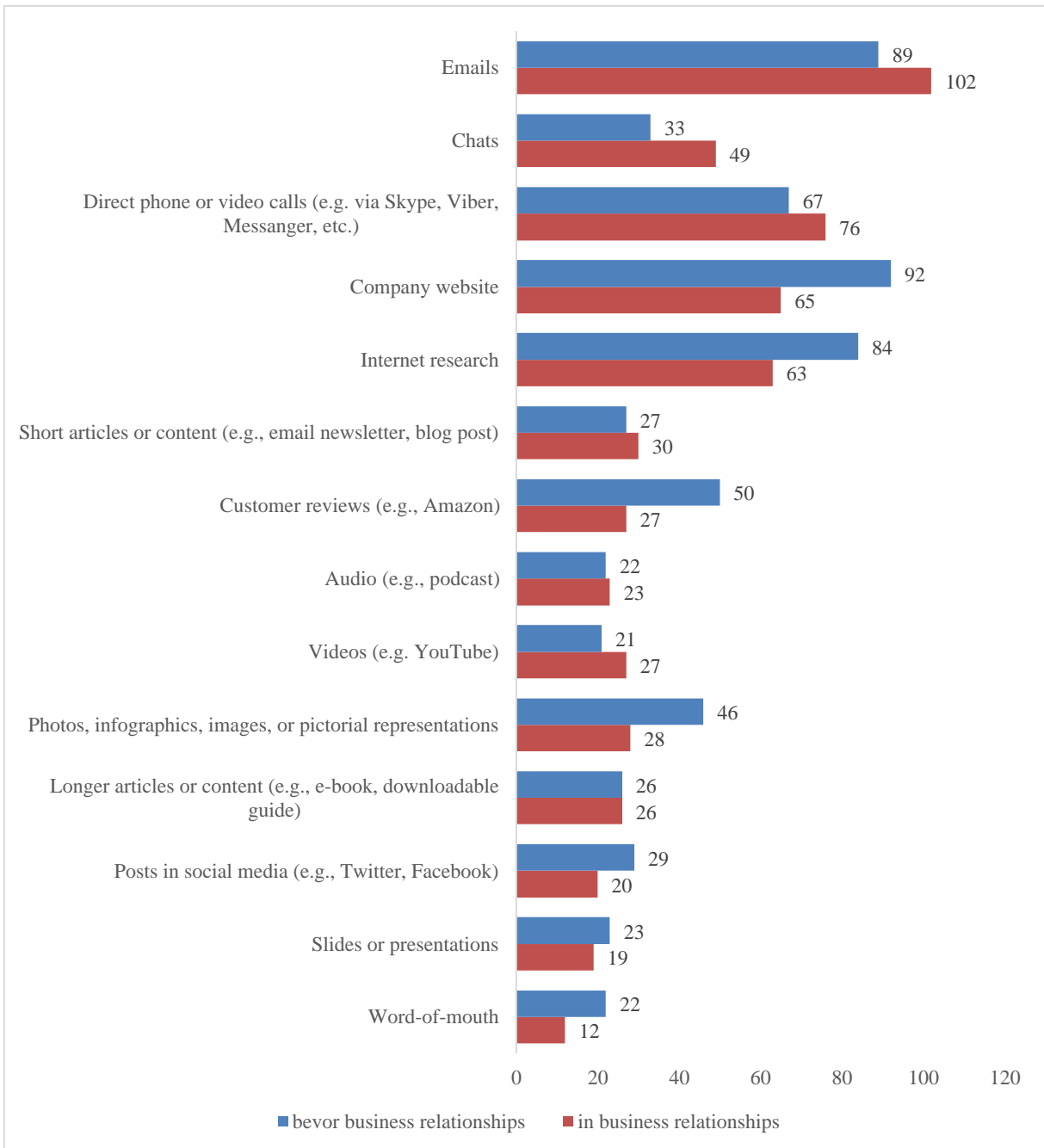


Fig. 4.5: The use of communication tools before and after starting the business relationships with the seller. Source: Author.

Note: in numbers, total number n=143

With the development of the business relationship, this toolset changes. According to the respondents, the most frequently used tools during the existing business relationships with a seller are e-mails, direct phones, and chats. Interestingly, company websites and Internet searches at that stage are still actively used to get information about a product, a service, or a company, even though their usage drops to 15-19 % compared to the early stage of the business relationships. The change in the usage of different communication tools is

depicted in *Fig. 4.6*. It can be seen from the diagram that the most positive change affects chats – the usage of chats increases to 11% after the beginning of the business relationships. The intense time communication tools like a company website or Internet search drops to 19% and 16% respectively. The decrease in the use of a company website represents the most significant negative change (-19%) among all the other communication tools. Customers’ reviews and WOM also experience a negative trend compared to the numbers before the first contact. According to the results, the respondents address customers’ reviews and WOM 16% and 7% less common than before the first contact. The use of graphic content decreases to 13%.

Interestingly, almost half of the respondents (46%) use infographics and similar graphic content at collecting information about a product, service, or company. Furthermore, the survey has shown a slight growth in audio, video, and short textual content. Surprisingly, the use of long content, for instance, articles or whitepapers, has not changed (0%).

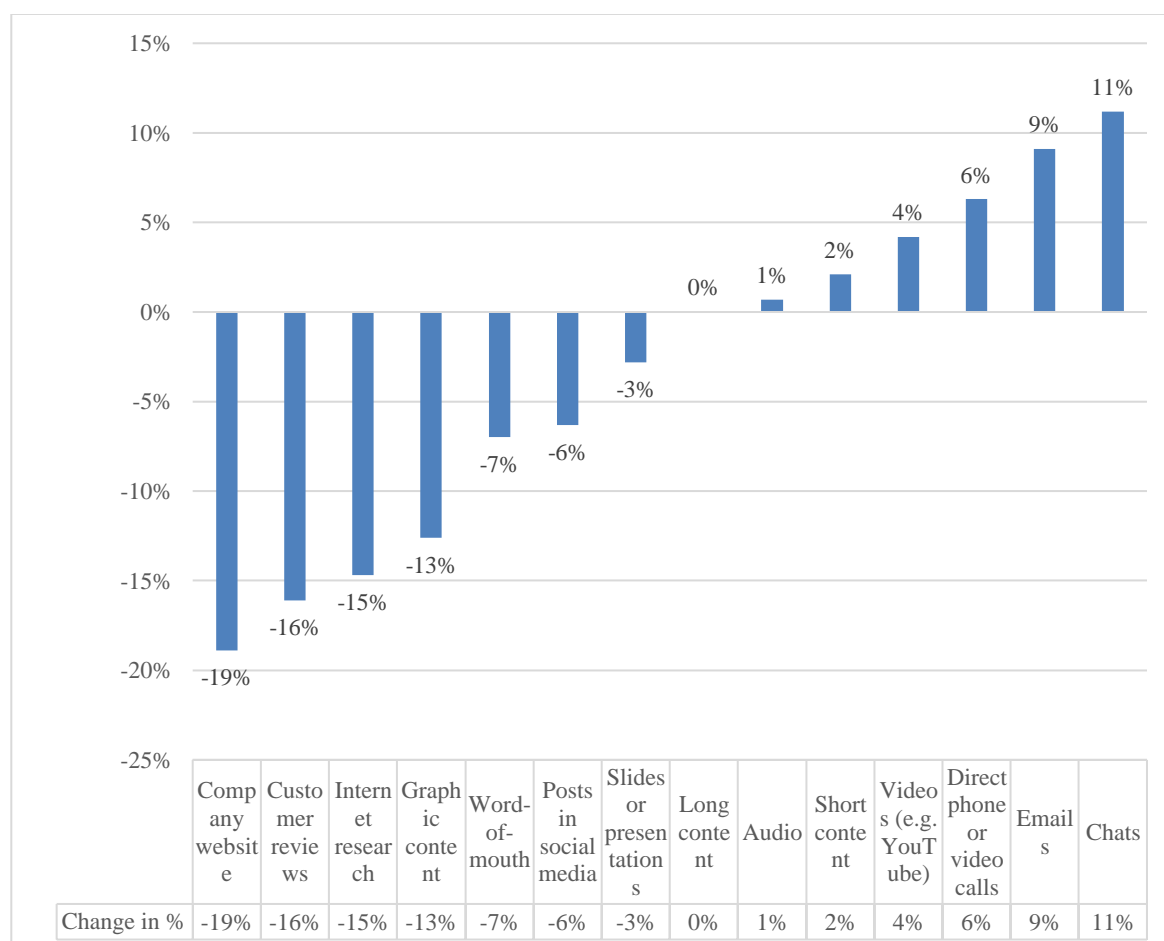


Fig. 4.6: Change in the usage of communication tools before and after starting the business relationships with the seller. Source: Author.

5. MAIN RESULTS AND DISCUSSIONS

In the face of digital transformation and growing digitalization, the question of how buyer-seller communication influences B2B customer experience has received increasing attention in academic and professional research. Digital transformation is often connected to technology adoption theories because digital communication tools are still a novel topic for B2B companies. In order companies build successful business relationships, they need to understand customer value and communicate it throughout diverse digital channels. Previous research focuses on separate marketing channels, such as social media or websites, mainly among B2C companies. The current study expands the technology adoption theories to a multi-channel context and examines buyer-seller relationships from a holistic standpoint. Additionally, the study evaluates the change in the use of communication channels with the development of business relationships and contributes herewith to the marketing communication literature. Moreover, it provides a new viewpoint on customer engagement by adding to the traditional engagement from the standpoint of buyer-seller relationships and the perspective of a buyer's relationship with the end-user.

The study develops a model based on existing technology adoption theories. The proposed theoretical model incorporates different variables, reflecting the communication process's complexity in B2B buyer-seller relationships. The model aims to identify those particular variables that have the most impact on a buyer's experience. The analysis of the survey responses among 143 industrial companies with PLS-SEM outlines the importance of information quality, perceived ease of use, perceived usefulness, and service quality in B2B communication among buyers and sellers.

The primary contribution and strength of the current research lie in extending traditional technology adoption models by combining customer engagement from the perspective of the relationships of a buyer with a seller and an end-user. The findings reflect the derived nature of B2B buyer-seller relationships. They indicate a significant effect of the end-user-engagement on the loyalty of a buyer toward a seller. One of the current research peculiarities lies in providing a holistic insight into communication channels and expanding perceived ease of use with the measures assessing multi-channel and omnipresent marketing. Another contribution involves the examination of a moderation effect of end-user engagement. The findings reflect that the higher the end-user engagement, the stronger the link between satisfaction and customer loyalty. That implies that the strength of satisfaction and customer loyalty vary when end-user customer engagement varies. However, the small effect size of moderating effect on customer loyalty ($f^2=0,088$) and relative low path coefficient (coefficient=0,157) indicate that future research should focus on proving this relationship under different conditions or by using a bigger sample size.

The study reveals that perceived ease of use, perceived enjoyment and service quality are the critical antecedents of perceived usefulness and explain 70% of the variance in this construct. This finding supports evidence from previous observations. For instance, the relationship between perceived ease of use and perceived usefulness refers to the classical outcomes of the TAM. The impact of perceived enjoyment on perceived usefulness was already revealed in the works of Driediger and Bhatiasevi (2019) and Ha and Stoel (2009). Several previous studies confirmed the effect of service quality on perceived usefulness based on the IS success model (Chen et al., 2013; Yoojung Kim & Lee, 2014). These results are likely related to the recent changes in customer relationships. The previous understanding of B2B buyer-seller relationships was based on the idea of rational decision-making. Digitalization has transformed communication not just in private settings but also at work. Customers expect fast and qualitative solutions to their requests (Bough et al., 2020; McKinsey & Company, 2016). They want convenient and easy results, making their job easier and “problems solved before they occur” (MerkleB2B [online], 2020, p. 8). Hence, the trends that have been detected in B2C settings influence B2B relationships as well. The borderline between B2C and B2B customers in terms of communication process becomes even more blurred than before.

