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Customer Loyalty and Characteristics of Digital Channels Among B2B Companies

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Abstract: *The paper investigates the effect of the characteristics of digital channels on business-to-business (B2B) customer loyalty. The paper is based on technology-based theories and investigates the effect of the characteristics of digital channels comprising ease of use, perceived usefulness, information quality and engagement on the level of B2B customer loyalty. The model was developed and empirically tested against data collected from the respondents using digital channels for work purposes. The respondents were product and technical product managers, purchase managers and marketing professionals. The structural equation modelling partial least squares analysis indicated moderate explanatory power of the suggested model. According to the results, customer loyalty is mainly affected by engagement rather than other characteristics of digital channels. Contrarily to the nature of the Technology Acceptance Model (TAM), ease of use showed no effect on perceived usefulness. The research advances the theoretical understanding of the role of the characteristics of digital channels and suggests recommendations to win customer loyalty in the B2B context. However, the chosen methodology, sample frame and sample size might limit the generalisability of the results.*

Keywords: B2B customer loyalty; ease of use; engagement; information quality; perceived usefulness
JEL Classification: M31, L1

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1. Introduction

"Brand loyalty runs deep". This is the conclusion of the consulting company PwC Canada (2017). In their study, they estimated that 67% of the costumers are staunchly brand-loyal, and 33% are eager to try new items. Not surprisingly, companies seek for loyal behaviour in order to create regular revenue. However, the results of recent scientific research show that a customer is not a purely rational decision-maker (Addis & Holbrook, 2001), but his consumption is an experience (Verhoef et al., 2009). At the same time, research shows several related aspects with this finding:

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1) There are various conceptualisations of customer experience. Following the compilations of Bruhn and Hadwich (2012) and Verhoef et al. (2009), customer experience has a sensoric, affective, behavioural, cognitive, lifestyle and social dimension and is also determined by consumer-related (i.e. socio-demography, price sensitivity, etc.) and situation-related factors (i.e., type of business, economic situation, season, competition, etc.) at time t. In customer experience management, companies often analyse the customer experience at a certain touchpoint using customer satisfaction to understand a customer's expectations and needs. This enables them to invest in marketing and communications more efficiently to increase the perceived quality and customer loyalty (Duncan & Moriarty, 2006, p. 243).
2) The empirical research regarding customer experiences and customer loyalty is mostly conducted in the B2C-area (O'Neill & Palmer, 2003). Empirical research in B2B is sparse (Bennett, Härtel, & McColl-Kennedy, 2005; Voeth & Loos, 2012). However, while B2C and B2B share similarities, there are crucial differences. In B2B, there are longer business relations, the services are often more complex, and more often than not, there are multiple decision-makers organised in a buying centre. Considering that customer experience is a personal matter, this is a significant challenge for companies. Also, decision-making in B2B contexts is less emotional than in B2C but relatively rational based on experience (Voeth & Loos, 2012).
3) Nowadays, it is almost impossible to imagine a business without new technology and digital tools. Even the most conservative companies are starting a digital transformation. This has a considerable effect on communication and marketing channels. Straker et al. (2015) believe that a clear understanding of digital channel-use provides companies with a solid foundation for marketing strategy, helping them to match company objectives with customers' needs (Straker et al., 2015). The management of companies' digital channels improves the customer communication process (Straker & Wrigley, 2016). A multi-channel and omnipresent marketing strategy addresses the needs of customers at every step of their customer journey. This helps customers to solve their problem quickly and creates additional value. This increases the level of customer satisfaction and loyalty. However, this process includes several challenges and risks. Statistically, some 70% of the cases of digital transformation fail (Bucy, Finlayson, Moye, & Kelly, 2016). This could be connected to recent research, revealing

that nearly 50% of B2B companies use digital marketing with little or no clearly defined strategy (Chaffey & Story, 2017).

This shows the practical and scientific need for further research as customer experience has a major impact on companies. For both areas, an empirical focus on B2B customer relations by integrating digital tools is vital and yet an enigma. Therefore, this article attempts to determine how and the extent to which the characteristics of digital channels influence buyer-seller relationships and contribute to creating B2B customer loyalty among B2B companies.

In terms of practical use, this is of particular relevance for small and medium B2B companies that have not yet developed a digital marketing strategy and are searching for a strategic orientation in order to create such a strategy, which facilitates and strengthens customer loyalty in the long term. Since companies typically strive to be commercially successful and to survive in today's challenging market environment, a set of USPs are of utmost importance.

For research purposes, the state of the art on this matter is outlined in chapter two. In chapter three, the theoretical groundwork is explained. The research is based on the Information System Success Model and the Technology Acceptance Model (TAM). In terms of theoretical contribution, the article contributes to the research on intention-based theories, specifically on the TAM and the IS success model. It shows the combined effect of both models on B2B customer loyalty. Methodologically, a survey-based approach is used by combining several validated scales. The analysis uses the partial least squares (PLS) method. The results are followed in chapter five and discussed in chapter six.

