How can Artificial Intelligence use big data to form a better customer experience?

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ABSTRACT,
Artificial intelligence has become a major player in the online advertisement industry. AI (artificial intelligence) facilitates data analysis and personalized customer experience which would not be available, without the efficiency and effectiveness of machine learning. However, a perceived loss of human touch has been noticed by some previous authors and further analysis has shown that data privacy is a major concern for customers. Clients are aware that companies use their data for personalized advertisement. However, they do not want to share their data with third parties and do not trust organizations with their information. Thus, Blended AI has been introduced as a solution for all problems. Blended AI is a combination of machine intelligence and human intelligence. An agent is used in the finalization stage for the last analysis of the data for customers. Through that organizations regain the human touch, open communication and data would be gathered with permission. Thus, data privacy could be re-established. Customer relationship management is of high importance for companies, since the customer brings value to the organization, if financially or emotionally. Without the maintenance of a strong relationship from and to the customer, many enterprises would go out of business. Especially in the new era of information processing it is of high importance to listen to the customer as well as fulfil their needs and want.

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Artificial Intelligence, Customer experience, Big data, Human Touch, Blended AI

1. INTRODUCTION

Nowadays marketing and especially digital marketing has become one of the most important factors for the purchasing of products. Customers have many choices on where to buy a certain product and companies need to attract the most customers by advertisement in order to have a strong financial performance. Since, the introduction of the internet for most people in this world, online and offline purchases are a common day-to-day practice. Thus, a comparison is made between online and offline products and the most worthy product will be bought to the best possible price available, whether that is in a store or an online shop (Schmitt, 1999). Therefore, customer experience is one of the most important factors for the development of a trustworthy and strong relationship with the customer and consumer (Jain, Aagja, & Bagdare, 2017). Artificial intelligence is combining big data gathered from digital marketing, with analytical tools, in order to create the most extraordinary customer experience, for competitive advantage. Until now, data collection and research by other authors have shown that the implications of artificial intelligence / big data upon the customer experience can be positive and negative. The main outcome has been that the technological applications have helped the companies and organizations to gain more insights of their consumers and have the ability to prepare and suggest the most fitting product for them (Deb, Deb, & Jain, 2018). Not many people still consider the emotional / human intelligence as important anymore, since we are not as efficient as machines (Deb et al., 2018).

However, organizations are being considered as entities which have a disorientated view of human beings as data, for the simple fact of customized online advertisement experiences. The reviewed literature has not picked upon this topic yet. Many authors argue for the loss of human touch, but only one article gave a recommendation to organizations in order to have an improved process in the upcoming years and maybe decades. Human touch can be defined as: "[…]the human touch deals with people in a kind friendly way and is able to understand their feelings and problems" (Longman Dictionary, 2018, May 18). Therefore, the perceived loss of human touch focuses on the loss of an organizational practice to see the customer as a human being rather than data bundled into profiles in order to create automated advertisement. Artificial intelligence is the tool that is learning on its own, it is communication and it is creating networks within and around our data, which human intelligence would not understand within the same time span (Pannu, 2015). "AI is dramatically reshaping and redefining not only the market and what companies can or cannot do with customer experience, but who we are as individuals and groups." (Conick, 2017). Organizational cultures have been built up around data, which is combined into profiles by the artificial intelligence. With this data, AI is creating suggested products for customers and consumer, which make it difficult to concentrate on the main purpose of the customers online shopping trip.

Paul Segre proposed the recommendation for organization, which he called the "Blended AI" (Magazine, 2018). He is arguing that both, emotional and human intelligence should be combined with artificial intelligence in order to provide the most diverse experience for the customer. This is supported by Bordenave (2018), who also strongly believes in the combination of both intelligences, for a more advanced customer relationship management. The focus here is to analyse the data with the machine intelligence, for a quick and efficient analysis, but finish off with the use of human intelligence for the product recommendations. Andrew Frank mentioned that: "Computers do not understand really basic things because they lack world knowledge and common sense […]" (Korzeniowski, 2018).

We are overwhelmed with advertisement. A study from a marketing firm in 2007 mentioned that we could see up to 5000 ads per day (Tunikova, 2018). Applications such as the Internet of Things is combining data in order to generate the best possible experience for the customer. Nevertheless, many authors argue against the usage of artificial data and pleaded that human intelligence needs to be established again (Korzeniowski, 2018). Of course, Artificial intelligence does not only negative attributes, it can create a stronger customer relationship management (Deb et al., 2018). Consumers are overwhelmed with advertisement and with data shown to them. Artificial intelligence and big data will gain more attention in the upcoming years and therefore the recommendations at the end of this paper will help organizations to gain more focus on the human being. It should be clear that not traditional methods will be used, the focus should solely lay within the future.

Considering the importance of data in today's society, we need to be conscious about our data management and especially our data privacy. As mentioned before, our data is widely spread across the globe and across organizations and third parties. Consumers have privacy concerns since the beginning of the collection of data. Users consider unauthorized secondary use, improper access, information use and information sensitivity (Malhotra, Kim, & Agarwal, 2004a, 2004b; Martin & Murphy, 2016; Smith, Milberg, & Burke, 1996).

