

The Age of Digitisation: the influence of digital channels on customer experience and customer relationships

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Abstract: *Design/methodology*

Organisations are digitising the customer journey at a fast pace but have no idea what the effects of digitisation will be on customer experience and customer relationships. This paper describes two studies on digitisation in customer contact and the effects on customer experience and customer relationships. The first study examines how a relatively new medium, such as chat, relates to more a traditional medium such as the telephone. The second study examines the effects of re-directing customers from a traditional channel like telephone to the internet.

Purpose:

The research described in this paper was designed to measure these effects of digitisation on customer experience and customer relationships.

Findings

Findings show that customers have a more positive customer experience when they use a digital channel like chat than when they use a traditional channel like phone, regardless of whether they have a simple or a complex question. The use of a digital channel does not have an impact on the customer relationship. Channel direction, however, has a negative impact on customer experience but also does not have an impact on the relationship.

Practical implications

Our research shows that the use of digital channels like chat, unlike what people often think, do not necessarily have to lead to a deterioration of customer experience. In certain cases, the use of digital channels will lead to an improvement of customer experience. The research results also show that neither the used communication-medium nor a restriction of freedom of choice have a significant influence on the relational models.

Originality:

The most important contribution of this paper to the scientific literature is that it provides a deeper insight into the effects of some aspects of digitisation on customer experience and customer relationships. It also provides insight into the applicability of relational models in existing customer-supplier relationships.

Keywords: *digitisation; digital channels; digital media; customer experience; customer relationships.*

I. Introduction

New technologies have created additional communication channels for organisations and customers. Internet, email, social media, chatbots (automated chat conversation), live chat (live chat conversation with real employees) and Short Message Service (sms) have expanded the opportunities of communicating with each other. The proliferation of the number of communication channels has offered customers new opportunities to transact and communicate with the firm (Cao & Li, 2015). Customers increasingly use alternative channels to purchase products and services and to contact the firm for other purposes including requesting information. Organisations have integrated these new channels into their daily operations. In the past decade the trend was to integrate innovations that are able to shift services from physical employee (human) to the computer (self-service technologies; Pantano & Migliarese, 2014). The increasing use of digital channels also leads to an increase in complexity of customer-firm interactions (Van Bruggen, Antia, Jap, Reinartz, & Pallas, 2010). Nowadays, a customer might already simultaneously interact with a service robot, sensors built into the

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servicescape, a mobile application, and a human being, who might be an employee or a friend (Bolton, McColl-Kennedy, Cheung, Gallan, Orsingher, Witell, & Zaki, 2018). Technology will be part of everyday service experience and will be incorporated into the customer's frontline experience.

The incorporation by service providers of technological elements into the customer's frontline experience (which is called 'technology infusion'; Mende, Scott, Van Doorn, Grewal, & Shanks, 2019) will increase rapidly in the next decade. There are predictions enough about the death of brick-and-mortar stores, how customers will spend more time in virtual reality, and the ways that robots and artificial intelligence (AI) will replace service employees (Huang & Rust, 2013). Many service providers are already experimenting with virtual assistants and AI chatbots to help customers getting their questions answered. Today's digital technologies enable virtual experts, that is, agents who interact with consumers to answer questions, provide recommendations, and deliver advice in any place, time, or format (Breidbach, Choi, Ellway, Keating, Kormusheva, Kowalkowski, Lim, & Maglio, 2018).

Technological developments are changing the capabilities of service organizations and systems (Breidbach et al., 2018) and are transforming both customer service, customer relationships and customer experience (Lemon, 2016; Van Doorn, Mende, Noble, Hulland, Ostrom, Grewal, & Petersen, 2017). To truly understand customer experience, organisations need to have a comprehensive view of the customer experience over time that integrates the digital, physical and social realms (Bolton et al., 2019). Since the publication of Pine and Gilmore's book 'The Experience Economy' (1999), a considerable amount of research has been conducted on customer experience (e.g., Gentile, Spiller, & Nogi, 2007; Meyer & Schwager, 2007; Verhoef, Lemon, Parasuraman, Roggeveen, Tsiros, & Schlesinger, 2009), and many attempts have been made to define the concept. Verhoef et al. (2009) stated that the concept of customer experience is holistic in nature and encompasses the entire experience, including the search, purchase, consumption, and after-sales activities. The concept itself relates to the cognitive, affective, emotional, social, and physical reactions of the customer to the provider. Much research has also been conducted into the determinants of customer experience in both business-to-consumer as business-to-business, such as social environment, service interface, and environmental influences (e.g., Brunner-Sperdin & Peters, 2009; Meyer & Schwager, 2007; Verhoef et al., 2009).

It is to be expected that digitisation will have an effect on customer experience and customer relationships, as it changes the service interface and the social environment. Attempts have been made in a number of studies explaining the extent into which building relationships with consumers becomes more difficult in the new technology-enriched retail settings, due to the increasing consumers' willingness to choose selfservice services (Pantano & Milglares, 2014; Poon, Albaum, & Chan, 2012). Organizations are adopting innovative digital technologies, such as mobile, location-based, virtual reality, digital twins, blockchains, AI, wearable technologies, neuroscience, and business process automation, as well as machine-to-machine interactions through the Internet of Things (IoT; Bolton et al., 2018). Digital technologies can provide a highly personalized and immersive environment that allows for interactivity and rich information exchange between the organization and consumer (Parise, Guinan, & Kafka, 2016).