2. Literature Review

2.1 B2B customer loyalty

The ongoing digitalisation has shifted the primary goal of customer relationship management from traditional managing customers to managing dialogue with customers, engaging them and co-creating value (Lipiäinen, 2015; Vivek, Beatty, & Morgan, 2012). Modern research uses a composite approach to understanding B2B customer loyalty. B2B customer loyalty is observed as a combination of psychological attitudes, such as likeliness, satisfaction or repeat purchase behaviour, which can be measured in the number or frequency of purchases (Day, 1969; Jacoby & Kyner, 1973).

The early understanding of loyalty was based mostly on the behavioural approach and was understood as repeated purchase behaviour (Brown, 1952; McConnell, 1968; Tucker, 1964). Such studies focused mostly on outcomes

but not the reasons for such behaviour (Jacoby & Kyner, 1973). To solve this problem, the researchers tried to understand brand loyalty using an attitudinal approach. Brand loyalty from this point of view was considered a brand preference or a psychological predisposition towards a certain brand (Day, 1969; Jacoby & Chesnut, 1978). In order to respond to the criticism towards a one-sided understanding of customer loyalty, researchers suggested using a composite approach that combines the two aforementioned approaches (Aaker, 1991; Dick & Basu, 1994). Based on that approach, Jacoby and Kyner (1973) define brand loyalty as "...(1) the biased (i.e., nonrandom), (2) behavioural response (i.e., purchase), (3) expressed over time, (4) by some decision-making unit, (5) with respect to one or more alternative brands out of a set of such brands, and (6) is a function of psychological (decision-making, evaluative) processes" (Jacoby & Kyner, 1973, p. 3).

With the development of the Internet, the analysis of customer loyalty has shifted towards analysis within the evolving context. The first researches in that field were developed in the context of electronic commerce (Chen, Chen, & Capistrano, 2013; Janita & Miranda, 2013; Lages, Lancastre, & Lages, 2008), online marketing (Pereira, Salgueiro, & Rita, 2016; Verona & Prandelli, 2002), banking sector (López-Miguens & Vázquez, 2017), mobile marketing (D. Lee, Moon, Kim, & Yi, 2015; Yang, 2015) or social marketing.

However, researchers determine different antecedents of customer loyalty in the context of digital relationships (Ribbink, van Riel, Liljander, & Streukens, 2004). Several theories and approaches focused on the factors that cause people to accept and use new systems that have been developed. One of them is the Information System (IS) Success Model that was designed to evaluate the components of a system (technology) success. Originally, the model focused on two system characteristics - system quality and information quality. After ten years, the authors updated the model by adding service quality. Another model, the Technology Acceptance Model (TAM), was developed in 1985 to explain information technology usage behaviour. 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 to achieve the desired goal. Ease of use refers to a user's belief that a new technology is free of effort.

The development of technologies has motivated researchers to extend the existing models and adapt them to different types of users and systems (Legris, Ingham, & Collerette, 2003). The TAM and IS success model have evolved to respond to the notion of time. Venkatesh and Davis (2000) extended the TAM, referred to as TAM2, by adding external variables, the determinants of perceived usefulness and intention to use. Seddon (1997) slightly extended the original IS success model by explaining the level of satisfaction and system usage depending on the quality of a system and

information. Lin (2008) combined the TAM and Seddon model to examine user satisfaction and customer loyalty within virtual communities. The results have shown that the integrated model has better explanatory power than the TAM and the Seddon model alone (Lin, 2008).

The current research will be based on the integrated model suggested by Lin (2008) to ensure a holistic approach in understanding customer loyalty among B2B companies.

Prior research based on the IS success model, the Seddon model or the TAM has covered the topics of mobile (Lee & Park, 2008), web (Chen et al., 2013) and social media adoption (Lacka & Chong, 2016; Siamagka, Christodoulides, Michaelidou, & Valvi, 2015).

2.2 B2B digital channels

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 strategy is to create an omnipresent marketing strategy where no channel stands alone but instead is used interchangeably and seamlessly (Verhoef, Kannan, & Inman, 2015). This positively affects the usage behaviour of customers, allows a steady interaction with a company (Straker et al., 2015) and increases customer value by means of value-co-creation (Holliman & Rowley, 2014; Lipiäinen, 2015; Vivek et al., 2012).

To achieve a successful multi-channel strategy, it is essential to know what value the channels should transmit to 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. These criteria correspond with the idea of intention-based theories, which were discussed earlier, namely the IS success model and its modifications and the TAM. On the other hand, certain aspects did not receive much attention. This is especially true for the B2B-market. How information quality is affecting customer loyalty was described only by Fan (2013), who states that customer knowledge management, information and flow experience increase customer loyalty. The ease of use as a predictor for engagement was researched by Alcantara-Pilar, del Barrio-Garcia, Porcu and Crespo-Almendros (2015) who proved the influence of usability on the motivation and engagement on websites. This work is conducted on end-customers (Wolf, 2010).