Interestingly, the direct impact of information quality on perceived usefulness was statistically not significant. However, the analysis has shown a significant moderating effect of perceived ease of use on the relationships between information quality and perceived usefulness. This means that industrial buyers evaluate the quality of the information they consume through the easiness of its consumption, namely multi-channel and omnipresent approach, ease of navigation and use. This finding corresponds to the latest results revealing the trending demand for agile transformation among B2B customers (Bough et al., 2020). These results have important implications for developing marketing and content strategy. Companies must provide easily readable technical and functional information, consistent through multiple channels and easy to find and consume.

Further findings from the study indicate that service quality positively affects satisfaction and explains 59% of the variance in satisfaction. Information quality is important for perceived ease of use and explains 30% of the variance in perceived ease of use. The mediation analysis has shown no significant impact of any constructs on customer loyalty or satisfaction.

The provided model explains 57% of the variance in customer loyalty. The results show a positive effect of both constructs of customer engagement on customer loyalty - buyer-seller engagement and end-user-buyer engagement.

However, satisfaction is found to have no significant impact on customer loyalty. Contrary to expectations, the study did not find a significant relationship between satisfaction and customer loyalty. The insignificant effect of satisfaction may be attributed to the fact that the relationship between satisfaction and loyalty

in technology-mediated environments might be not straightforward. Several researchers supported these results (Janita & Miranda, 2013; Taylor & Hunter, 2003). For instance, Taylor and Hunter (2003) found the relationship between satisfaction and customer loyalty non-significant; they, however, outline a possible mediating effect of satisfaction on the relationships between brand trust and brand affect customer loyalty (Taylor & Hunter, 2003). Two reasons may explain the non-significant impact of satisfaction on customer loyalty. First, there could be other factors than attributes of communication that influence customer loyalty, e.g., switching costs. Previous research, for instance, by Yang (2015) or Russo et al. (2016), confirmed that customer loyalty is a complex structure and that there is a significant impact on customer loyalty by switching costs (Russo et al., 2016; S. Yang, 2015). Taking into consideration the specifics of B2B industrial companies and the limited number of market players, the costs of changing from one business partner to another might not be worthwhile. In that case, the level of satisfaction plays a minor role. Another reason could be connected to the derived nature of B2B industrial companies. When the communication with a supplier is built in a way that helps to develop successful relationships with the end customer, the buyer could be motivated to keep these relationships irrelevant to the satisfaction level.

The analysis of the communication channels through different customer journey stages has shown some interesting results. Firstly, the research expectedly demonstrated the increase in the usage of direct communication tools, such as e-mails, direct calls, or chats, with the development of business relationships. Industrial buyers seem to avoid spending their time searching for the required information by themselves when they can get it from the source directly. As confirmation, the latest surveys indicate that customers still prefer live communication for complex requests (Bough et al., 2020). Hence, industrial buyers prefer customized and direct communication with little effort when establishing business relationships. The second finding is related to the first outcome. The increase in the use of direct communication tools logically leads to the decrease in the use of indirect and non-specified tools, e.g., a company website or an internet search. However, despite a significant drop, both marketing channels are critical for communication. The use of a company's website has moved from first place in the early stage of the relationship lifecycle to third place in the stage where the business relationships have been already established. The results for an internet search show a similar trend: the usage has moved from third to fourth place. This finding is relevant for a seller-marketing-communication strategy. Based on the study results, a company's website and internet search are the key communication tools to access relevant information before the first contact and during the existing business relationships. The third finding relates to a noticeable drop in the usage of peers' reviews and WOM. The existing literature agrees on the positive impact of WOM on attracting new and retaining existing customers (Ukpabi & Karjaluo, 2018; Wong et al., 2014; Yoo et al., 2013).

However, the survey results confirm the importance of WOM and customers' reviews in the early stage of the customer journey, but not much in the existing business relationships.

According to Huotari et al. (2015), WOM strongly correlates with social media (Huotari et al., 2015). The analysis shows almost the same drop in the usage of WOM and social media with the development of business relationships. A similar change in the use of both communication channels does not explicitly describe their correlation but could be a reason for future research.

The subsequent finding reveals the importance of long content like articles or whitepapers for both the early and the developed stages of business development. This finding is important for marketing managers to develop a marketing strategy, and long content must be designed to cover the needs of new and existing customers.

Further findings highlight the growth in direct communication and the growing importance of short content and audio- and video content for the existing customers. This trend could be explained by the desire of buyers to consume technical, product-related information, which could be gained from podcasts, YouTube-Videos, or blog postings. Recent marketing surveys confirmed that over 70% of B2B buyers watch videos as part of their product research. The video content includes testimonials, case studies, and tutorials (522 [online], 2021).

Altogether these results provide important insights into industrial buyer values and demands and their role in customer experience. Hence, current research allowed filling research gaps and getting answers to the research questions formulated at the beginning of the study.

In the following part of the chapter, the study's main results accompanying the research objectives' validation are provided. The primary goal of the current research was to assess to what extent digital communication in buyer-seller relationships influences B2B customer experience measured by the satisfaction and customer loyalty. The results were not straightforward, and one out of three null hypotheses on satisfaction has been accepted. Unfortunately, the study could not prove any significant direct or indirect impact of any variables, reflecting attributes of communication, on customer loyalty. However, the study reveals the importance of customer engagement and end-user customer engagement in gaining customer loyalty and service quality in achieving satisfaction. Hence, the current study could not provide a clear answer to whether the analyzed values of customer communication ensure a positive customer experience. However, the study provides solutions to all research goals and the study's primary objective.

The primary objective was to evaluate the communication between a buyer and a seller through digital communication tools. Several research questions have been established in line with the main goal, the primary and secondary objectives.

RQ1: What communication tools do B2B industrial companies use?

RQ1a: What communication tools do B2B industrial companies use to get information about a product, a service, or a company before the first contact with a seller?

RQ1b: What communication tools do B2B industrial companies use to get information about a product, a service, or a company during the existing business relationships with a seller?

The current research provides a list of the communication channels used in buyer-seller relationships. As seen from the analysis, the communication channels are changing with the development of business relationships. The change in the choice of channels before and during business relationships reflects the change in the demands of industrial buyers.

RQ2: What attributes of communication are significant in buyer-seller relationships?

According to the study, information quality, perceived ease of use, perceived usefulness and service quality play a significant role in buyer-seller relationships.

RQ3: To what extent does digital communication in buyer-seller relationships influence customer loyalty among B2B industrial companies.

The provided model explains 57% of the variance in customer loyalty. However, the relationship between satisfaction and customer loyalty is found to be not significant.

RQ4: How does end-user customer engagement affect the relationships between industrial buyers and sellers?

Both types of customer engagement – customer engagement and end-user engagement – significantly affect customer loyalty.

RQ5 How complex is the decision-making process among industrial buyers?

The survey revealed relatively low complexity of the purchasing process among the respondents. The results show that two to three departments participate in purchase decisions in most cases. Only appx. 3% of the respondents reported a complex purchasing process involving more than six departments.

6. BENEFITS OF THE RESEARCH

The main body of the current research was finished before the outbreak of the COVID-19 pandemic. The changes in every aspect of life, which the pandemic has implicated, highlight the importance of the researched topic and the benefits for science, academia, and practice.

6.1 Benefits for science

The current study provides deeper insight into technology adoption theories. Whilst previous studies applied technology adoption theories to separate marketing channels, e.g., websites, social media or e-commerce, the current research expands these theories to a multi-channel context and evaluates buyer-seller customer experience from a holistic standpoint. Knowing customers' values is crucial for providing a positive customer experience. The study explores what customer values are essential for B2B industrial buyers and evaluates how these values influence customer experience. Additionally, the study evaluates the choice of communication channels at different stages of the customer journey and contributes herewith to the marketing communication literature.

Interestingly, no empirical support was found for the positive impact of satisfaction on customer loyalty. This result contradicts the previous industry works contending that satisfaction is the key antecedent of customer loyalty. The findings of the study can be used for future research in that field to explore this relationship under different conditions.

Overall, the results add some novel insight into understanding customer relationships in B2B industrial settings. Specifically, the study expands a standard viewpoint on customer engagement by adding to the traditional engagement from the standpoint of buyer-seller relationships and the perspective of a buyer's relationship with the end-user.

6.2 Benefits for academia

The research raises awareness about B2B industrial marketing and can attract more researchers to the field. The study creates a basis for further research in the related area for students and researchers. The model creates an opportunity to compare the outcomes for different companies, branches of the industrial sector or countries.

6.3 Benefits for practice

The findings of the research have specific managerial implications. The study offers practical suggestions for improving customer experience at both the individual and company levels. At the individual level, managers, who have direct contact with industrial buyers, may influence customer experience by using direct, multi-channel and omni-presented communication channels. Sellers could contribute to building qualitative business relationships with buyers by using

easily accessible and consumable information, which helps buyers solve their problems and requests in a convenient, timely, and sufficient way for business objectives. Service quality is found to be a key antecedent of satisfaction. Sellers with direct contact with buyers should pay attention to the changing demands of their customers. They should consider the change in the use of communication tools at different stages of the customer journey and address the needs of every customer based on this knowledge.

Some important contributions to the marketing strategy could be made at the company level. The study highlights the importance of entertaining and easy structured information for establishing high levels of B2B relationships. With the development of multi-channel and omnipresent marketing, it is challenging to provide qualitative and consistent information throughout the whole range of communication channels. Despite the commonly held idea that B2B purchase decisions are based on values and logical factors rather than emotional appeal, the results show the importance of engagement and interaction for B2B relationships. The line between using digital channels for private and work purposes is blurred. Users are habituated to certain content and wish to be entertained and interested in the workplace.

The study's main contribution relates to the impact of end-user customer engagement on customer loyalty. This finding has important implications for sellers' content marketing strategy. Since buyers need to keep their own customers (end-users) engaged, which affects customer loyalty to sellers, this finding must be considered in designing the content for digital communication channels. The information derived through all communication channels should include information relevant to end-users, which could be, with little effort, re-used in end-user-buyer communication.

Another important implication for a marketing strategy involves the choice of digital touchpoints at the pre-purchase stage of the customer journey and during the existing business relationships. The findings reveal the importance of long content, websites, and Internet search for both stages of the customer journey. According to the analysis of the development of business relationships, the importance of short content, e.g., blog posts or newsletters, and video and audio content are slightly growing. Based on the study results, it is suggested to use WOM only at the pre-purchase stage of the customer journey.

Finally, the study provides some important implications for top management commitment. Without adequate managerial support, it would be difficult to face the challenge of digital transformation and design an agile and holistic communication strategy. The changes could involve processual changes not just in marketing teams but in the whole company structure. For instance, companies might consider establishing cross-functional teams linking online orders, sales platforms, manufacturing, and logistics to avoid functional silos.