Although a number of studies have been performed into the determinants and moderators of customer experience, none of these studies specifically address digitisation as a possible determinant of customer experience and customer relationships. In this paper we will investigate the effects of the use of digital channels on various dimensions of customer experience and the effects of digitisation on customer relationships.

II. Customer communication through digital channels

One of the most important conceptualisations of the use of communication media is Daft and Lengel's (1986) Media Richness Theory (MRT). This theory assumes that communication media differ in the communication capacities they allow their users. Face-to-face contact is seen as the richest medium, followed in order of decreasing richness by video conferencing, telephone, two-way radio, written addressed documents (including e-mail and letters) and, finally, unaddressed documents (including bulk mail and posters). The theory assumes that the more complex the message, the more signals and information the receiver needs to understand the message and, therefore, the richer the medium needs to be. The medium should match the needs of the customer. A simple message can be communicated through the internet or through a simple, short email. For a more complex message it would be better to use a richer medium like face-to-face or voice-to-voice conversation.

At present, many organisations are creating possibilities for communicating with customers in alternative ways. The use of live chat seems to be one of the most interesting developments. The ability to communicate with customers via a chat is improving as a result of technological developments. The question is what influence live-chat has on the customer experience when compared with the experience of a telephone call, and whether the type of question plays a role in the experience of the medium. Following the MRT, one might assume that customers with a simple administrative question will have a better experience with chat than with the medium of the telephone. For many people chat will be a more accessible medium than the telephone

because no personal contact is involved. As Reddick (2010) already showed, customers prefer to choose a website rather than telephone when they only need information. In case of a complex question, telephone contact with a real employee resulted in a better experience than contact with a virtual assistant. According to the MRT a telephone is seen as a richer medium that is more convenient for a customer with a complex question. The agent on the telephone should be better able to receive signals from the customer and to react adequately to these.

III. Customer relationships are becoming digital

Digital technologies are changing customers' expectations and behavior, how organizations and networks are organized, and the role of "humans" in the marketplace— where the lines between human and machine are becoming blurred (Lemon, 2016). In this new environment the nature of the relationship between organisations and customers will probably also change considerably. Technology will not only affect the way organisations and customers communicate with each other, but it will also change the extent to which they feel involved with each other. What became clear in previous studies (e.g., Aggarwal, 2004; Kaltcheva & Parasuraman, 2009; Kaltcheva, Winsor, & Patino, 2011; McGraw, Schwartz & Tetlock, 2012; McGraw & Tetlock, 2005; Paulssen, Leischnig, Ivens, & Birk, 2016; Zhang, Liu, & Chen, 2018) is that the way in which customers perceive the relationship with an organisation, has a significant impact on the evaluation of the organisation, their products, and services. One of the latest conceptualisations of relational models in social science is the Relationship Models Theory (RMT; Fiske, 1991). The theory has been extensively tested and has received support in a large number of studies in different cultures. These studies have focused mainly on interpersonal relations. In the latest decade the theory has also been validated for a business environment (e.g., Aggarwal, 2004; Kaltcheva & Parasuraman, 2009; McGraw, Schwartz, & Tetlock, 2012; McGraw & Tetlock, 2005; Wan, Hui, & Wyer, 2011). Previous research showed that the RMT is also applicable to both business-to-consumer and business-to-business relationships. For example, Blois and Ryan (2012) use the RMT to develop an analysis of the interplay between the macro- and micro-level dimensions of business-to-business interactions.

The RMT distinguishes four elementary relational models: Communal Sharing, Market Pricing, Authority Ranking, and Equality Matching. In Communal Sharing (CS) there is a common interest and/or solidarity between the parties within the relationship. Parties invest something in the community and get something out of it, without monitoring the size of the investment and the return on this investment. Parties want to connect with each other because they want to share their personal characteristics, or because they want to share each other's resources. Authority Ranking (AR) organises relationships in terms of authority. The parties concerned are often in a hierarchical or authority relationship towards each other. In Equality Matching (EM) the degree of balance is very important. The investment in the relationship must be balanced with what the two parties get out of the relationship. Both parties keep track of what is invested and what each person receives. Finally, in Market Pricing (MP), the participating parties use a common value (usually money) to determine the value of the investment and the return on investment. A good cost-benefit ratio is essential in this kind of relationship. In this paper we focus on the relational models CS, MP and AR, as these models are supposed to be the models that are most present in client-provider-relations (Kaltcheva, Winsor, & Patino, 2011). In the first study of this paper, we limit ourselves to the models of CS and MP, in the second study we added the model of Authority Ranking (AR) as this study focused on the effects of a typical authority-based intervention.

The question is not only whether the use of a digital medium has an impact on the customer experience, but also whether the use of digital media will have an effect on relationship norms. Following the RMT (Fiske, 1991) it is to be expected that customers who use CS norms have communication needs that differ from those of customers who use MP or AR norms. Our expectation is that for simple, administrative questions, chat will have a more positive impact on customer experience than the telephone. We also expect that this will have no effect on the relational models used, as the ease of use will be appreciated by customers in all kinds of relationships. Previous research has shown that in their choice for a particular communication channel, customers are often led by factors such as ease of use, habits, and emotions (Pieterse, 2009). Chat is usually seen as a more accessible medium but is thought to be especially suitable for simple questions.