3. Concept model and hypothesis

3.1 Information Quality

Information quality refers to a user's perception of relevancy, reliability and usefulness of the information (DeLone & McLean, 1992; Hilligoss & Rieh, 2008). McKnight et al. (2014) analysed how information quality and other constructs of new technology influence intentions to use new technology. Among other outcomes, the authors observe a positive effect of information quality on trusting beliefs and usage intentions. Information quality is an important antecedent of system use within the IS success model and the Seddon model. Several studies showed a correlation between information quality and perceived usefulness (Chen et al., 2013; DeLone & McLean, 2003; Lin, 2008; Seddon, 1997).

Different digital channels contribute to information quality in terms of information sufficiency and currency (McKnight et al., 2014). Social media sites allow customers to receive up-to-date information directly from a seller or a consumer. Relevancy and sufficiency of information obtained from websites and corporate videos help users in a decision-making process. This increases the level of trust and customer loyalty as a result. Correct and competent information helps B2B users to complete their particular tasks (Chen et al., 2013). This increases the degree of perceived usefulness and motivates users to continue relationships with a partner. Hence, the following hypotheses are suggested:

Hypothesis 1: *Information Quality has a positive effect on Perceived Usefulness.*

Hypothesis 2: *Information Quality positively influences Customer Loyalty.*

3.2 Ease of Use

Ease of use refers to the extent of believing that the use of a particular system (technology) is free of efforts (Lee & Park, 2008). Ease of use could be measured by functionality, accessibility of information or ease of navigation. King and He (2006) in their meta-analysis of the TAM research highlight the influence of ease of use on customer behaviour in the Internet context (King & He, 2006). Legris et al. (2003) count 22 out of 28 cases of positive and significant correlation between ease of use and perceived usefulness.

Moreover, several researchers observed a positive relationship between ease of use and usefulness in the digital context (Lacka & Chong, 2016; T. M. Lee & Park, 2008; Lin, 2008). Anderson and Swaminathan (2011) show that adaptation, commitment, network, assortment, transaction ease and engagement significantly affect satisfaction in e-commerce.

Users of digital media would like to be able to access information with minimum time and effort. Social media sites and websites allow presenting information as text, picture or video. The advantage of video content is the ability to appeal to multiple senses because it incorporates audiovisual elements. This all increases the ease of information consumption and the level of enjoyment or interaction (Hsu, Wang, & Chih, 2013). As a result, the following hypotheses are suggested:

Hypothesis 3: *Ease of Use is positively associated with Perceived Usefulness*

Hypothesis 4: *Ease of Use has a positive effect on Engagement*

Hypothesis 5: *Ease of Use positively influences Customer Loyalty*

3.3 Perceived Usefulness

Usefulness refers to the extent of the belief that the desired goal can be achieved while using a particular technology (Lacka & Chong, 2016). Usefulness is closely connected with value, and sometimes both variables are used interchangeably.

Hänninen and Karajuluto (2017) examine how perceived customer value affects B2B customer loyalty through marketing communication. The authors confirm a previously discovered link between perceived customer value and customer loyalty. Moreover, they assess the influence of perceived customer value on interaction and relationship quality.

B2B companies use different digital channels to increase perceived usefulness. Real-time communication in social media and the frequency of postings allow users to obtain first-hand and up-to-date information and, therefore, increase its usefulness. Furthermore, social media sites allow B2B consumers to communicate directly not only with a company but also with other consumers. A website is one of the most frequently used channels in B2B and is often used as a hub connecting different digital channels. Videos are often used by B2B companies to help customers learn something new and make their life easier.

The use of B2B digital channels helps users to achieve their goals and increase the level of perceived usefulness (López-Miguens & Vázquez, 2017). Prior studies empirically confirm the importance of perceived usefulness for the adoption of new technology and facilitation of customer loyalty (Hsu & Lin, 2008; Siamagka et al., 2015). This could be hypnotised as follows:

Hypothesis 6: *Perceived Usefulness positively influences Customer Loyalty*

3.4 Engagement/Interaction

Customer loyalty is often driven by intrinsic motivation. Intrinsic motivation refers to activities in which users are willing to engage for no reward other than interest and enjoy the use of new technology. Research highlights the importance of emotional contact, engagement and interaction with B2B users in the digital age. Researchers indicate that emotional involvement develops value-creative behaviour and has a positive impact on user behaviour and customer loyalty (Henderson & Cote, 1998; Lipiäinen, 2015; Straker & Wrigley, 2016).