When thinking about digital transformation, one can picture an iceberg. Approximately $\frac{1}{8}$ of an iceberg's mass lies above water and is visible; $\frac{7}{8}$ of its mass is hidden from the view submerged in the ocean. Similarly, interactions with industrial buyers devoted to customer-centricity typically account for only a tiny percentage of all company activities. However, below the surface lie many company processes, which all need to be sufficiently mature if digital transformation is successful. The pandemic has accelerated the already-evolving processes toward digitalization in B2B buyer-seller relationships. It has forced companies to digitalize rapidly, triggered omnichannel and e-commerce and encouraged business agility. Various renowned consulting companies reveal that digital transformation is more important than ever, and the changes the pandemic has caused will be imperative going forward (BDO [online], 2021; Driedonks & Paulowsky, 2021; Harrison et al., 2021; PwC [online], 2021). Hence, it is high time to rethink business strategies and adapt existing processes to the ongoing changes.

7. LIMITATIONS AND FUTURE RESEARCH

This study has certain limitations, which can be addressed in future studies. First, the data set represents industrial companies from only one country, Germany. While it is regarded as the study's advantage, it may limit the generalisability of the results concerning other countries. More research could be done to explore differences in and among other countries. Second, the data set was based on the respondents registered at a research platform. Despite the effort to get access to a qualitative data set, from a methodological perspective, the use of a database of a research agency could create concerns about possible biases among respondents. Moreover, the respondents might not represent the opinion of all German industrial buyers. Third, the study focuses on B2B industrial sector and does not differentiate whether the companies offer products or services. Considerably more work will need to be done to determine the differences in marketing strategy for service and production B2B industrial companies. Forth, a bias might exist because of the selection of the sampling method. Online survey as a method had certain limitations due to the lack of control and face-to-face interaction. Respondents may interpret the questions differently than the researcher based on their own experience and judgements. Furthermore, although peer-reviewed, the translation into German might cause some linguistic differences. Fifth, the small effect sizes of the effect of an end-user-engagement on customer loyalty and its moderation effect indicate that future research needs to examine under different settings. For instance, the study examines only two variables of customer experience – satisfaction and customer loyalty. The analysis also did not show a significant impact of the defined attributes of communication on satisfaction and loyalty. Future research may examine other variables of customer experience, such as trust (Lecoeuvre et al., 2021) or expectations (Cortez & Johnston, 2016). Moreover, future research may continue expanding the idea of the impact of end-user relationships on buyer-seller experience and explore the other variables, e.g., end-user customer loyalty on buyer-seller loyalty. Finally, the current research did not aim to examine customer experience at different stages of the customer journey, which could be a greater focus for future research. As a result, future research should broaden the current study model and include new factors.

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CURRICULUM VITAE

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EDUCATION

Tomas Bata University (Zlin, Czech Republic, 2014-present)

PhD in Economics and Management

Carinthia University of Applied Sciences (Villach, Austria, 2009-2011)

International Business Management, Year of graduation 2011

Bashkir State University (Ufa, Russia, 2002-2007)

Company Management, Year of graduation 2007

Bashkir State Pedagogical University named after M.Akmullah (Ufa, Russia, 2003-2009)

Department of Foreign Languages, Year of graduation 2009

CONFERENCE PRESENTATIONS

1. Bakhtieva E. (2018). Customer Loyalty and Characteristics of Digital Channels in B2B Industrial Markets. Oral presentation to be delivered at the 5th International Conference on Finance and Economics, ICFE 2018, Ho Chi Minh City, Vietnam, September 2018.
2. Bakhtieva E. (2017). B2B digital marketing strategy: A framework for assessing digital touchpoints and increasing customer loyalty. Oral presentation to be delivered at the 9th International Conference on Applied Economics Contemporary Issues in Economy, Institute of Economic Research, Toruń, Poland, June 2017.
3. Bakhtieva E. (2017). Digital Marketing Maturity Models: Overview and Comparison. Oral presentation to be delivered at the 19th International Conference on Applied Economics, Business and Management, ICAEBM 2017, London, United Kingdom, May 2017.
4. Bakhtieva E. (2016). The role of the customer journey in B2B content marketing. Oral presentation to be delivered at the 12th Annual International Bata Conference for Ph.D. Students and Young Researchers, Zlin, Czech Republic, April 2016.
5. Bakhtieva, E. (2015). Top management team national diversity and firm performance. Oral presentation to be delivered at the 11th Annual International Bata Conference for Ph.D. Students and Young Researchers, Zlin, Czech Republic, April 2015.

EMPLOYMENT HISTORY

since 02/2021	Natuvion Austria GmbH, Vienna / Austria Senior Project Manager
02/2018 – 08/2020	Uniplan GmbH & Co., Cologne / Germany Project Manager
11/2015 – 04/2018	SBA Messebau GmbH, Vienna / Austria Project Manager
11/ 2011 – 07/2011	HERZ Armaturen GmbH, Vienna / Austria Marketing and Communication
04/2011 – 08/2011	UNIDO, Vienna / Austria Intern
08/2010 – 09/2011	Homefibre Digital Network GmbH, Spittal a.d. Drau / Austria Project manager
02/2007 – 09/2009	Chamber of Commerce & Industry of the Republic of Bashkortostan, Ufa / Russia Consultant

GRANTS AND AWARDS

Grant of Internal Grant Agency of Tomas Bata University (Czech Republic): 2015, 2016, 2017, 2018.

Best Paper award: 5th International Conference on Finance and Economics, ICFE 2018, Ho Chi Minh City, Vietnam, September 2018.

Best Paper award: 19th International Conference on Applied Economics, Business and Management, ICAEBM, London, United Kingdom, May 2017.

EXTENDED EDUCATION

Online-Marketing (Vienna, 2015)

Consulting Seminar: QMS Internal Audit (Ufa, 2008)

LANGUAGES

Russian – Mother tongue

English – C1

German – C2

APPENDIX A. THEORIES ON TECHNOLOGY ADOPTION

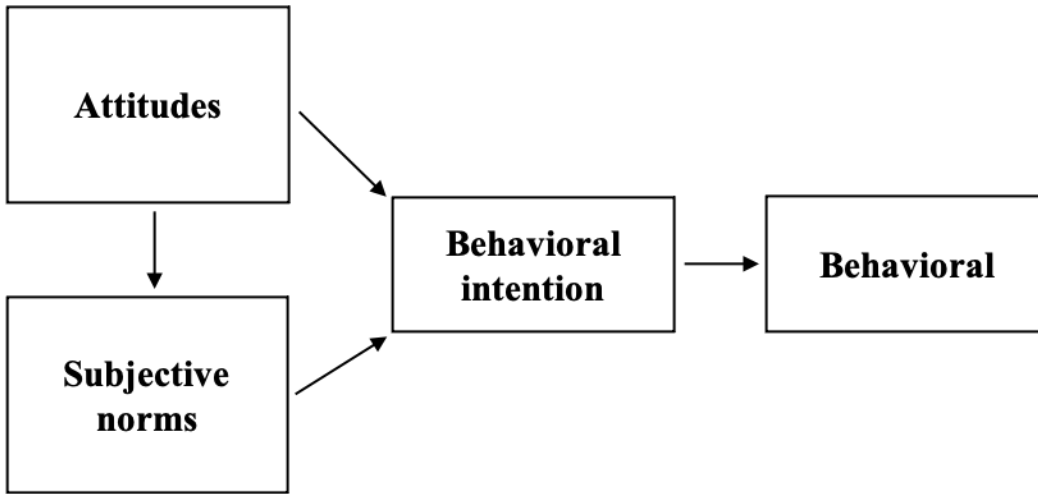


Fig. 1: TRA Model. Source: adapted from (Fishbein & Ajzen, 1975).

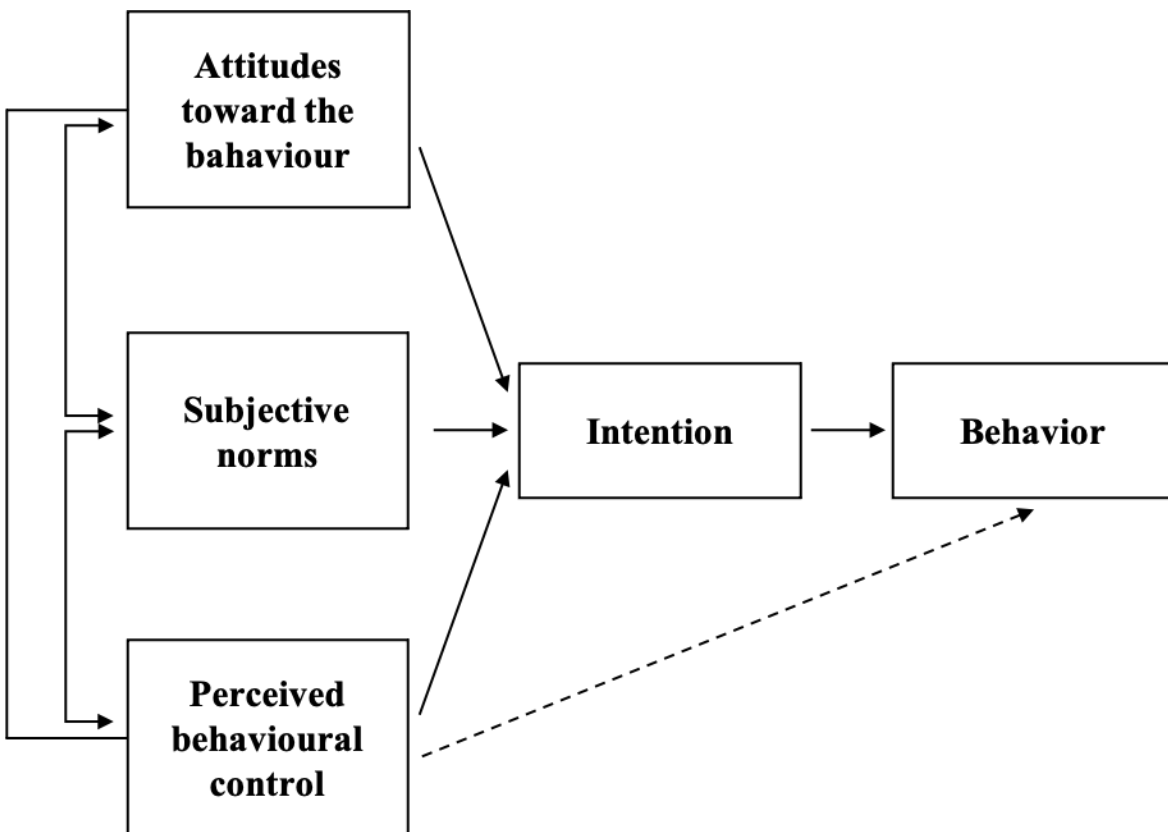


Fig. 2: TPB Model. Source: adapted from (Ajzen, 1985).

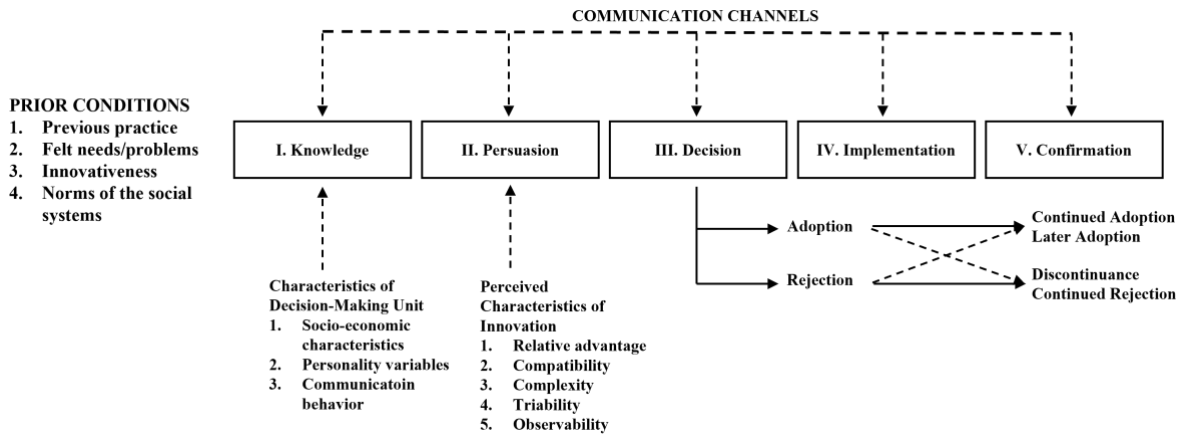


Fig. 3: Diffusion of Innovation Model (IDT). Source: (Rogers, 2003).