However, if the communication concerns a complex question, then the experience of the medium by CS and MP customers will probably be different. Customers prefer to call if they have a complex question because they feel that a telephone gives them a greater opportunity to tell their story (Reddick, 2010). If we follow the MRT (Daft & Lengel, 1986), the medium of telephone may better enable a customer to connect emotionally to the organisation and its' employees than the more distant, non-personal medium of chat. Chat is a medium that gives customers less opportunity to establish an emotional connection. In the case of a complex question the medium of telephone will lead to a more positive customer experience than the medium of chat. This is something that CS customers in particular, consider to be important. CS customers have a need to connect themselves with the organisation and to identify with the values that represent the organisation (Fiske, 1991; Kaltcheva, Winsor & Patino, 2011). Customers will therefore strengthen CS norms when a complex

question is handled by phone. MP customers will probably see the medium chat as a deterioration of the cost-benefit ratio. Certainly, if they have to ask a complex question via chat when they would prefer to do this over the telephone. The result will be that the customer will probably experience a taboo trade-off (Fiske & Tetlock, 1997) and strengthen MP norms.

Hypothesis 1: In the case of a simple, administrative question a chat conversation with a virtual employee will lead to a more positive customer experience than a conversation by telephone with a real employee; this scenario will have no effect on the relational model that is being used by the customer;

Hypothesis 2. In the case of a complex question, contact by telephone will lead to a more positive customer experience than a chat conversation and it will lead to a strengthening of CS relationship norms;

Hypothesis 3: In the case of a complex question, a chat conversation will lead to a less positive customer experience than a telephone call and to a strengthening of MP relationship norms;

As previously indicated the concept of customer experience is holistic in nature and encompasses the entire experience, including the search, purchase, consumption, and after-sales activities. The concept itself relates to the cognitive, affective, emotional, social, and physical reactions of the customer to the provider. There is not one single measure that can be used to map the entire customer experience. In the studies described in this paper we therefore use a number of different measures for measuring customer experience: intervention evaluation, consumption emotions, customer satisfaction and recommendation intention. These measures are described in the 'Measures' section of the two studies.

IV. Channel Choice and Channel direction

In recent years organisations have become increasingly aware of the advantages of digital channels. The use of digital channels is not only easier for organisations and customers, it is also less expensive. This is the reason that more organisations are encouraging or even directing their customers to make use of the digital channel. This is also referred to as channel direction. Channel direction takes place in many ways. For example, organisations can make it difficult for customers to find a telephone number in their written communications or on their internet site. Organisations can also simply prohibit customers from contacting them by telephone. Emotions can arise when customers feel that their freedom of choice or autonomy is affected. Unlike other studies on channel direction, in our study we have investigated channel direction from the perspective that channel direction usually means a restriction of freedom of choice and an undermining of the autonomy of customers. Based on previous research (e.g., Brehm, 1966, 1989; Brehm & Brehm, 1981; Wicklund, 1974), the expectation is that — depending on the nature and tone of the channel direction — a limitation of the freedom of choice will result in a larger or lesser reaction of emotional resistance. A study by Liu (2012) discusses the impact of forced self-service on customers. This study shows that imposing a self-service for a specific group of customers can have disastrous consequences for their customer experience. In the second study we therefore look at the impact of a restriction of freedom of choice in communication channels on the customer experience.

According to previous research, customers can respond in two ways to a restriction of their freedom of choice. The first research stream suggests that people enter into a series of cognitive processes that are aimed to place the restriction in the most positive light for the particular individual (Aronson, 1989; Elster, 1983; Kay, Jimenez, & Jost, 2002). This set of processes is called rationalisation. The cognitive processes have to identify a specific purpose that is served by the restriction of freedom of choice, and this purpose makes it more attractive for those people who are in the process of rationalisation. According to this theory, when it comes to channel direction, people would tell themselves the reasons why it is better for them to use the internet channel. For example, people might think that using the internet or email is better for their wallet or that the use of the internet makes a positive contribution to the environment.

The second research stream suggests a different reaction when people are limited in their freedom of choice. According to this stream, people are motivated to restore a restriction in freedom, and they will react negatively to others' attempts to restrict this freedom (Brehm, 1966/1989; Wicklund, 1974). In so doing, the value that a person attributes to his or her freedom of choice will be emphasised. The freedom of choice is made more attractive. And the person that is faced with the restriction will try to restore his or her freedom of choice. Researchers describe the reaction in which people emotionally resist a restriction in freedom of choice as reactance (Brehm, 1966/1989; Wicklund, 1974).

For decades the conflicting streams of research stood side by side in the psychological literature. Laurin, Kay, and Fitzsimons (2012) have shown that the nature of the restriction determines which of the two processes will occur. An absolute restriction is complete, certain, and permanent; there are no (temporary) alternatives. For our study an absolute restriction of freedom of choice in communication channels could mean, for example, that from a certain moment on one can only communicate via the internet for a particular action. It is no longer possible to make a telephone call to the service department. A non-absolute restriction is

incomplete, uncertain, or temporarily restricted. For our study this would mean that people (temporarily) still have an alternative channel of communication at their disposal, such as the telephone. The investigation of Laurin et al. (2012) shows that if the restriction of freedom of choice is absolute, people are more inclined to rationalisation. They will thus try to place the restriction of freedom of choice in a positive light. A non-absolute restriction evokes reactance because people are confronted with the fact that they are going to lose something in the future that is still currently available.