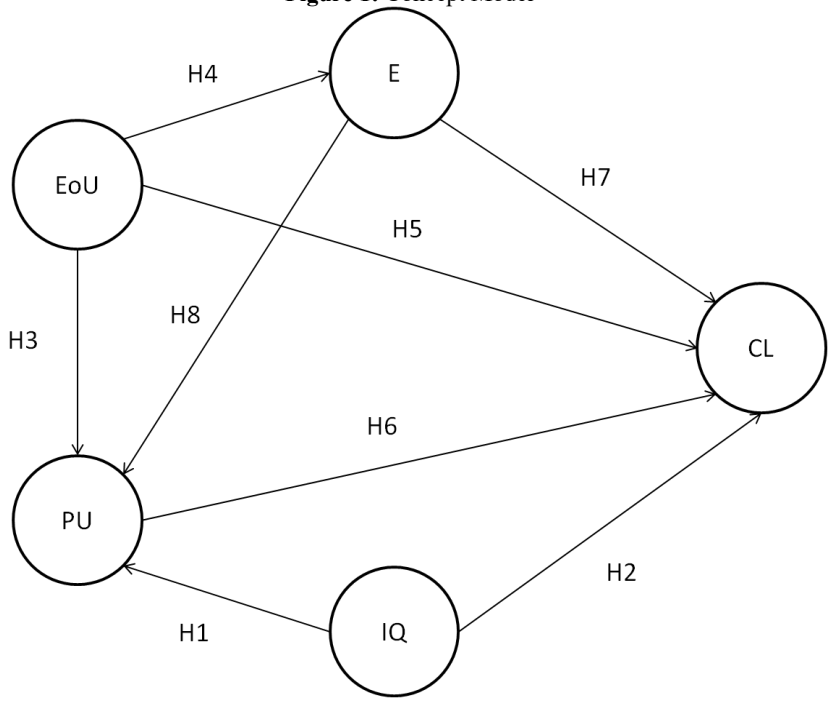
Digital channels are designed in a way to support intrinsic motivation. B2B users of social media use content not only for interaction and communication but also for the consumption of information. An entertaining way of presenting useful information increases the level of enjoyment. Lack of physical contact between online sellers and buyers motivates B2B companies to present information on a website or other digital channels in a way to be sufficient for taking customer decisions (López-Miguens & Vázquez, 2017). Moreover, direct contact and responsiveness of reply facilitate customer interaction, trust and loyalty. Based on these assumptions, the following hypotheses have been developed:

Hypothesis 7: *Engagement positively influences Customer Loyalty*

Hypothesis 8: *Engagement has a positive influence on Perceived Usefulness*

Figure 1 illustrates the concept model, which is adapted from the TAM and the IS success model and the related literature.

Figure 1: Concept Model



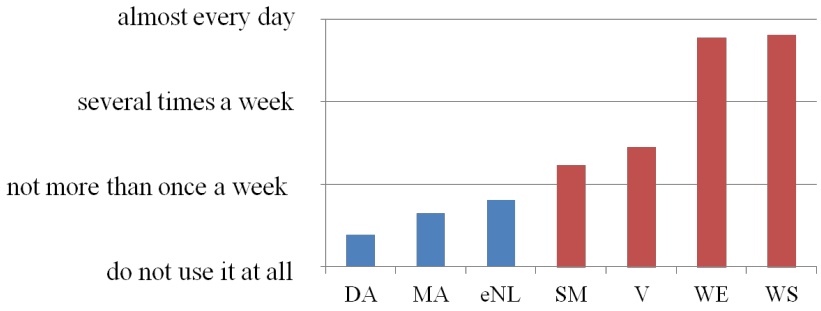
Source: Author's own work
Note: E = engagement/interaction; EoU = ease of use; PU = perceived usefulness; IQ = information quality; CL = customer loyalty

4. Methodology

4.1 The sample and data collection

The analysed choice of channels within the current research was based on the outcomes of the conducted survey. A short survey related to the frequency of using different digital channels for work purposes among the core sample group led to the results illustrated in Figure 2. The survey showed that the respondents use social media, videos and websites at least once a week, and websites and search engines with a frequency between several times a week and almost every day. Based on these results, it was decided to focus the current study on those digital channels which the sample group uses the most (except search engine).

Figure 2: Frequency of using digital channels



Source: Author's own work
Note: DA = digital advertisement; MA = mobile application; eNL = e-newsletters; SM = social media sites; V = videos; WE = websites; WS = search engines

To test the proposed model and the hypotheses, the current study focuses on industrial B2B companies as the testbed. The analysis was conducted in countries in Central Europe and Russia. The target sample contained marketing managers, product and technical product managers who use digital channels to get product information for work purposes.

To test the survey, a pilot study with six surveys was provided. The results showed little usage of several digital channels and the complexity of the same wordings. The marked questions were re-formulated or dropped out.
To collect the responses, a snowball sampling method was used. This method is often used for cases when it is difficult to reach potential participants. This method is often used in studies examining social media networks and customer behaviour (Bashir, Papamichail, & Malik, 2017; Lipiäinen, 2015; Radzi, Harun, Ramayah, Kassim, & Lily, 2018). This method has been used in this study to keep the topology of the network in order to ensure the unity of the respondents' profile and to recruit respondents with the most knowledge.

On average, each respondent provided one or two other respondents. The respondents represented professionals mostly from middle management working in B2B companies consuming industrial products. One of the main requirements was to be in a position able to take or influence purchase decisions. The respondents received a link for an online questionnaire published on an online survey platform. A cover letter explained the nature and importance of the research. The questionnaire covered 12 questions and was divided into three sections: 1) questions about important digital channels' characteristics; 2) questions related to one particular supplier (not a client), with the most frequent online contact over the last six months; 3) general information about the respondents – age group, occupation and the industry to which they belong. The data collection process lasted from

February to March 2018. The current study obtained 30 out of 35 completed responses. Table 1 presented the statistics about the respondents.