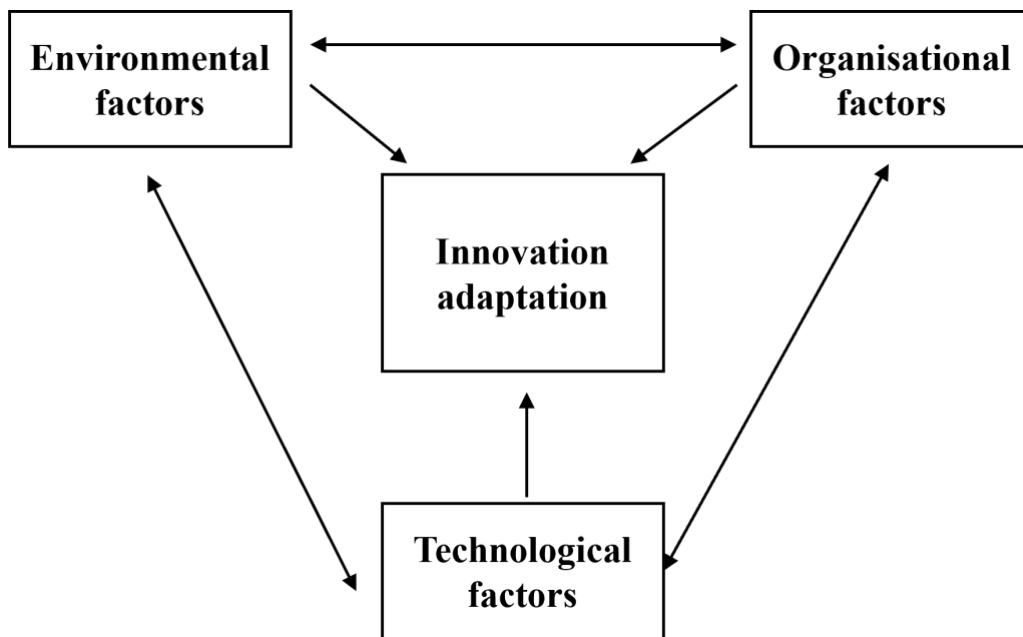


Fig. 4: TEO Model. Source: adapted from (Tornatzky & Fleischer, 1990).

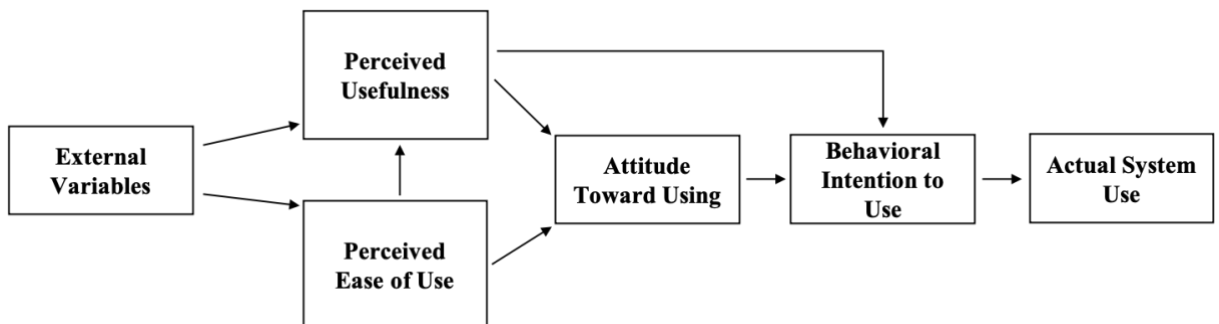


Fig. 5: TAM. Source: adapted from (Davis, 1989).

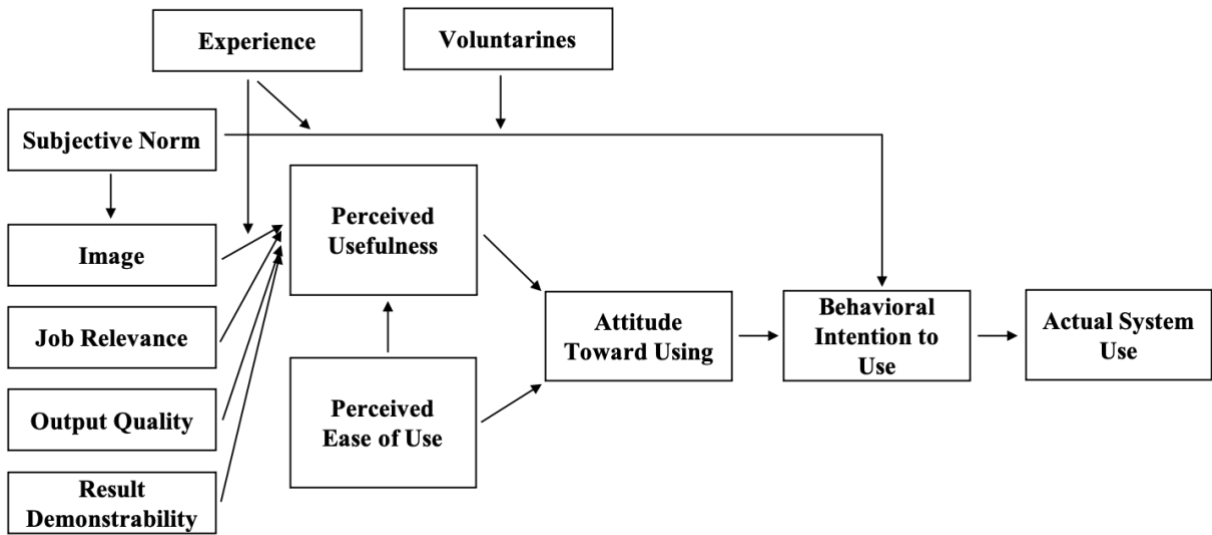


Fig. 6: TAM2. Source: adapted from (Venkatesh & Davis, 2000).

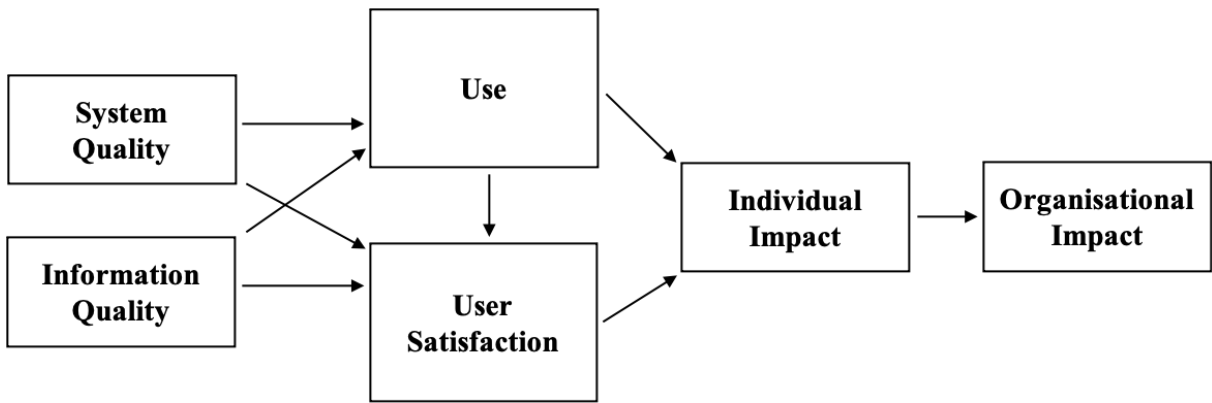


Fig. 7: IS Model. Source: adapted from (DeLone & McLean, 1992).

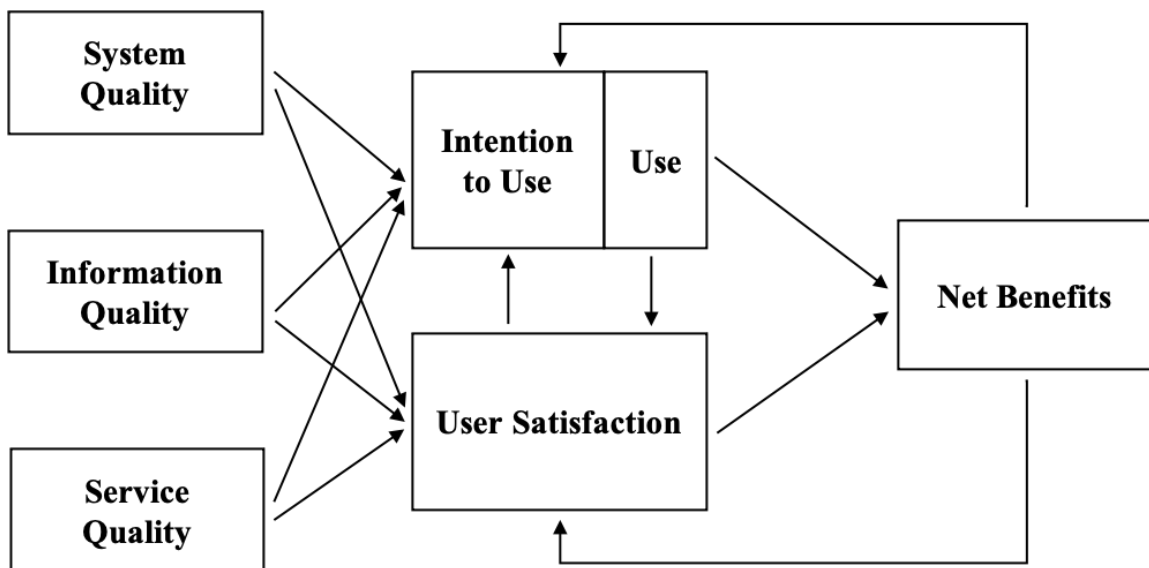


Fig. 8: Extended IS Model. Source: adapted from (DeLone & McLean, 2003).