When organisations direct customers towards the internet, thereby reducing customer choice, this could have consequences for the relational models applied by customers and their experience of the service process. One of the most important values in relational model CS is equivalence (Roccas & McCauley, 2004). The restriction of freedom of one party by the other party will be seen as a violation of this value, which will lead to a less positive customer experience. Within an MP relationship a restriction on freedom of choice will be experienced by the person as a deterioration of the cost-benefit ratio, unless it means that the costs are reduced. Each party in the MP relationship aims at the best possible cost-benefit ratio. The MP customer will realise that restricting the freedom of choice by sending him or her to the internet, will have a favourable effect on costs for the organisation. Initially a customer will assume that this will also be beneficial for him or her. However, if the organisation does not provide any compensation, the customer will tend to additionally emphasise the costs and benefits ratio in the relationship. This could eventually lead to a strengthening of MP relationship norms. A restriction on the freedom of choice will lead to a less positive customer experience than if there is no restriction on freedom of choice. This effect will probably be more visible in a scenario of non-absolute limitation of freedom of choice than in a scenario with an absolute limitation.

Hypothesis 4: A limitation in the freedom to choose a communication channel will lead to a more negative customer experience than if the freedom of choice is not limited and it will lead to a weakening of CS relationship norms and a strengthening of AR relationship norms.

Hypothesis 5: The negative impact of a restriction of freedom to choose a communication channel is stronger in the case of a non-absolute limitation than in the case of an absolute limitation of the freedom to choose.

The next paragraphs describe the outcomes of two studies into the effects of digitisation on customer experience and customer relationships. The first study was designed to test the first three hypotheses, the second study to test hypotheses 4 and 5. Both studies describe an experiment that took place in a business-to-consumer environment. Our assumption is that an experiment in a business-to-business environment will not show substantial different results, due to the universal character of relational models.

Study 1: The Virtual Employee

In this first study we examined the difference between the experience of a customer with a telephone conversation and the experience of a customer with a chat conversation. The difference in experience is studied in a situation where the customer had a simple, administrative question, and a situation where the customer had a more complex question. In addition, this study investigated the effect on the relational models of the use of these different media for different types of questions. The study was conducted with existing customers of a health care insurance company.

V. Method

The study employed a between-groups design with communication channel and task complexity as independent variables. Task complexity varied with two levels: some participants were confronted with a scenario about the handling of a simple administrative question, other customers were confronted with a complex insurance-related question (for more details see below). Communication channel was manipulated by the communication channel that was used. Some customers listened to a telephone conversation between a customer and a call centre employee. Another group of participants saw a chat conversation between a customer and a virtual assistant. After listening to the telephone call or seeing the chat conversation, a manipulation check was performed to assess the perceived complexity of the question. The manipulation check measured whether customers actually evaluated the simple question as more simple than the complex question. A one-way ANOVA showed that the simple question was assessed as significantly more simple than the complex question ($M_{\text{SIMPLE}} = 5.31$, $SD = 1.40$, $M_{\text{COMPLEX}} = 3.16$, $SD = 1.46$; $F(1, 132) = 51.53$, $p < .001$). The complex question was rated as significantly more complex than the simple question ($M_{\text{SIMPLE}} = 3.47$, $SD = 1.54$, $M_{\text{COMPLEX}} = 4.51$, $SD = 1.61$, $F(1, 132) = 25.59$, $p < .001$). This was followed by a number of questions aimed to measure customer experience (consumption emotions, customer satisfaction, and recommendation intention). To measure the effect of the manipulations on relational models, a control group was added to the study. The control group consisted of customers who did not hear the telephone call and did not see the chat conversation,

but who only assessed the statements about relational models and answered questions about their own consumption emotions, customer satisfaction, and recommendation intention.

207 randomly selected customers of a health care company fully completed the questionnaire (125 men, 82 women). The mean age of the customers was 49.0 years ($SD = 12.80$). This corresponds to the mean age of the total customer base of the health care insurance company. The 207 customers were randomly assigned to one of the scenarios. 62 customers were presented with the simple question, of which 31 listened to the telephone call and 31 saw the chat conversation. 72 Customers were presented with the complex question and of these 48 listened to the telephone call and 24 saw the chat conversation. The number of participants that saw the chat conversation, is lower than the number of participants who heard the telephone call. This difference can be explained by the fact that a number of participants who were presented the chat conversation, experienced difficulties in watching the chat video in the questionnaire. These customers were removed from the data file. 73 Customers were part of the control group that was created to measure the effects on the relational models. This group did not see the chat conversation or listen to the telephone call.

At the start of the study we selected, in cooperation with the health insurance company, two scenarios: a scenario with a simple, administrative question and a more complex question. The first scenario described a situation where a customer contacts the insurer with a simple administrative question about reimbursement of the cost of glasses. The second scenario described a situation where a customer has a complex question about of speech therapy. This scenario is seen as more complex as the question concerns the reimbursement of a therapy that is no longer fully covered by the insurance policy. One of the two scenarios was presented to the customers. In every scenario, part of the customers listened to the recording of a telephone conversation between a customer and an employee of the health care insurer. Another part of the customers saw a chat conversation between the customer and an employee of the health care insurer. The scripts of the telephone call and the chat conversation were completely identical.

VI. Measures

To measure the emotional experience of the customer in the relationship with the supplier, we used a selection of emotions from the Consumption Emotion Set (Richins, 1997). Based on the results of a previous study (as described in author, 2017), we selected the 10 emotions that were most relevant in this context. These emotions are: frustrated, irritated, discontented, unfulfilled, fulfilled, contented, optimistic, encouraged, hopeful, and happy.