Table 1: Information about the respondents

Age	**Age Code**	**Age Frequency**	**%**
21-35	1	22	74
36-45	2	7	23
46-60	3	1	3
Gender	**Gender Code**	**Gender Frequency**	**%**
Male	1	21	70
Female	2	9	30
Field	**Field Code**	**Field Frequency**	**%**
IT/ Telecommunications	1	1	3
Marketing/ PR/ Advertising/ Media	2	7	23
Organisation/ Management/ Consulting	3	3	10
Sales/ Trade (retail/ wholesale)/ Customer Services	4	3	10
Technical Professions	5	16	54
Industry	**Industry Code**	**Industry Frequency**	**%**
Advertising/ Marketing/ PR/ Agencies	1	3	10
Building Construction and Civil Engineering	2	14	47
Consulting Services	3	1	3
Electrical Engineering/ Electronics	4	4	13
Metal Production and Processing	5	5	17
Non-Profit Organisations (associations, clubs)	6	3	10
Country	**Country Code**	**Country Frequency**	**%**
AT_Austria	1	12	40
DE_Germany	2	8	27
HU_Hungary	3	1	3
RU_Russia	4	9	30

Source: Author's own work

4.2 Measure

Scale measure was adapted from the existing literature. The scale items were measured on a 5-point Likert scale, ranging from 1 – "totally disagree" to 5 – "totally agree". The questions assessing customer loyalty were measured on a 5-point Likert scale, ranging from 1 – "very unlikely" to 5 - "very likely".

Table 2: Sources of the main constructs

Construct	Statement	Item	Item Code	Source
Engagement/ interaction	it offers an interactive way to get useful information	interactivity	E1	adapted from Hsu, Wang, & Chih (2011)
	it helps to communicate with several people at once	simultaneity	E2	adapted from Jung (2014)
	it offers the ability to have a direct contact to a partner or a customer	direct contact	E3	adapted from Hsu, Wang, & Chih (2011)
Ease of use	it facilitates finding what I want	accessibility of information	EoU1	adapted from López-Miguens & Vázquez (2017)
	it is easy to use	easiness	EoU2	adapted from López-Miguens & Vázquez (2017)
Information quality	it provides sufficient information to enable me to do the tasks and take decisions	sufficiency	IQ1	adapted from Chen, Chen, & Capistrano (2013)
	it provides up-to-date information	currency	IQ2	adapted from McKnight, Lankton, Nicolaou, & Price (2014)
Perceived usefulness	it is useful for my tasks	usefulness	PU1	adapted from Siamagka, Christodoulides, Michaelidou, & Valvi (2015)
Customer loyalty	*How likely are you to*... ...use X the next time you need similar products/ services/ information?	re-purchase	CL1	adapted from Hänninen & Karjaluoto (2017)
	...recommend X to colleagues or other companies?	WoM	CL2	adapted from Hänninen & Karjaluoto (2017)

Source: Author's own work

Engagement/interaction was measured by a three-item scale adapted from Hsu, Wang and Chih (2011) and Jung (2014). The items assess interactivity and simultaneity of communication, as well as the degree of direct communication. Ease of use was adapted from López-Miguens & Vázquez (2017) and measured the attitude of the respondents towards easiness of

using the channel and clarity of information access. Three items – accessibility of information from websites, ease of use of social media sites and videos – were used to assess this construct. Three items for information quality were adapted from Chen, Chen, & Capistrano (2013) and McKnight, Lankton, Nicolaou, & Price (2014). They measured the degree of sufficiency and the currency of information. Three items for perceived usefulness were borrowed from Siamagka, Christodoulides, Michaelidou, & Valvi (2015). They measured the usefulness of the information adopted from digital channels. Customer loyalty was represented by two items adapted from Hänninen & Karjaluoto (2017) and measured re-purchase intention and word-of-mouth (WoM) intention (Table 2).

5. Data analysis and results

Structural equation modelling was assessed using partial least squares (PLS) modelling (SmartPLS 3.0 software).

5.1 Measurement model

Construct reliability and validity were examined by confirmatory factor analysis. Reliability was assessed by the evaluation of internal consistency and construct validity by the examination of convergent and discriminant validity. Internal consistency was assessed using Cronbach's alpha (threshold: 0.70), composite reliability (CR, threshold: 0.70) and average variance extracted (AVE, threshold: 0.50). As displayed in Table 3, Cronbach's alpha varied from 0.683 to 0,.799. In two out of five cases Cronbach's alpha was below 0.7, however, according to Krippendorff (2004), the level of alpha above 0.67 is acceptable to make tentative conclusions (Krippendorff, 2004). Some authors suggest to use Dillon-Goldstein's (or Joreskog's) rho instead of Cronbach's alpha, because "…it is based on the results from the model (i.e. the loadings) rather than the correlations observed between the manifest variables in the dataset" (Vinzi, Chin, Henseler, & Wang, 2010, p. 51). In the analysed case, rho_A (threshold: 0.70) varies from 0,688 to 0,783. It was decided not to drop the items because of a small number of indicators. As evidence of convergent validity, each item loaded significantly on its underlying factor (greater than 0.70 and statistically significant at the 0.05 level).