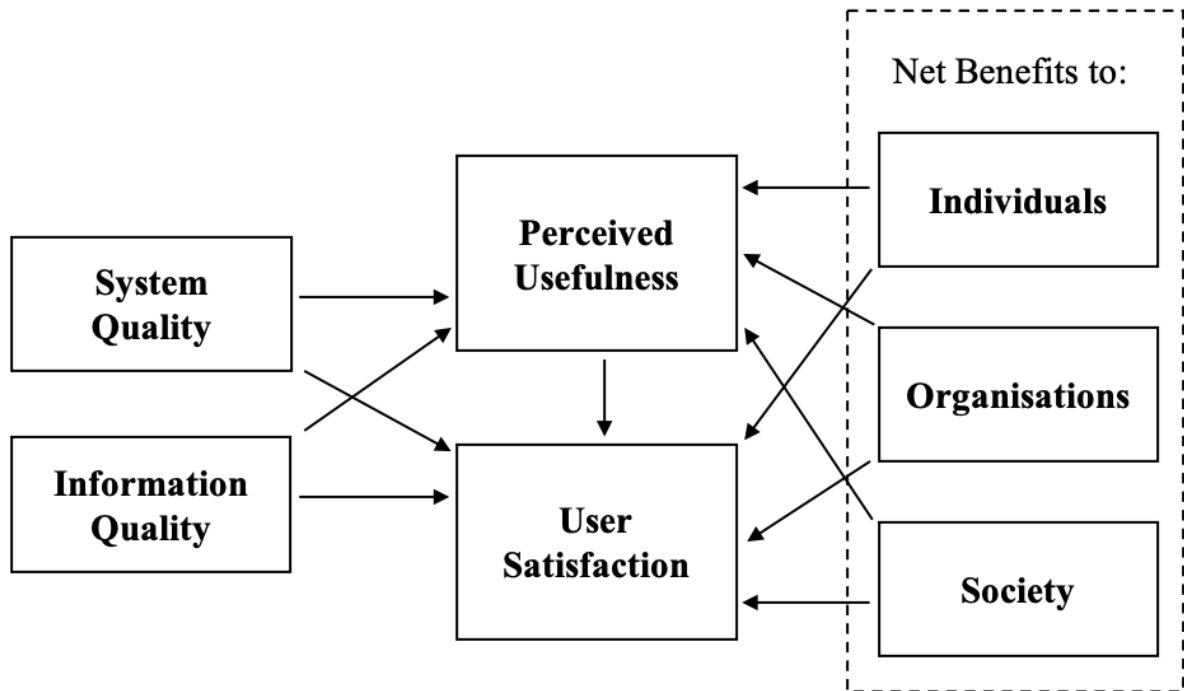


Fig. 9: Seddon's Model. Source: adapted from (Seddon, 1997, p. 245).

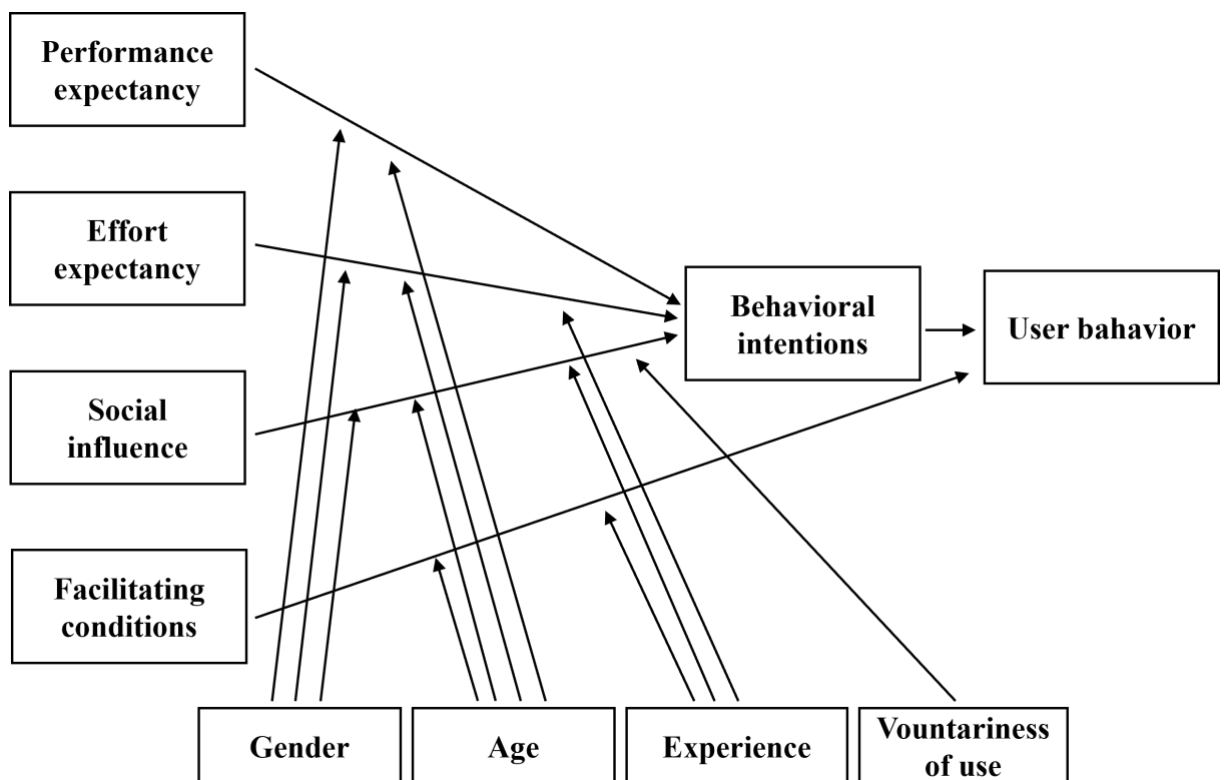


Fig. 10: UTAUT. Source: adapted from (Venkatesh et al., 2003a)

APPENDIX B. MEASUREMENT ITEMS

Measurement item	Item Description (Survey Question)	Construct	Supporting literature
Information quality			
Currency	Data provided by digital channels of XYZ are never outdated.	IQ1	(McKnight et al., 2017)
Accuracy	Data provided by digital channels of XYZ are completely error-free.	IQ2	(Chen et al., 2013; McKnight et al., 2017).
Relevancy	Information content of the digital channels of XYZ meets my needs.	IQ3	(Chen et al., 2013; McKnight et al., 2017; S. Sohn, 2017).
Completeness	XYZ provides sufficient information to enable me to do my job.	IQ4	(Chen et al., 2013; Oliveira et al., 2017; S. Sohn, 2017).
Consistence	Data provided by XYZ are consistent through different channels.	IQ5	(Čater & Čater, 2010; S. Yang et al., 2014)
Perceived Usefulness			
Productivity	Using data provided by XYZ increases business productivity.	PU1	(Chen et al., 2013; C. L. Hsu & Lin, 2008; Lu et al., 2019; S. K. Roy et al., 2018; Siamagka et al., 2015)
Useful	Data provided by XYZ are useful for businesses.	PU2	(Chatterjee & Kumar Kar, 2020; Chen et al., 2013; Davis et al., 1989; S. K. Roy et al., 2018; Siamagka et al., 2015)
Effectiveness	Using data provided by XYZ enhances the effectiveness of	PU3	(Davis et al., 1989; Karjaluoto et al., 2014; S. K. Roy et al., 2018;

	the business		Siamagka et al., 2015; K. Sohn & Kwon, 2020)
Job / Business Performance	Using data provided by XYZ improves business performance	PU4	(Davis et al., 1989; Hernández-Ortega, 2011)
Makes Job Easier	Informational content of XYZ reduce the time needed for my tasks	PU5	(Chen et al., 2013; Davis et al., 1989)
Support in task completion	Using data provided by XYZ makes it easier to do my job	PU6	(Chen et al., 2013; Davis et al., 1989)
Problem solving capability	Using digital channels of XYZ increases problem-solving capability	PU7	(Askariazad & Babakhani, 2015; Siamagka et al., 2015)
Valuability	Digital channels of XYZ are valuable tools for business	PU8	(Čater & Čater, 2010; Janita & Miranda, 2013; K. Sohn & Kwon, 2020; Valvi & West, 2013)
Assistance	Considering everything, the use of digital channels of XYZ assist my job	PU9	(Čater & Čater, 2010; Karjaluoto et al., 2014)
Perceived enjoyment			
Entertainment	Digital channels of XYZ are entertaining.	PE1	(C. L. Hsu & Lin, 2008; K. Sohn & Kwon, 2020; Valvi & West, 2013)
Attraction	Content provided by XYZ is attractive to me.	PE2	(L.-C. Hsu et al., 2013; López-Miguens & Vázquez, 2017; Valvi & West, 2013)
Enjoyment	I enjoy using digital channels of XYZ.	PE3	(C. L. Hsu & Lin, 2008; K. Sohn & Kwon, 2020)

Perceived ease of use			
Easy to learn and use	Digital channels of XYZ are easy to learn and use.	PEOU1	(Chen et al., 2013; Davis et al., 1989; Diop et al., 2019; Eid et al., 2019; Hernández-Ortega, 2011; C. L. Hsu & Lin, 2008; Karjaluoto et al., 2014; Lu et al., 2019; S. K. Roy et al., 2018)
Clear and understandable	My interaction with digital channels of XYZ is clear and understandable.	PEOU2	(Davis et al., 1989; Karjaluoto et al., 2014; Lu et al., 2019; S. K. Roy et al., 2018; Siamagka et al., 2015; K. Sohn & Kwon, 2020; Venkatesh, 2000; Venkatesh & Davis, 2000)
No effort	Using digital channels of XYZ require no mental effort.	PEOU3	(Diop et al., 2019; Eid et al., 2019; Lu et al., 2019; S. K. Roy et al., 2018; Siamagka et al., 2015)
Multichannel	I use different digital channels of XYZ to get what I need.	PEOU4	Adapted from (de Haan et al., 2015; Gao et al., 2020; Verhoef et al., 2009)
Omni-channel	XYZ provides personalized and consistent data across all digital channels and devices.	PEOU5	Adapted from (de Haan et al., 2015; Gao et al., 2020; Verhoef et al., 2009)
Service quality			
Professionalism	XYZ provides professional services.	SQ1	(López-Miguens & Vázquez, 2017; S. Yang et al., 2014)
Personalization	XYZ provides personalized services.	SQ2	(Janita & Miranda, 2013; S. Yang et al., 2014)

Timeliness	XYZ provides service in a timely manner.	SQ3	(Chen et al., 2013)
Responsiveness	XYZ is responsive to any problems that I encounter.	SQ4	(Chen et al., 2013)
Knowledgeability	XYZ knows precisely what I need	SQ5	(Chen et al., 2013)
Communication quality	Overall, the communication process with XYZ is efficient.	SQ6	Adapted from (Čater & Čater, 2010; López-Miguens & Vázquez, 2017)
Satisfaction			
Satisfaction	I am satisfied with the experience in using digital channels of XYZ.	S1	(Chen et al., 2013; López-Miguens & Vázquez, 2017; Oliveira et al., 2017)
High Quality	Digital channels of XYZ are of high quality.	S2	(Chen et al., 2013)
Positive feelings	I have positive feeling towards XYZ.	S3	(Čater & Čater, 2010; López-Miguens & Vázquez, 2017)
Customer engagement			
End-user customer engagement			
End-user affective engagement	We facilitate two-way communication with our customers.	CE_EU1	Adapted from (Chen et al., 2013; Karampela et al., 2020)
End-user cognitive engagement	It is vital for us that the end consumer learns to from us.	CE_EU2	Adapted from (Vivek et al., 2012)
End-user behavioural engagement	We actively try to have our customers engaged with our product/service.	CE_EU3	Adapted from (Vivek et al., 2012)
Customer Engagement			
Affective engagement	It is important for me to be valued and	CE1	Adapted from (Anderson &

	supported by XYZ.		Swaminathan, 2011; Vivek et al., 2012)
Cognitive engagement	It is important for me that I always can learn something from XYZ.	CE2	Adapted from (Vivek et al., 2012)
Behavioural engagement	We forward the feedback we receive from the end consumer to XYZ for product development purposes.	CE3	Adapted from (Vivek et al., 2012)
Customer loyalty			
WOM - Recommend	I recommend XYZ to colleagues who seek my advice.	CL1	(Čater & Čater, 2010; Chen et al., 2013; López-Miguens & Vázquez, 2017)
First choice	I consider XYZ as my first choice for future purchase.	CL2	(Čater & Čater, 2010; Chen et al., 2013; C. L. Hsu & Lin, 2008; Janita & Miranda, 2013; López-Miguens & Vázquez, 2017; Valvi & West, 2013)
Re-purchase	I do more business with XYZ in the next future.	CL3	(Askariazad & Babakhani, 2015; Čater & Čater, 2010; Chen et al., 2013; López-Miguens & Vázquez, 2017; S. Yang, 2015)

APPENDIX C. MAIN CONTRIBUTION FROM THE ANALYSIS OF EXPERT INTERVIEWS

Structural coding item	Provisional coding item	Citation	Interviewee (I)	Pattern	Verification of the existing literature
Information quality	Relevancy	We have something that can enhance your product.	I4	Information should enhance the product.	(Chen et al., 2013; McKnight et al., 2017; S. Sohn, 2017).
Information quality	Relevancy	It (information) depends on the stage of a customer journey, namely, whether it is first to contact, irregular customer or regular customer.	I2	Information should be adapted to a customer.	
Information quality	Relevancy	We have to update information all the time, every month there are some changes on the website	I2	The information has to be accurate and up-to-date.	
Information quality	Relevancy	The information has to be accurate and up-to-date.	I3		
Information quality	Completeness	What is the universal truth? It is love, hate, anger, laughter, happiness. Those brands, which did not realise it, which cannot deliver on that, they have to struggle.	I4	The information should reflect the universal truth.	