Customer satisfaction was measured as a single-item. Customers were asked to indicate on a 10-point scale their overall customer satisfaction with the energy company (1 = *very unsatisfied*; 10 = *very satisfied*).

To investigate the direct effect of the interventions described we asked the customers to indicate what the estimated effect of a particular intervention would be on his or her customer experience. We called this measure 'intervention evaluation'. After showing the manipulation (manipulation 1: simple versus complex question; manipulation 2: chat versus telephone) customers were asked to indicate on a 5-pointscale the impact that the manipulation had on their customer experience. The evaluation of the intervention was measured as a single item.

Recommendation intention was measured on a 10-point scale. Customers were asked to indicate to what extent they were willing to recommend the energy company to friends and acquaintances (1 = *not at all willing*; 10 = *very willing*).

To measure the CS and MP relational models, we used a list of statements based on Haslam and Fiske (1999). For each statement the respondent could indicate on a 7-point scale whether the statement was appropriate for the relationship with the energy company (0 = *not applicable at all*, 6 = *very applicable*). In a previous study (authors, 2019) the original statements were translated from English into Dutch (and back-translated from Dutch into English to check whether the translation was correct). After translating the statements into Dutch, they were slightly modified to make them more applicable to a business relationship. (five statements for CS, four statements for MP). For each of the two subscales a Cronbach's Alpha was performed to determine the consistency of the items in this study. This analysis led to an acceptable scale for CS ($\alpha = .82$). The scale for MP was less reliable than we would have liked but in our opinion it was just reliable enough ($\alpha = .62$).

VII. Results

Intervention evaluation. Through a two-way ANOVA with the two factors communication channels and complexity we looked at the main effect of the first manipulation (communication channel: chat versus telephone versus no call) on the evaluation of the intervention. The manipulation on the communication channel was used as the independent variable, the intervention evaluation as the dependent variable. The analysis shows that customers who saw the chat conversation have a more positive assessment of the impact on the customer experience than customers who heard the telephone call ($M_{\text{CHAT}} = 3.50$, $SD = .10$; $M_{\text{PHONE}} = 3.20$, $SD = .08$; $F(1, 130) = 5.31$, $p < .05$). As for the main effect of the second manipulation (task complexity: simple versus

complex), the analysis shows that the task complexity leads to a significant difference in intervention evaluation. Customers think that the handling of the simple question clearly has a more positive contribution to the customer experience than the handling of the complex question ($M_{\text{SIMPLE}} = 3.74$, $SD = .09$; $M_{\text{COMPLEX}} = 2.96$, $SD = .09$, $F(1, 130) = 37.31$, $p < .001$). Finally, we looked at the interaction between the two independent variables and their impact on the intervention evaluation. This analysis shows that there is no significant interaction effect between the two manipulations ($F < 1$). The two variables do not influence each other. It makes no difference to the intervention evaluation of the medium whether it is a simple or complex question.

Consumption emotions. Next a two-way ANOVA was conducted to determine the effect of the communication channel (chat conversation versus telephone call) and task complexity (simple versus complex) on consumption emotions. The analysis shows that the manipulation on the communication channel does not lead to significant differences in emotional experience. Customers who saw the chat conversation did not have a significantly different emotional experience than customers who heard the call or customers who were in the control group. The manipulation on the task complexity also did not show any significant differences in emotional experience. The analysis shows that there is a significant interaction between the two manipulations on the emotions of frustration and discontented (Table 1).

Insert Table 1 about here

Customers are clearly more frustrated and discontented if the complex question is handled via the telephone than if this question is handled by chat (Table 2).

Insert Table 2 about here

In the case of the other emotions there is no significant interaction between both independent variables.

Customer satisfaction. We subsequently performed a two-way ANOVA to determine the impact of the two manipulations (manipulation communication channel: chat conversation versus telephone call; manipulation task complexity: simple versus complex question) on customer satisfaction. The analysis shows that the communication channel showed no significant effect on customer satisfaction ($F(1, 130) = 2.01$, *ns*). The same applies to the task complexity ($F < 1$). The analysis shows that with respect to customer satisfaction there is no significant interaction between the two manipulations ($F < 1$).

Recommendation intention. A two-way ANOVA does show a significant effect of the communication channel (telephone versus chat) on recommendation intention. Customers who saw the chat conversation are significantly more prepared to recommend the organisation than customers who heard the call ($M_{\text{PHONE}} = 6.22$, $SD = .22$; $M_{\text{CHAT}} = 7.07$, $SD = .26$, $F(1, 130) = 6.60$, $p < .05$). The task complexity shows no significant effect on recommendation intention ($F < 1$), nor is there any significant interaction effect between the two independent variables ($F < 1$). Customers who saw the chat conversation are more likely to recommend the organisation, but this is independent of the task complexity that is dealt with.

Influence of manipulation on relational models. A two-way ANOVA shows that none of the manipulations had a significant effect on the MP relational model. MP relationship norms were no more present among customers who saw the manipulation than among customers who did not see any manipulation (the control group). This applies to both the manipulation of communication channel (telephone versus chat, $F(1, 202) = 2.66$, *ns*) and the manipulation of task complexity (simple versus complex, $F < 1$). Furthermore, the interaction effect was not significant ($F(1, 202) = 1.43$, *ns*). If we look at CS, we see the same results. Neither of the manipulations shows a significant effect on CS. This applies to the communication channel ($F(1, 202) = 2.66$, *ns*) and the task complexity ($F < 1$). The interaction between both variables is also not significant ($F < 1$).