Table 3: Psychometric features of the measurement model factor

Factor	Item	Standard loading	t-value	CR	Cronbach's alpha	rho_A	AVE
Customer loyalty	CL			0.900	0.779	0.783	0.819
	CL1	0.914	28.718				
	CL2	0.896	18.534				
Engagement/ interaction	E			0.824	0.683	0.719	0.612
	E1_V	0.798	8.831				
	E2_SM	0.665	3.626				
	E3_WS	0.869	18.017				
Ease of use	EoU			0.836	0.719	0.76	0.615
	EoU1_V	0.865	4.760				
	EoU2_SM	0.807	3.490				
	EoU2_WS	0.703	2.533				
Information quality	IQ			0.827	0.686	0.688	0.615
	IQ1_V	0.758	5.341				
	IQ2_SM	0.835	7.999				
	IQ1_WS	0,757	6.353				
Perceived usefulness	PU			0.850	0.735	0.739	0.653
	PU1_V	0.806	7.239				
	PU2_SM	0.794	7.100				
	PU1_WS	0.825	9.410				

Source: Author's own work

Table 4: PLS loadings and cross-loadings

	CL	E	EoU	IQ	PU
CL1	**0.914**	0.676	0.131	0.531	0.459
CL2	**0.896**	0.584	0.200	0.547	0.592
E1_V	0.578	**0.798**	0.458	0.537	0.564
E2_SM	0.395	**0.665**	0.201	0.596	0.450
E3_WS	0.632	**0.869**	0.376	0.521	0.672
EoU1_V	0.137	0.440	**0.865**	0.432	0.501
EoU2_SM	0.285	0.415	**0.807**	0.428	0.467
EoU2_WS	-0.104	0.144	**0.703**	0.323	0.375
IQ1_V	0.454	0.446	0.376	**0.758**	0.522
IQ2_SM	0.534	0.575	0.401	**0.835**	0.565
IQ1_WS	0.412	0.585	0.406	**0.757**	0.691
PU1_V	0.444	0.623	0.468	0.635	**0.806**
PU2_SM	0.431	0.435	0.525	0.575	**0.794**
PU1_WS	0.520	0.688	0.401	0.631	**0.825**

Source: Author's own work

Note: CL = customer loyalty; E = engagement/interaction, EoU = ease of use; PU = perceived usefulness

To test discriminant validity, all PLS item-to-construct loadings were compared with the cross-loadings (see Table 4). The results showed that each item-to-construct loading was greater than that of any other constructs, what could be inferred that the indicators are not interchangeable. Following Fornell–Larcker criterion, AVE is used to test discriminant validity. The square root of the AVE was higher than the variable inter-correlations (see Table 5).

Table 5: Factor correlation coefficients and square roots of the AVE

	CL	E	EoU	IQ	PU
CL	**0.905**				
E	0.698	**0.782**			
EoU	0.181	0.457	**0.795**		
IQ	0.595	0.688	0.504	**0.784**	
PU	0.578	0.729	0.571	0.761	**0.808**

Source: Author's own work

Note: The square root of the AVE is on the diagonal. These values should exceed the inter-construct correlations for adequate discriminant validity; CL = customer loyalty; E = engagement/interaction; EoU = ease of use; PU = perceived usefulness

Multicollinearity has been tested using the variance inflation factor (VIF) (Table 6). All VIF values fall below the recommended threshold of 5 (Hair, Ringle, & Sarstedt, 2011), suggesting multicollinearity is not of concern.

Table 6: Collinearity Statistics

	CL1	CL2	E1_V	E2_SM	E3_WS	EoU1_V	EOU2_SM
VIF	1.685	1.685	1.363	1.269	1.584	1.682	1.293
	EoU2_WS	**IQ1_V**	**IQ2_SM**	**IQ1_WS**	**PU1_V**	**PU2_SM**	**PU1_WS**
VIF	1.498	1.399	1.554	1.241	1.432	1.476	1.457

Source: Author's own work

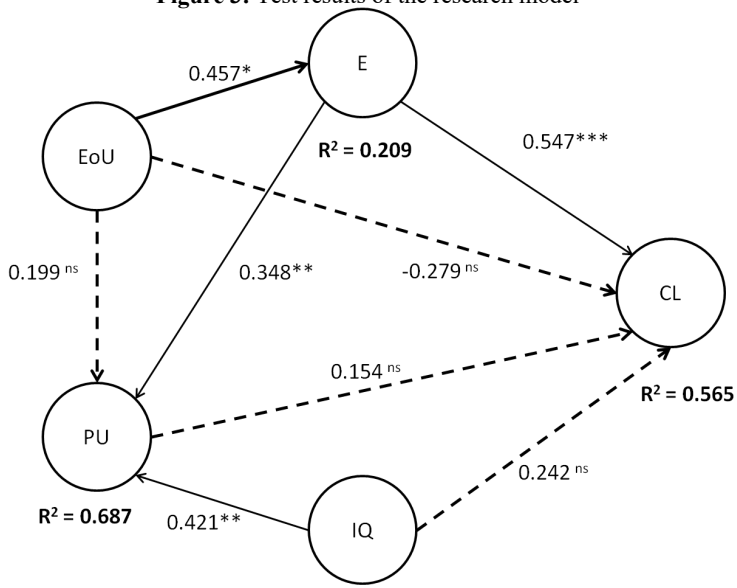
Note: CL = customer loyalty; E = engagement/interaction, EoU = ease of use; PU = perceived usefulness