Information quality	Completeness	The management is too conservative... and ...not motivated to follow this [digitalisation trend.... Well, our management is very cautious about what appears in the digital marketplace.	I2	Complete information is seen as (un)-important.	(Chen et al., 2013; Oliveira et al., 2017; S. Sohn, 2017).
Information quality	Consistency	We post on Facebook and LinkedIn from time to time. Mostly on-demand. The company considers regular postings as not necessary because customers are also not active on social media.	I2	Regular and consistent information flow is seen as (un)-important.	Čater & Čater, 2010; S. Yang et al., 2014)
Perceived usefulness	Value	You first have to establish the reason to believe - why does Nike take your product. You need first make them buy your ingredient.	I4	Companies should understand their customers.	(Čater & Čater, 2010; Janita & Miranda, 2013; K. Sohn & Kwon, 2020; Valvi & West, 2013)
Perceived usefulness	Value	When you go as a business entity..., it becomes stronger when you understand the (end) customer, the	I3		

		needs of the customer			
Perceived usefulness	Value	And it was the hardest job – to put your name on the shopping list. It is a lot of (research); it means understanding a person's life.	I3		
Perceived usefulness	Value	...understand your customer	I3		
Perceived usefulness	Useful	For an insulation material company, the first level of communication is to get its product get bought from Nike. This is phase one. The phase one is to let businesses know: "Hey, we have a technology, it is made in Germany or in the US, we are proud about this product, it is first in its class, we are breaking certain technology barriers, and we know that is a perfect fit for your brand."	I4	Companies should provide useful information for their customers.	(Chatterjee & Kumar Kar, 2020; Chen et al., 2013; Davis et al., 1989; S. K. Roy et al., 2018; Siamagka et al., 2015)
Perceived usefulness	Makes job easier	The perspective of the ingredient brand that is involved in another brand has	I4	Suppliers support their buyers by selling the suppliers'	(Chen et al., 2013; Davis et al., 1989)

		become ... more sensitive to the understanding of what they have to deliver.		products to the end-users.	
Perceived usefulness	Makes Job Easier	And Nike will say, "We want to buy it," because it has a functional attribute, but it has a story for the end consumer as well.	I4	Re-purchase intentions of the buyer occur when the supplier supports the buyer in transferring the product/service value and facilitates the end-user engagement.	
Perceived usefulness	Problem-solving capacity	Those apps provide data sheets and guidelines for our products. Or help in calculations. Basically, they [the mobile applications] are here to help with the installation process and the company's products.	I2	A product or a service has to solve problems.	(Askariaza d & Babakhani, 2015; Siamagka et al., 2015)
Perceived usefulness	Problem-solving capacity	The product has to solve some [customer] problems	I3		
Perceived usefulness	Problem-solving capacity	Hey, we are here for you! We understand what are you going through and what is important for	I4		

		you and your baby. We are here to empower you. We are not here to sell you something".			
Perceived usefulness	Value	If I know that I am sitting in a Nike jacket, and I know that the insulation material inside of it was used in a NASA-Space Station, in their suits, that is the story you can sell to the end consumer.	I4	Product or service quality is seen as (un)-important	(Cater & Cater, 2010; Janita & Miranda, 2013; K. Sohn & Kwon, 2020; Valvi & West, 2013)
Perceived usefulness	Value	[Mercedes Benz is]...the engine within the McLaren brand. ...[People] know that the engine will never die; they know that this engine is perfect.... When people watch McLaren racing, they know there is a Mercedes Benz in there. So, from a brand perspective, it is about what values you carry.	I4		
Perceived ease of use	Multi-channel	It is almost impossible to develop digital marketing without having digital services	I1	Digital marketing is connected to digitalisation .	(de Haan et al., 2015; Gao et al., 2020; Verhoef et al., 2009)

Perceived ease of use	Easy to learn and use	However... maybe when there is too much information (on a website), you know, the customer could get lost.	I2	Willingness to provide maximum information may limit the ease of consumption	(Diop et al., 2019; Eid et al., 2019; Lu et al., 2019; S. K. Roy et al., 2018; Siamagka et al., 2015)
Perceived ease of use	Direct communication	However, the whole information they become from the sales managers. It takes less time and effort to call me.	I1	Information exchange is easier through direct communication.	(Bough et al., 2020)
Perceived ease of use	Direct communication	When they need something fast, they call me.	I1	Information exchange is faster through direct communication.	(Bough et al., 2020)
Perceived enjoyment	Emotions	When we are talking about the end consumer, we have to appeal to emotions. We have to talk about the reason to purchase.	I4	Emotions play an important role in communication with the end-user.	(Tasci & Ko, 2016).
Perceived enjoyment	Emotions	Humans are not numbers anymore. It is an emotional stream.	I3		
Perceived enjoyment	Entertainment	Entertainment? I do not think that it is important. We are a B2B	I2	Entertainment is seen as (un)-important.	(C. L. Hsu & Lin, 2008; K. Sohn &

		business. I think it could destruct only...			Kwon, 2020; Valvi & West, 2013)
Service quality	Professionalism	[Customers] are looking for a professional solution.	I1	Professionalism is seen as important.	(López-Miguens & Vázquez, 2017; S. Yang et al., 2014)
Service quality	Timeliness	You have to understand where the person is at a certain time. Christmastime, no one will look at it. But we know, two months before Christmas, it is a peak.	I4	Time is critical for information placement	(Chen et al., 2013)
Service quality	Timeliness	You have to be sure that your message is right. Your message is polished and has the right timing.	I3		
Service quality	Personalisation	It is important to show that you care about a customer.	I1	Personalisation is critical for business relationships	(Chen et al., 2013)
Service quality	Knowledge ability	... you need to see what message you would like to address to the world.	I4	In the B2B area, people are highly qualified in their fields.	(Chen et al., 2013)
Service quality	Knowledge ability	In the B2B area, people are highly qualified in their fields. They know	I1		

		what they are talking about.			
Satisfaction	Positive feelings	Before you have brand loyalty, you have to achieve trust. Before you have trust, you have to achieve a friendship. Before you have a friendship, you have to achieve some kind of partnership. Before you have a partnership, you have to build a relationship. Before you have a relationship, you have an introduction.	I4	A positive attitude is important for business relationships .	(Čater & Čater, 2010; López-Miguens & Vázquez, 2017)
Customer loyalty	Re-purchase	And Nike will say, "We want to buy it," because it has a functional attribute, but it has a story for the end consumer as well.	I4	Re-purchase intentions of the buyer occur when the supplier supports the buyer in transferring the product/ service value and facilitates the end-user engagement.	(Askariaza d & Babakhani, 2015; Čater & Čater, 2010; Chen et al., 2013; López-Miguens & Vázquez, 2017; S. Yang, 2015)
Customer loyalty	Re-purchase	The buyer should deliver a reason to believe for an end customer as well.	I4		
Customer loyalty	Business relationship loyalty	I believe it is important who are you working with. Once, a customer told me that if I stopped working for my	I1	Business relationship loyalty is seen as important for customer loyalty.	(Han et al., 2011; López-Miguens & Vázquez, 2017; R. L. Oliver,

		company, they would also stop working with it.			1997, 1999; Toufaily et al., 2013)
Customer loyalty	Positive customer experience	... what is the importance for the end consumer? Not so much. Because for the end consumer, it is all about the experience.	I3	End-user positive customer experience is important for the whole supply chain.	
Customer loyalty	Positive customer experience	Well, we deliver more than a product exchange. We deliver relationships.	I1		
Customer engagement	Understand your customer, attributional contribution	you have Jack Wolfskin.... The material they use to insulate on the inside – nobody knows about it. Yet, it does contribute to the attributes of the overall standing brand.	I4	Understanding the needs of the end-user attributional contribution is important in B2B relationships .	(Ng et al., 2020; Nyadzayo et al., 2020)
Customer engagement	Understand your customer, attributional contribution	When you do social media, it is much more engaged. It is one-to-one. It (social media) is (about) the understanding of the end consumer, understanding the truth.	I4		
Customer engagement	Understand your customer, attributional contribution	That is where we as creatives have to come out with communication	I3		

	nal contribution	for both business-to-business but also business-to-consumer.			
Customer engagement	Understand your customer, attributional contribution	When you go as a business entity and (provide) an ingredient for a brand, it becomes stronger when you understand the (end) customer, the needs of the customer	I3		
Customer engagement	Understand your customer, attributional contribution	And Nike will say, "We want to buy it," because it has a functional attribute, but it has a story for the end consumer as well.	I4	Re-purchase intentions of the buyer occur when the supplier supports the buyer in transferring the product/service value and facilitates the end-user engagement.	(Ng et al., 2020; Nyadzayo et al., 2020)
Customer engagement	Understand your customer, value	If we are talking raw materials, iron or ferrous, or some sort of alloyed, we have to understand what the end product has to look like and then take the steps back from there.	I4	Companies should understand their customers.	(Han et al., 2011)
Customer engagement	Understand your	When a company understands the company's	I1		

	customer, value	targeting, it gives so many strengths.			
Customer engagement	Understand your customer, value	The process of learning, of getting this trust. It does not happen overnight. ...we called it a path to love.	I4		
Customer engagement	Continuous customer engagement	It is natural that you are in a continuous exchange with your customer.	I1	Continuous customer engagement is important.	(Vivek et al., 2012)
Customer engagement	Information exchange	...internal communication and information Exchange are very important for business development... Well, our management is very cautious about what appears in the digital marketplace. They [management] try to avoid spontaneous and thoughtless appearance. Therefore, they try to concentrate on information on one hand.	I2	Internal communication and information exchange is seen as important.	(Nicolaou & McKnight, 2006)
Customer engagement	Affective engagement	... people are connected to a brand. They want	I3	People are connected to a brand.	(Vivek et al., 2012)

		to be connected to a brand.			
Customer engagement	Cognitive engagement	The consumer owns the brand and tells what they want via social media, via the influencer.	I4	In order to understand the customer, companies should learn from them.	(Vivek et al., 2012)
Customer engagement	Positive end-user experience	They are talking about their products: "The alloid is the best, cannot be magnetised, friction is so much, etc." But what is the importance for the end consumer? Not so much. Because for the end consumer, it is about the experience.	I4	End-user positive customer experience is important for the whole supply chain	(Ng et al., 2020; Steward et al., 2018)
Customer engagement	Positive end-user experience	You must always have to keep that "end" in focus. If you do not understand the end output of the product, it's no use even talking because you will not go any further.	I4		

Note: I1 = interviewee 1, I2 = interviewee 2, I3 = interviewee 3, I4 = interviewee 4.