The results of this first study show that using chat for simple questions leads to a more positive customer experience than the telephone. For both intervention evaluation and recommendation intention, chat leads to a significantly better experience than the telephone. However, we did not see this effect on consumption emotions and customer satisfaction. The effect on customer experience is found regardless of the relational model applied by customers. In the case of complex questions, the telephone call showed no effect on CS or MP relational model. Also, the customer experience of telephone contact is no better than chat contact, even if it is a complicated question. On the contrary, both with simple questions and with complex questions a chat conversation shows a more positive customer experience. Our analyses show that on the emotions of frustration and discontented, there is a significant interaction effect between the task complexity and the communication channel. If the complex question is handled by telephone this clearly leads to more frustration and discontentment. These results seem to contradict our hypotheses. We expected customers to have a better experience if they could handle a complex question through phone rather than chat. The opposite seems to be true.

Study 2: Limitation of the Freedom to Choose

The first study shows that customers using chat have a more positive experience than customers using the telephone. Add the fact that digital channels are usually less expensive, the challenge for organisations is to stimulate the use of digital channels by their customers or even direct them to digital channels. In the second study of this paper, we investigated the effect on customer experience and relational models if customers are required to use the internet channel for future communication. We investigated the impact on the customer experience if an organisation decides that customers can no longer call the service department to ask a question, but that these customers can only do this by mail or via the internet. A distinction is made between an absolute limitation of this freedom to choose a communication channel, a scenario in which customers have no available alternative, and a non-absolute limitation that, for a period of time, continues to provide customers with an alternative channel.

VIII. Method

The study consisted of a between-groups design with a single independent variable with two levels and a control group. The independent variable consisted of two different scenarios of restricting freedom of choice. One group of customers saw a scenario in an absolute variant, a second group of customers saw a scenario in a non-absolute variant, and a third group of customers was given a neutral scenario. The latter group formed the control group. In the neutral scenario there was no restriction of freedom. In the study we used a fictional organisation, in this case a pension fund. The participating customers were asked to empathise with the situation described, which was a situation that occurred in relations to their pension fund.

The study was conducted among customers of a social welfare institute, and they were approached by mail to ask if they were willing to participate. 191 randomly selected customers fully completed the questionnaire. Customers were randomly assigned to one of the three conditions. 70 Customers read the absolute scenario, 73 customers read the non-absolute scenario, and 48 customers saw the neutral scenario.

At the start of the study, we presented one of the three scenarios to the participating customers. The first scenario (absolute) describes a situation in which the customer has to conduct all future communication over the internet. No alternative communication channel is offered. In the second scenario (non-absolute) the customer still has an alternative communication channel available (telephone) for a period of three months. The control group was not confronted with a restriction in the freedom to choose a certain communication channel.

IX. Measures

In this study we used the same instruments as the instruments described in Study 1. In measuring relational models, we also measured AR because in this study the freedom of choice of the customer is actually limited. Previous research (Authors, 2019) showed that there is a significant relationship between freedom of choice and the presence of AR. The Cronbach's Alpha of the five CS statements used in this study was $\alpha = .64$, for the three AR statements $\alpha = .63$, and for the four MP statements, $\alpha = .42$. The reliability for the MP statements was too low. Removing one or more statements did not result in a higher reliability of MP statements. Because the statement, "The interaction between the organisation and me is strictly rational: we both calculate what our payoffs are, and act accordingly", best represented what the MP relational model stands for, we used this statement as a single item to measure the presence of MP.

X. Results

Intervention evaluation. First, a one-way ANOVA was performed to analyse the effect of the manipulation (absolute scenario, non-absolute scenario, neutral scenario) on the evaluation of the intervention. This analysis shows a significant difference between the valuation of the absolute and the neutral scenario, but also between the valuation of the non-absolute scenario and the neutral scenario ($F(2, 188) = 6.25, p < .01$). Customers think that both an absolute and a non-absolute restriction of freedom of choice will have a negative impact on the customer experience ($M_{\text{ABSOLUTE}} = 2.63, SD = .73; M_{\text{NON-ABSOLUTE}} = 2.47, SD = .77; M_{\text{CONTROL}} = 2.94, SD = .63$). There was no significant difference in the perceived impact between the non-absolute and the absolute scenario. In the eyes of the customers, the restriction of freedom of choice led to a less good customer experience, but it did not seem to matter whether this restriction is absolute or non-absolute.

Consumption emotions. Following this, we performed a one-way ANOVA to analyse the effect of the manipulation (absolute, non-absolute, neutral scenario) on consumption emotions (Table 3).

Insert Table 3 about here

Customers who saw the non-absolute scenario were clearly more frustrated and irritated than those who saw the absolute or the control scenario. In addition, with respect to the emotion fulfilled, there was a significant difference between the absolute and the non-absolute scenario.

Customers who saw the non-absolute scenario were significantly more frustrated ($M_{\text{ABSOLUTE}} = 2.67, SD = 1.03; M_{\text{NON-ABSOLUTE}} = 3.05, SD = .96; M_{\text{CONTROL}} = 2.65, SD = .96$) and irritated ($M_{\text{ABSOLUTE}} = 2.83, SD = 1.04; M_{\text{NON-ABSOLUTE}} = 3.05, SD = 1.03; M_{\text{CONTROL}} = 2.67, SD = 1.02$) than those who saw the absolute or the control scenario.