5.2 Structural model

Figure 3 presents the structural model results. Examining R^2 indicates the variance of the dependent variable associated with all of the independent variables considered together. The results showed that 56.5% of customer loyalty could be explained by the influence of engagement, ease of use, perceived usefulness and information quality, whereas the significance level of the last three independent variables is not significant. Perceived usefulness could be explained to 68.7% by the influence of ease of use, engagement and

information quality. Finally, 20.9% of variation on engagement could be explained by the ease of use.

Figure 3: Test results of the research model



Source: Author's own work
Notes: ⟶ significant *p < 0.1, **p < 0.05, ***p < 0.001; - - -≫ not significant

A blindfolding procedure with a seven-omission distance has been used to obtain a cross-validated redundancy. The obtained values of the cross-validated redundancy Q^2 are all positive, and then our model has predictive validity (Table 7).

Table 7: Predictive relevance

	R^2	Q^2
CL	0.495	0.349
E	0.181	0.099
EoU	-	-
IQ	-	-
PU	0.651	0.390

Source: Author's own work
Note: CL = customer loyalty; E = engagement/interaction, EoU = ease of use; PU = perceived usefulness

To evaluate the impact of a particular independent construct on a dependent construct in the structural model, Cohen's $f2$, which is determined by $f^2 = R^2_{included}-R^2_{exluded}/(1-R^2_{included})$ has been used (Cohen, 1988). Values of 0.02, 0.15 and 0.35 reflect whether a path has a small, medium or large effect at the structural level (Askariazad & Babakhani, 2015). Table 8 represents the effect size of the paths among independent and dependent variables in the structural model. According to the analysis, the path between engagement and perceived usefulness is moderate to large and between engagement and customer loyalty - large. This means that the removal of the path from the model would have greater than moderate effect on customer loyalty. On the other hand, the removal of perceived usefulness would lead to the greater that small increase of R^2 for engagement, because the path between the perceived usefulness and engagement is negative.

Table 8: Effect size

	EE		**PU**		**CL**	
	f2	**Effect size**	***f2***	**Effect size**	***f2***	**Effect size**
CL	0.269	Large effect size	0.021	Small to moderate		
E			-0.037	Negative small to moderate	0.008	Small effect size
PU	0.198	Moderate to large			-0.022	Negative small to moderate

Source: Author's own work
Note: CL = customer loyalty; E = engagement/interaction, EoU = ease of use; PU = perceived usefulness

According to the significance of path coefficients, information quality has a positive effect on perceived usefulness (0.421, $p < 0.05$). This, H1 has been supported. However, H2, which states that information quality positively influences customer loyalty, has not been supported because of low significance levels of the relationships. This could be explained by the fact that customer loyalty reflects the attitude to a product or a company, whereas information quality presented through digital channels is not connected to a product proper.

Ease of use has no significant effect on perceived usefulness, leading to the rejection of H3. If the marketing tool does not represent information or a service that helps users in achieving their goals, ease of navigation, and clearly structured access to information alone have low importance to users. Ease of use shows a significant moderate effect on engagement/interaction (0.457, $p<0.1$), supporting H4. Hypotheses H5, which reflects the impact of ease of use on customer loyalty, has not been supported because of low

significance levels. Since the majority of the author's sample consists of "digital natives", who have grown up with and been influenced by digital and social media, the ease of use component of marketing tools have only a very limited meaning to them.

Regarding H6, which states the influence of perceived usefulness on customer loyalty, the significance level of the coefficients was low ($t = 0.650$). Hence, the hypothesis has not been supported. This might be because customers have begun to differentiate between loyalty to digital channels and products or a company.

Interestingly, the research has shown the importance of engagement/interaction for B2B customer loyalty. According to the significance of path coefficients, customer loyalty is mainly dependent on engagement/interaction (0.547, $p < 0.01$). Hence, H7 has been supported. Besides, engagement/interaction has shown a significant positive effect for perceived usefulness (0.348, $p < 0.05$); leading to the support of H8.

According to the significance of path coefficients, customer loyalty depends mainly on engagement/interaction. The other relationships to customer loyalty were not significant.

Table 9: Summary of the investigated hypothesis and results

Item	Hypotheses	Fulfilment of hypotheses
H1	Information Quality has a positive effect on Perceived Usefulness.	supported
H2	Information Quality positively influences Customer Loyalty.	not supported
H3	Ease of Use is positively associated with Perceived Usefulness.	not supported
H4	Ease of Use has a positive effect on Engagement.	supported
H5	Ease of Use positively influences Customer Loyalty.	not supported
H6	Perceived Usefulness positively influences Customer Loyalty.	not supported
H7	Engagement positively influences Customer Loyalty.	supported
H8	Engagement has a positive influence on Perceived Usefulness.	supported

Source: Author's own work

6. Conclusion

6.1 Discussions and limitations

The aim of the current paper was to examine the role of characteristics of digital channels in B2B customer loyalty. Specifically, the research model included the antecedents of customer loyalty adapted from the TAM and the

IS success model. The suggested model connects the characteristics of digital channels (videos, social media sites and websites) with customer loyalty. The empirical tests were conducted on the B2B industrial data set.