APPENDIX D. GENERAL QUESTIONS

Nr.	Measurement	Questions in English	Questions in German
1	Business settings (Screening question)	<p>Q1 What sector do your customers come from?</p> <ul style="list-style-type: none"> • Business-to-business (B2B) • Business-to-customer (B2C) 	<p>Q1 Aus welchem Bereich kommen Ihre Kunden?</p> <ul style="list-style-type: none"> • Business-to-business (B2B) • Business-to-customer (B2C)
2	Decision making (Screening question)	<p>Q2 Do you participate in any purchasing process(es) at your company, or do you engage in any communication with the supplier(s)?</p> <ul style="list-style-type: none"> • Yes • No 	<p>Q2 Nehmen Sie an einem/mehreren Einkaufsprozess(en) in Ihrem Unternehmen teil, bzw. nehmen Sie in der Kommunikation mit einem/mehreren Lieferanten teil?</p> <ul style="list-style-type: none"> • Ja • Nein
3	Industry	<p>Q3 Which of the following answer options describes best the industry in which your company operates?</p> <ul style="list-style-type: none"> • Automotive industry or motor vehicle construction • Construction industry • Chemical-pharmaceutical industry • Electronics & electrical engineering • Energy industry • Food industry 	<p>Q3 Welche der folgenden Antwortoptionen beschreibt die Branche, in der Ihr Unternehmen tätig ist, am besten?</p> <ul style="list-style-type: none"> • Automobilindustrie bzw. Kraftfahrzeugbau • Bauindustrie • Chemisch-pharmazeutische Industrie • Elektronik & Elektrotechnik • Energiewirtschaft • Ernährungsindustrie • Finanzen und Finanzdienstleistungen

		<ul style="list-style-type: none"> • Finance and financial services • Real estate • Plastics industry • Agriculture • Mechanical and plant engineering • Metal production and processing • Mineral oil processing • Paper industry • Textiles, clothing and leather industry • Transport and delivery • Business support and logistics • Insurance • Advertising and Marketing • Other (please specify) 	<ul style="list-style-type: none"> • Immobilien • Kunststoffindustrie • Landwirtschaft • Maschinen- und Anlagenbau • Metallerzeugung und -bearbeitung • Mineralölverarbeitung • Papierindustrie • Textilgewerbe bzw. Textil-, Bekleidungs- und Ledergewerbe • Transport- und Zustellwesen • Unternehmensförderung und Logistik • Versicherungswesen • Werbung und Marketing • Sonstiges (bitte angeben)
4	Company size	<p>Q4 How many employees does your company have?</p> <ul style="list-style-type: none"> • 1 • 2 to 5 • 6 to 9 • 10 to 19 • 20 to 49 • 50 to 99 • 100 to 149 	<p>Q4 Wie viele Mitarbeiter beschäftigt ihr Unternehmen ungefähr?</p> <ul style="list-style-type: none"> • 1 • 2 bis 5 • 6 bis 9 • 10 bis 19 • 20 bis 49 • 50 bis 99 • 100 bis 149

		<ul style="list-style-type: none"> • 150 to 249 • 250 to 499 • 500 to 999 • 1,000 to 2,499 • 2,500 to 4,999 • 5,000 to 9,999 • over 10,000 	<ul style="list-style-type: none"> • 150 bis 249 • 250 bis 499 • 500 bis 999 • bis 2.499 • bis 4.999 • 5.000 bis 9.999 • über 10.000
5	Area of employment	<p>Q5 Which of the following answer options describes your current job best?</p> <ul style="list-style-type: none"> • Occupation in Management / CEO / Board of Directors • Occupation in Business Development • Occupation in Project Management • Occupation in procurement • Occupation in Finance • Occupation in accounting / bookkeeping • Occupation in EDP / IT • Occupation in Administration / Sales / Marketing / Customer Service • Occupation in Engineering / Research / Development • Occupation in 	<p>Q5 Welche der folgenden Antwortoptionen beschreibt Ihren aktuellen Beruf am besten?</p> <ul style="list-style-type: none"> • Tätigkeit als Geschäftsführung / CEO / Vorstand • Tätigkeit in Business Development • Tätigkeit in Projektmanagement • Tätigkeit in Einkauf • Tätigkeit in Finanzen • Tätigkeit in Buchhaltung / Rechnungswesen • Tätigkeit in EDV / IT • Tätigkeit in Verwaltung / Sales / Vertrieb / Marketing / Kundenbetreuung • Tätigkeit in Engineering / Forschung / Entwicklung • Tätigkeit in Logistik / Materialwirtschaft • Tätigkeit in Fertigung / Produktion • Sonstiges (bitte angeben)

		<p>Logistics / Materials management</p> <ul style="list-style-type: none"> • Occupation in Manufacturing / Production • other (please specify) 	
6	Position in the company	<p>Q6 Which of the following answer options best describes your current position in the profession?</p> <ul style="list-style-type: none"> • Owner / Management / Management Board • Company Management • Middle management • Employee with experience • Entry-level employee / young professional • Other (please specify) 	<p>Q6 Welche der folgenden Antwortoptionen beschreibt Ihre aktuelle Position im Beruf am besten?</p> <ul style="list-style-type: none"> • Eigentümer/in / Geschäftsführung / Vorstand • Führungsebene • Mittleres Management • Mitarbeiterin/Mitarbeiter mit Erfahrung • Berufseinsteiger/in / Berufseinsteiger • Sonstiges (bitte angeben)
7	Decision making process – involved departments	<p>Q7 Which departments/divisions are involved in purchasing processes in your company? (Please rank in order of importance):</p> <ul style="list-style-type: none"> • Management / CEO / Board of Directors • Business Development • Project 	<p>Q7 Welche Abteilungen/Fachbereiche sind in Einkaufsprozessen in Ihrem Unternehmen involviert? (Bitte reihen Sie nach Wichtigkeit)</p> <ul style="list-style-type: none"> • Geschäftsführung / CEO / Vorstand • Business Development • Projektmanagement • Einkauf

		<p>Management</p> <ul style="list-style-type: none"> • Procurement • Finance / Accounting • Bookkeeping / Accounting • EDP / IT • Administration / Sales / Marketing / Customer Service • Engineering / Research / Development • Manufacturing / Production • Logistics / Materials Management • Other (please specify) 	<ul style="list-style-type: none"> • Finanzen • Buchhaltung / Rechnungswesen • EDV / IT • Verwaltung / Sales / Vertrieb / Marketing / Kundenbetreuung • Engineering / Forschung / Entwicklung • Fertigung / Produktion • Logistik / Materialwirtschaft • Sonstige (bitte angeben)
8	Decision-making process – number of involved departments	<p>Q8 How many departments/ divisions are involved in purchasing decisions in your company on average?</p> <ul style="list-style-type: none"> • 1 • 2 • 3 • 4 • 5 • more than 6 	<p>Q8 Wie viele Abteilungen/ Fachbereiche sind durchschnittlich in Einkaufsentscheidungen in Ihrem Unternehmen involviert?</p> <ul style="list-style-type: none"> • 1 • 2 • 3 • 4 • 5 • mehr als 6
9	Digital channels in the early stage of the	<p>Q9 Which of the following sources do you use to obtain information about a company and the</p>	<p>Q9 Welche der folgenden Quellen nutzen Sie, um Informationen über Unternehmen und ihre</p>

customer journey	<p>products/ services it offers BEFORE contacting the company for the first time? (Please mark all that apply)</p> <ul style="list-style-type: none"> • e-mails • chats • direct calls or video calls (e.g., via Skype, Viber, Messenger, etc.) • company website • Internet research • short articles or content (e.g., email newsletter, blog post) • customer reviews (e.g., Amazon) • audio (e.g., podcast) • videos (e.g., YouTube) • photos, infographics, images, or pictorial representations • long articles or content (e.g., e-book, downloadable guide) • posts to social media (e.g., Twitter, Facebook) • slides or presentations • Word-of-Mouth • other (please 	<p>angebotenen Produkte/ Services zu erhalten, BEVOR Sie sich zum ersten Mal an das Unternehmen wenden? (Bitte markieren Sie alle zutreffenden Antworten)</p> <ul style="list-style-type: none"> • E-Mails • Chats • direkte Anrufe bzw. Videoanrufe (z. B. über Skype, Viber, Messenger usw.) • Unternehmenswebseite • Internet Recherche • Kürzere Artikel oder Inhalte (z. B. E-Mail-Newsletter, Blogeintrag) • Kundenrezensionen (z. B. Amazon) • Audio (z. B. Podcast) • Videos (z. B. YouTube) • Fotos, Infografiken, Bilder oder bildliche Darstellungen • Längere Artikel oder Inhalte (z. B. E-Book, herunterladbarer Leitfaden) • Posts in sozialen Medien (z. B. Twitter, Facebook) • Folien oder Präsentationen • Word-of-Mouth • Sonstiges (bitte angeben)
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		specify)	
10	Digital channels during the existing business relationships	<p>Q10 Which of the following sources do you use to obtain information about a company and the products/ services it offers WHILE you are already in a business relationship with the company? (Please mark all that apply)</p> <ul style="list-style-type: none"> • e-mails • chats • direct calls or video calls (e.g., via Skype, Viber, Messenger, etc.) • company website • Internet research • short articles or content (e.g., email newsletter, blog post) • customer reviews (e.g., Amazon) • audio (e.g., podcast) • videos (e.g., YouTube) • photos, infographics, images, or pictorial representations • long articles or content (e.g., e-book, downloadable guide) • posts to social media (e.g., Twitter, 	<p>Q10 Welche der folgenden Quellen nutzen Sie, um Informationen über Unternehmen und ihre angebotenen Produkte/ Services zu erhalten, WÄHREND Sie mit dem Unternehmen bereits in einer Geschäftsbeziehung stehen? (Bitte markieren Sie alle zutreffenden Antworten)</p> <ul style="list-style-type: none"> • E-Mails • Chats • direkte Anrufe bzw. Videoanrufe (z. B. über Skype, Viber, Messenger usw.) • Unternehmenswebseite • Internet Recherche • Kürzere Artikel oder Inhalte (z. B. E-Mail-Newsletter, Blogbeitrag) • Kundenrezensionen (z. B. Amazon) • Audio (z. B. Podcast) • Videos (z. B. YouTube) • Fotos, Infografiken, Bilder oder bildliche Darstellungen • Längere Artikel oder Inhalte (z. B. E-Book, herunterladbarer Leitfaden) • Posts in sozialen Medien (z. B. Twitter, Facebook) • Folien oder Präsentationen

		Facebook) <ul style="list-style-type: none"> • slides or presentations • Word-of-Mouth • Other (please specify) 	<ul style="list-style-type: none"> • Word-of-Mouth • Sonstiges (bitte spezifizieren Sie)
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APPENDIX E. SURVEY QUESTIONS

B2B KUNDENLOYALITÄT

Herzlich willkommen!