Customer satisfaction. A one-way ANOVA was then conducted to analyse the effect of the manipulation (limitation of freedom: absolute, non-absolute, or control) on customer satisfaction. This analysis shows that the differences between the three groups were not significant ($F < 1$).

Recommendation intention. A one-way ANOVA was subsequently conducted to analyse the effect of the manipulation (limitation of freedom: absolute, non-absolute, or control) on recommendation intention. This analysis shows a significant difference between customers who read the non-absolute scenario and customers who read the control scenario. Customers whose freedom to choose was limited in a non-absolute way, were clearly more willing to recommend the organisation than customers whose freedom to choose was not limited ($M_{\text{ABSOLUTE}} = 4.43, SD = 1.77; M_{\text{NON-ABSOLUTE}} = 4.67, SD = 1.92; M_{\text{CONTROL}} = 3.79, SD = 2.08; F(2, 188) = 3.15, p < .05$). No significant difference was found between the non-absolute scenario and the absolute scenario.

Influence of manipulation on relational models. If we conduct a one-way ANOVA and compare the relational models of the customers who read a scenario in which their freedom of choice was limited (absolute or non-absolute), with the customers in the control condition, we can see that there are no significant differences between the three groups regarding the presence of CS, MP or AR (all $F_s < 1$).

The results of this second study show that a restriction in freedom of choice has a negative impact on intervention evaluation, consumption emotions, and recommendation intention. However, we do not see a weakening of CS or strengthening of AR. With regard to the absolute or non-absolute restriction our research shows that the impact on customer experience is stronger in a non-absolute than in an absolute scenario. With regard to consumption emotions, we see that a non-absolute restriction of freedom leads to more frustration and irritation than an absolute limitation.

XI. Discussion

This research paper examined the impact of the use of digital channels on customer experience and customer relationships. The two studies described in this paper were performed among customers in a business-to-consumer environment. However, due to the universal character of relationship models the results will also be applicable to customers in a business-to-business environment. In this paper, the effects of digitisation are examined with respect to two aspects: the use of virtual chat agents and the practice of channel direction. The use of virtual agents (in stead of real humans) appears to have a positive impact on customer experience (both for simple and complex questions). The finding that chat is evaluated more positive for both simple and complex questions, seems to contradict the Media Richness Theory which suggests that for complex questions it is better to use the telephone or a face-to-face conversation. The most likely explanation for this is that the convenience aspect has played a dominant role in the assessment of the channel used. Chat is usually considered to be a more accessible and easier medium to use, and that ease of use is weighted more heavily than richness in the assessment of the medium.

The first study also showed that people who heard the complex question over the telephone became more frustrated and discontented than those who dealt with the same question via chat. The complex question was associated with a negative message for the customer, and it could be that the impact of this message had a stronger effect on the emotional experience in a telephone call than it did in a chat conversation. In a telephone conversation the emotion of the customer about the negative message can be felt more than in the chat conversation. Another explanation could be found in the (unconscious) associations that people have with the communication channel of the telephone. In general, people do not have positive associations with the contact centres of large service providers.

The second study shows that channel direction has a negative impact on the customer experience. This applies to both an absolute as well as a non-absolute limitation of freedom. However, the effect is less strong in the case of an absolute limitation of freedom of choice, which could indicate some form of rationalisation (Aronson, 1989; Elster, 1983; Kay, Jimenez, & Jost, 2002). A non-absolute restriction of the freedom to choose a communication channel leads to more frustration and irritation. This could be an indication of the occurrence of reactance in the case of a non-absolute limitation of freedom of choice

(Brehm, 1966/1989; Wicklund, 1974).

The research results show that neither the used communication-medium (Study 1) nor a restriction of freedom of choice (Study 2) have a significant influence on the relational models. Apparently, the interventions described in these two studies fit within the relationship norms customers have for the organisation, and there is no reason to modify these norms. The interventions are not seen as taboo trade-offs (Fiske & Tetlock, 1997/2015) and apparently do not violate once activated relationship norms. Once activated, the relational models are probably a fairly constant factor in the mind of the customer. It could well be that if a customer is repeatedly confronted with this type of interventions, he or she or will change the image of the relationship. To determine whether this is the case further, longitudinal research is required.

XII. Limitations and directions for future research

One of the possible limitations was the average age of the participants. In the first experiment the average age was 49 years. In the second experiment we had no background information about the average age, but it is to be expected that participants in this experiment were also relatively old customers, given the fact that these participants were customer of the social welfare organisation. Younger and older generations will probably react differently to the use of digital channels. Given the relatively high average age of respondents, the research results will not be representative for the total population. However, they are representative for customers of service providers like insurance companies, energy providers, pension funds and social welfare institutes. Usually, people only enter the customer database of this kind of organisations at their twenties, when they start working and living on their own.

A second limitation concerns the manipulation in the first experiment. The manipulation in the first experiment may bring in confounding effects. Besides complexity, we may have manipulated customers' familiarity or knowledge about the two contexts. It could be that consumers are more familiar with a scenario of a simple, administrative question about the coverage of glasses than glasses more than with a more complex question about speech therapy. This could be an explanation for the different results in the experiment. Looking back, it probably would have been better to use the same context and just change the level of complexity of the problem in the experimental design.