The analysis showed unexpected results. Firstly, only one out of four characteristics of analysed digital channels have shown a significant effect on B2B customer loyalty. According to the findings, engagement/interaction has a positive and significant effect on customer loyalty. Information quality, ease of use and perceived useful do not influence customer loyalty significantly, which is contrary to the theoretical expectations, the current research and Fan (2013). This could be explained by the structure of the sample. The majority of the sample group were young male respondents representing generation Y. One of the characteristics of generation Y in comparison to other generations is their close connection with media. Representatives of this generation are accustomed to using media from young and do not differentiate the use of media from personal or work purposes. Especially in the less emotion-based B2B market, the lack of significant influence of information quality and perceived usefulness is surprising. On the other hand, it is possible that these rather rational attributes influence metrics like customer satisfaction which then increases loyalty over time. Therefore, customer satisfaction is a mediating variable and could be considered as such in further research. The significant correlation between engagement/interaction suggests that by the time the customers engage, there is a significant amount of conviction and satisfaction so that loyalty increases. Also, it might question the role of emotions in B2B-transactions. The engagement is influenced by the ease of use that indicated that the model has several steps with mediating variables. Something that is easy to use will create more involvement compared to something that is difficult to use.

Second, ease of use has shown no significant effect on perceived usefulness, what contradicts the prior research (King & He, 2006; Legris et al., 2003), especially, within the TAM. However, similar outcomes have been already diagnosed in previous research, e.g. by Siamagka et al. (2015). This could be explained by the fact that the users possess knowledge of using a digital channel but have no clear understanding of the value of using the channel. On the other hand, the significant effect of information quality and engagement on perceived usefulness shows that something that is considered qualitative causes people to engage and has more use. The difference in the influences between perceived usefulness and loyalty supports the thesis that there is a consequential chain between usefulness and actual loyalty.

Finally, the results show only moderate explanatory power of the proposed model for the B2B industrial sector. Four out of eight research hypotheses were supported. The model explains 57% of the variation in customer loyalty and nearly 69% in perceived usefulness. The model also indicates 21% of

the variation in engagement. The results show that customer loyalty is mainly affected by engagement, rather than other constructs.

This study has certain limitations. First, the sample size and the number of variables are small, and may raise some concerns about the generalisation of the findings. Second, the data set represents companies from Central Europe and Russia, which may limit the generalisability of the results in respect to other B2B industries in those countries and to similar industries in other countries. Third, a bias might exist because of the selection of the sampling method. From a methodological perspective, a snowball method could create concerns about possible relationships and biases among respondents. Fourth, the sample distribution is unequal. The high distribution of male respondents of a certain age group could create a bias. Further, cultural characteristics might influence scale performance. The grading system in Hungary and Russia differs from those in Austria and Germany. All four countries use a 5-grade system, but in Hungary and Russia, 1 is the best mark and 5 is the worst, whereas in Austria and Germany 5 is the best mark and 1 is the worst. Finally, the study does not differentiate the size and the form of the companies; which the respondents represented.

Future research could extend the number of endogenous variables. It is recommended to increase the sample size and extend the study into other industries and/or other countries. As the suggested sample distribution is unequal, it is recommended to extend the sample group to all age groups, i.e. not overweigh digital natives whose judgement could be different from those held by older generations. Only part of the measurements of ease of use, perceived usefulness, engagement/interaction and information quality was used to explain B2B customer loyalty. While only half of the proposed hypotheses were supported, other endogenous variables like information reliability or competence may provide additional explanatory power. Moreover, it is recommended to add other antecedents of customer loyalty. For example, variables reflecting relationship quality, trust, satisfaction could be evaluated. It is also suggested to add some moderating variables like relationship duration, the maturity level of digital marketing, etc. Furthermore, there must be further research towards the relationship between perceived usefulness of technologies and customer loyalty, as highlighted in this section.

6.2 Managerial Implications

The results of the study have important implications for both theory and practice. The current technology acceptance research stream has been extended by combining two models, the TAM and the IS success model. The combination of these two models developed a new research framework,

which highlights the importance of information (content) quality from the usability perspective.

The findings of the research have certain managerial implications. The research highlights the importance of entertaining and easy structure of the information for establishing high levels of customer loyalty. 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 customer loyalty. Also, companies should pay attention to how useful a certain technology may be considered. The line between the use of digital channels for private and work purposes is being blurred. Users are habituated to a certain content and wish to be entertained and also interested in the workplace. The moderate power of the suggested model suggests that industrial companies not to focus exclusively on digital presence. In summary, the digital presence insured by digital channels might not be enough to build strong and trusted relationships with B2B customers.

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