Liebe/r Teilnehmer/in, wir möchten Sie gerne zu einer Forschung zur Kundenloyalität bei B2B-Unternehmen einladen. Dazu würden wir gerne mehr über Online-Kanäle in einer B2B-Käufer-Verkäufer-Beziehung erfahren. Wir würden gerne wissen, was Sie an der Online-Kommunikation mit Ihren externen Partnern (vor allem mit Lieferanten) besonders wichtig finden. Die Bearbeitungsdauer dieser Umfrage beträgt etwa 15 Minuten. Für den Erfolg der Studie bitten wir Sie, den Fragebogen vollständig auszufüllen und keine der Fragen auszulassen. Alle Daten werden anonym erhoben, sie können Ihrer Person nicht zugeordnet werden und werden streng vertraulich behandelt.

Vielen Dank für Ihre Teilnahme!

SCREENING

Q1 Aus welchem Bereich kommen Ihre Kunden?

- Business-to-business (B2B)
- Business-to-customer (B2C)

Q2 Nehmen Sie an einem/mehreren Einkaufsprozess(en) in Ihrem Unternehmen teil, bzw. nehmen Sie in der Kommunikation mit einem/mehreren Lieferanten teil?

- Ja
- Nein

Allgemeine Fragen

Q3 Welche der folgenden Antwortoptionen beschreibt die Branche, in der Ihr Unternehmen tätig ist, am besten?

- Automobilindustrie bzw. Kraftfahrzeugbau
- Bauindustrie
- Chemisch-pharmazeutische Industrie
- Elektronik & Elektrotechnik
- Energiewirtschaft
- Ernährungsindustrie

- Finanzen und Finanzdienstleistungen
- Immobilien
- Kunststoffindustrie
- Landwirtschaft
- Maschinen- und Anlagenbau
- Metallerzeugung und -bearbeitung
- Mineralölverarbeitung
- Papierindustrie
- Textilgewerbe bzw. Textil-, Bekleidungs- und Ledergewerbe
- Transport- und Zustellwesen
- Unternehmensförderung und Logistik
- Versicherungswesen
- Werbung und Marketing
- Sonstiges (bitte angeben)

Q4 Wie viele Mitarbeiter beschäftigt ihr Unternehmen ungefähr?

- 1
- 2 bis 5
- 6 bis 9
- 10 bis 19
- 20 bis 49
- 50 bis 99
- 100 bis 149
- 150 bis 249
- 250 bis 499
- 500 bis 999
- bis 2.499
- bis 4.999
- 5.000 bis 9.999
- Über 10.000

Q5 Welche der folgenden Antwortoptionen beschreibt Ihren aktuellen Beruf am besten?

- Tätigkeit als Geschäftsführung / CEO / Vorstand
- Tätigkeit in Business Development
- Tätigkeit in Projektmanagement
- Tätigkeit in Einkauf
- Tätigkeit in Finanzen
- Tätigkeit in Buchhaltung / Rechnungswesen
- Tätigkeit in EDV / IT
- Tätigkeit in Verwaltung / Sales / Vertrieb / Marketing / Kundenbetreuung
- Tätigkeit in Engineering / Forschung / Entwicklung
- Tätigkeit in Logistik / Materialwirtschaft
- Tätigkeit in Fertigung / Produktion
- Sonstiges (bitte angeben)

Q6 Welche der folgenden Antwortoptionen beschreibt Ihre aktuelle Position im Beruf am besten?

- Eigentümer/in / Geschäftsführung / Vorstand
- Führungsebene
- Mittleres Management
- Mitarbeiterin/Mitarbeiter mit Erfahrung
- Berufseinsteiger/in / Berufseinsteiger
- Sonstiges (bitte angeben)

Q7 Welche Abteilungen/Fachbereiche sind in Einkaufsprozessen in Ihrem Unternehmen involviert? (Bitte reihen Sie nach Wichtigkeit)

- Geschäftsführung / CEO / Vorstand
- Business Development
- Projektmanagement
- Einkauf
- Finanzen

- Buchhaltung / Rechnungswesen
- EDV / IT
- Verwaltung / Sales / Vertrieb / Marketing / Kundenbetreuung
- Engineering / Forschung / Entwicklung
- Fertigung / Produktion
- Logistik / Materialwirtschaft
- Sonstige, bitte spezifizieren

Q8 Wie viele Abteilungen/Fachbereiche sind durchschnittlich in Einkaufsentscheidungen in Ihrem Unternehmen involviert?

- 1
- 2
- 3
- 4
- 5
- mehr als 6

Q9 Welche der folgenden Quellen nutzen Sie, um Informationen über Unternehmen und ihre angebotenen Produkte/Services zu erhalten, BEVOR Sie sich zum ersten Mal an das Unternehmen wenden? (Bitte markieren Sie alle zutreffenden Antworten)

- E-Mails
- Chats
- direkte Anrufe bzw. Videoanrufe (z. B. über Skype, Viber, Messenger usw.)
- Unternehmenswebseite
- Internet Recherche
- Kürzere Artikel oder Inhalte (z. B. E-Mail-Newsletter, Blogeintrag)
- Kundenrezensionen (z. B. Amazon)
- Audio (z. B. Podcast)
- Videos (z. B. YouTube)
- Fotos, Infografiken, Bilder oder bildliche Darstellungen

- Längere Artikel oder Inhalte (z. B. E-Book, herunterladbarer Leitfaden)
- Posts in sozialen Medien (z. B. Twitter, Facebook)
- Folien oder Präsentationen
- Word-of-Mouth
- Sonstiges (bitte spezifizieren Sie)

Q10 Welche der folgenden Quellen nutzen Sie, um Informationen über Unternehmen und ihre angebotenen Produkte/Services zu erhalten, WÄHREND Sie mit dem Unternehmen bereits in einer Geschäftsbeziehung stehen? (Bitte markieren Sie alle zutreffenden Antworten)

- E-Mails
- Chats
- direkte Anrufe bzw. Videoanrufe (z. B. über Skype, Viber, Messenger usw.)
- Unternehmenswebseite
- Internet Recherche
- Kürzere Artikel oder Inhalte (z. B. E-Mail-Newsletter, Blogeintrag)
- Kundenrezensionen (z. B. Amazon)
- Audio (z. B. Podcast)
- Videos (z. B. YouTube)
- Fotos, Infografiken, Bilder oder bildliche Darstellungen
- Längere Artikel oder Inhalte (z. B. E-Book, herunterladbarer Leitfaden)
- Posts in sozialen Medien (z. B. Twitter, Facebook)
- Folien oder Präsentationen
- Word-of-Mouth
- Sonstiges (bitte spezifizieren Sie)

Informationsqualität

Bitte bewerten Sie die folgenden Aussagen angesichts der Kommunikation mit einem der wichtigsten Lieferanten für Ihren Job (XYZ)

Q11 Die Daten von XYZ sind niemals veraltet.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q12 Der Inhalt des XYZ ist immer korrekt.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q13 Die Daten von XYZ entsprechen meinen Anforderungen.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q14 XYZ stellt ausreichend Informationen zur Verfügung, damit ich meine Arbeit erledigen kann.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q15 Die Information von XYZ ist konsistent über verschiedene Kanäle.

- Stimme überhaupt nicht zu
- Stimme nicht zu

- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Wert

Q16 Die Nutzung der Daten von XYZ erhöht die Produktivität meines Unternehmens.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q17 Die Daten von XYZ sind für mein Unternehmen nützlich.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q18 Die Nutzung der Daten von XYZ erhöht die Effektivität meines Unternehmens.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q19 Die Nutzung der Information von XYZ verbessert die Leistung meines Unternehmens.

- Stimme überhaupt nicht zu

- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q20 Die Nutzung der Daten von XYZ erleichtert meine Arbeit.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q21 Die Information von XYZ reduziert den Zeitaufwand für meine Aufgaben.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Vergnügen

Unter digitalen Kanälen versteht man alle Formate der Kommunikation, welche mithilfe digitaler Medien ermöglicht sind.

Q22 Digitale Kanäle von XYZ sind unterhaltsam.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q23 Der Inhalt der digitalen Kanäle von XYZ ist für mich attraktiv.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q24 Ich benutze gerne digitale Kanäle von XYZ.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Systemqualität

Q25 Digitale Kanäle von XYZ sind leicht zu erlernen und zu bedienen.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q26 Die Navigation über die digitalen Kanäle von XYZ ist klar und verständlich.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q27 Die Nutzung der digitalen Kanäle von XYZ erfordert keinen Aufwand.

- Stimme überhaupt nicht zu

- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q28 Ich benutze verschiedene digitale Kanäle von XYZ, um die Information zu bekommen, welche ich brauche.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q29 XYZ bietet personalisierte und konsistente Daten für alle digitalen Kanäle und Geräte.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q30 Die Nutzung der digitalen Kanäle von XYZ erhöht die Fähigkeit zur Problemlösung.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q31 Die digitalen Kanäle von XYZ sind wertvolle Werkzeuge für mein Unternehmen.

- Stimme überhaupt nicht zu

- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q32 Im Allgemeinen unterstützt die Nutzung digitaler Kanäle von XYZ meine Arbeit.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Service Qualität

Q33 XYZ bietet professionelle Dienstleistungen als mein Vertriebspartner.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q34 XYZ bietet personalisierte Dienstleistungen.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q35 XYZ bietet einen zeitnahen Service.

- Stimme überhaupt nicht zu
- Stimme nicht zu

- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q36 XYZ reagiert auf alle Probleme, auf die ich stoße.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q37 XYZ weiß genau, was ich brauche.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q38 Im Allgemeinen ist der Kommunikationsprozess mit XYZ effizient.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Zufriedenheit

Q39 Ich bin mit der Nutzung der digitalen Kanäle von XYZ zufrieden.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu

- Stimme völlig zu

Q40 Die Daten von XYZ sind von hoher Qualität.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q41 Ich habe ein positives Gefühl gegenüber XYZ.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

S8 Kundenloyalität

Q42 Ich empfehle XYZ Kollegen, die meinen Rat einholen.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q43 Ich betrachte XYZ als meine erste Wahl für zukünftige Einkäufe.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q44 Ich mache in der nächsten Zukunft mehr Geschäfte mit XYZ.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Kundenengagement

Bitte bewerten Sie die folgenden Aussagen angesichts der Kommunikation mit Ihren Kunden /Endverbrauchern, bzw. einem der wichtigsten Lieferanten für Ihren Job (XYZ).

Q45 Wir ermöglichen eine wechselseitige Kommunikation mit unseren Kunden.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q46 Für uns ist es wichtig, dass unser Kunde / der Endverbraucher von uns lernt.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q47 Wir bemühen uns aktiv, unsere Kunden / den Endverbraucher für unser Produkt / unsere Dienstleistung zu gewinnen.

- Stimme überhaupt nicht zu
- Stimme nicht zu

- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q48 Für mich ist wichtig, von XYZ wertgeschätzt und unterstützt zu werden.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q49 Für mich ist wichtig, von XYZ immer wieder etwas Neues zu lernen.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Q50 Wir leiten das Feedback, das wir vom Endverbraucher erhalten, zu Produktentwicklungszwecken an XYZ weiter.

- Stimme überhaupt nicht zu
- Stimme nicht zu
- Stimme weder zu noch nicht zu
- Stimme zu
- Stimme völlig zu

Das Interview ist nun beendet. Vielen Dank für Ihre Antworten und noch einen schönen Tag!

Elina Stocker

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among industrial companies**

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