A third limitation also concerns the first experiment. Having customers read a chat or listen to a telephone call is not the same as how they would react if they were to chat or talk themselves. At most, it gives an indication of how they would react. Practically it was not possible to organise an experiment where all participating customers could chat or make a phone call themselves.

XIII. Theoretical Contribution

The most important contribution of this paper to the scientific literature is that it provides a deeper insight into the effects some aspects of digitisation on customer experience and customer relationships. So far, no research has been done into the effects of digitisation on the relationship between organisations and their customers. During the last decades, we have gained more insights into how the brain works and how important subconscious processes are in our daily behavior (e.g., Kahneman, 2011). There are, however, hardly any validated measures that provide insights into the subconscious mind. Relational models provide an understanding of the way in which customers perceive and evaluate organizational interventions in customer contact, consciously and subconsciously. Previous research (authors, 2019) showed that relational models have a significant influence on customer experience. In this research paper we have investigated the role and impact of relational models in the digitisation of customer contact. The research shows that the use of digital channels has a positive effect on customer experience but doesn't affect relationship norms, at least as long as the digitisation stays within the relationship norms and as long as there is no mention of a taboo trade off. Restricting the freedom of choice in using communication channels does have a negative impact on customer experience, but also does not influence relational models.

XIV. Practical implications

In recent years organisations are increasingly using digital channels to replace traditional channels. Most organisations are doing this without having any clue of what the implications are for the customer experience or the customer relationship. Previous research (author, 2019) showed that many customers think that increasing digitisation limits the possibilities of personal face-to-face or voice-to-voice contact. Our research shows that the use of digital channels like chat, unlike what people often think, do not necessarily have to lead to a deterioration of customer experience. In certain cases, the use of digital channels will even lead to an improvement of customer experience. This will certainly be the case if customers think that things are getting easier for them. And this will be the case as long as customers have the feeling that the digital channels extend their freedom of choice in using different communication channels. If a customer is forced to

use the digital channel, however, this will lead to a negative customer experience. If an organisation wants to limit the freedom of choice in using the more expensive traditional channels, it is best to limit this freedom of choice in an absolute way. Limiting freedom of choice in a non-absolute way will cause irritation and frustration as customers have the feeling they are limited in the way they would like to communicate.

The investigated aspects of digitisation did not have an effect on the relational models. New communication channels, such as chat or email, apparently do not automatically change the norms that customers adopt in their relationship with an organisation. The increasing use of new digital channels, like the Internet and chat, is welcomed as an extra opportunity to communicate with organisations. Channel direction also does not immediately encourage customers to change their relationship norms. Channel direction is not appreciated by customers, but there are no indications that channel direction is perceived as a taboo trade-off (Fiske & Tetlock, 1997). This may lead to a preliminary conclusion that digitisation will not change the relationship and the norms and values that both organisations and customers use in their relationship.

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Table 1
F- and P-Value for Influence of Manipulations on Consumption Emotions

	Communication channel		Task complexity		Interaction Medium*Question	
	<i>F</i> (1, 130) =	<i>p</i>	<i>F</i> (1, 130) =	<i>p</i>	<i>F</i> (1, 130) =	<i>p</i>
Frustrated	.76	.38	.17	.68	3.91	.05
Contented	3.00	.09	.05	.83	.40	.42
Optimistic	.23	.63	.09	.76	.84	.36
Encouraged	.00	.99	.44	.51	1.10	.30
Happy	1.29	.26	.11	.74	1.78	.18
Irritated	.32	.57	.03	.86	1.15	.29
Fulfilled	1.38	.24	.09	.76	.25	.62
Hopeful	.08	.78	.38	.54	.23	.63
Unfulfilled	.27	.60	1.62	.21	1.22	.27
Discontented	2.64	.11	1.10	.30	3.99	.05

Table 2
Frustration and discontented as function of communication channel and task complexity (means and sd's)

	Frustration				Discontented			
	Phone		Chat		Phone		Chat	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Simple Question	2.39	1.15	2.61	1.23	2.42	.96	2.48	.99
Complex Question	2.71 ^a	1.18	2.31 ^a	.95	2.58 ^a	.96	1.96 ^a	.96

Note: cells with the same superscript differ significantly in the row ($p < .05$)

Table 3.

Means and standard deviations of the effect of limitation of freedom of choice on consumption emotions

	Absolute scenario		Non-absolute scenario		Neutral scenario		<i>F</i> (2,188)=	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Frustrated	2.67 ¹	1.03	3.05 ¹²	.96	2.65 ²	.96	3.62	.03
Contented	2.86	.73	2.74	.88	2.92	.79	.77	.46
Optimistic	2.46	.86	2.45	.80	2.52	.77	.12	.89
Encouraged	2.39	.77	2.45	.75	2.60	.84	1.14	.32
Happy	2.27	.85	2.19	.83	2.46	.87	1.45	.24
Irritated	2.83	1.04	3.05 ¹	1.03	2.67 ¹	1.02	2.18	.02
Fulfilled	2.61 ¹	.79	2.99 ¹	.75	2.90	.75	4.48	.01
Hopeful	2.36	.89	2.59	.91	2.67	.91	2.00	.14
Unfulfilled	2.89	.88	2.81	.84	2.79	.77	.23	.80
Discontented	2.87	.98	3.11	.94	2.77	.93	2.11	.12

Note: means with identical superscripts in the row differ significantly.