Since customer experience is a multidimensional construct, three levels of quality will be added. Those levels will be: systems quality, information quality and the service qaulity (Trivedi, 2019). Due to the fact, that big data has an enormous implication upon artificial intelligence, and vice versa, the use of big data will be taken into consideration. Since, the loss of human touch is spread across all sections, all recommendations made and implications occurring will be drawn back to the main keywords. The key questions answered will be:

1. **Do customers perceive that a loss of human touch occurred?**
2. **How does data privacy affect the relationship of online advertisement and customer experience?**
3. **Does the use of artificial intelligence help the online advertisement to develop a better customized customer experience?**

This paper will focus on the analysis of the "Blended AI" in combination with big data in order to create good digital advertisement and to improve the customer experience, with the focus on the perception of the loss of the human touch in the marketing industry. Furthermore, this paper will focus and look at how artificial intelligence is used in order to create a positive impact on the customer experience. The research gap in my Literature review is the missing research on human touch in the current state of Marketing. Consequently, I will emphasis the relevance of Artificial Intelligence with a combination of human intelligence in order to concentrate on the missing human touch. Furthermore, this research will also consider the relevance of data privacy with regards to big data and the human touch. Moreover, this will be done with respect to the customer experience and customer relationship management.

This research will help companies improve their Artificial Intelligence applications in order to create a better customer experience and deliver a better customer relationship management. Furthermore, companies will be able to adapt the human intelligence and create a sufficient process of big data analysis with better product recommendations. The recommendations given at the end of this paper can be used to imply all the benefits mentioned above.

2. LITERATURE REVIEW

This literature review is focusing on past research and concentrates on what has been done already. The purpose of this literature review is to analyse what has been done in order to create a new research focus, which will contribute to the new theory and to organizational futures, since recommendations will be made explicit.

All hypothesis that will be mentioned in this upcoming section will be related to online advertisement. To elaborate, online advertisement did measure the satisfaction of the respondents with the current customer journey and experience in online marketing.

2.1 Artificial intelligence and Big data

Artificial intelligence can be traced back to 1956 where it all started with John McCarthy. McCarthy started to program Artificial intelligence and developed its own programming language LISP in order to fasten the speed of the progress. The definition of artificial intelligence has caused a lot of confusion and not one 'right' definition exists yet. Experts discuss which definition could be the right one, for the current era of the world wide web. In order to name one definition which fits this research topic: "The concept that machines can be improved to assume some capabilities normally thought to be human intelligence such as learning, adapting, self-correction etc." (Kok, Boers, Kosters, Leiden, & Poel). Alan Tuning revolutionized the machine learning and introduced the first Artificial intelligence layout with his Tuning test in 1950. Paul McCarthy took the innovation a step further, but the application did not receive any attention until the 21st century, when machine learning and 'Big Data' arrived. This occurred even though the Chess world champion was beaten by artificial intelligence already in the 1970s. With the emergence of 'Big Data', organizations saw the possibilities to invest in the software to create new techniques and possibilities for customer journey which the marketers can use. The appearance of 'Big data' brought more and more attention to the technology and in the 21st century enterprises implemented the use of the technology for further development of their data management (Deb et al., 2018). Paul Korzeniowski argues in his article, that the machine learning has finally reached a stage in which it is useful for data analysis. He states that the data does nothing by itself, so the data which has been collected needs to be analysed appropriately in order for a strong product recommendation tool for the user. Furthermore, he focuses on challenges that AI and data analysis are facing currently. Such a challenge might be that the machine itself is choosing the wrong project which is too labour intensive and will not recover the initial investment. He also argues for the loss of human touch within marketing (Korzeniowski, 2018). It is stated in the article that: "Computers do not understand really basic things because they lack world knowledge and common sense […]". (Andrew Frank, Analyst at Gartner)

With the raising of 'Big data' enterprises and developers noticed the importance of the artificial intelligence and wanted to re-innovate the market. Big data can be defined as: "High volume, velocity and variety information assets that demand cost-effective, innovative forms of information processing for enhanced" (Beyer and Laney, 2012), whereas Intel simply states that Big data is "Complex, unstructured, or large amounts of data." (Intel, 2012)

Paul Segre developed a concept called the "Blended AI" with his company Genesys. This concept describes the combination of artificial intelligence and human intelligence. All steps taken will work towards a better customer experience. The data of customers will be analysed and combined into certain categories to fit the customer (Magazine, 2018). Some authors argue for the recovery of human intelligence in the marketing industry. They argue for a use of human touch in their articles focusing on the before mentioned 'Blended AI' (Bordevane, 2018; Magazine, 2018). Artificial intelligence and Big data are implemented in the field of digital marketing for the enhancement of customer journeys and for a better customer relationship management. Some authors argue for the positive effect of AI and big data on the customer experience, but some argue against the use of AI and big data to enhance the customer experience (Trivedi, 2019).

Consumers gained more power with the excessive amount of information available. Thus, customers and consumers have more choices and understand their products better. Consequently, they have more information power, which customer from the 'old' advertisement techniques did not have (Chen, Zhang, Jin, & Yang, 2018). This could enhance the pressure that lies upon organizations to gain back the human touch in order to give personalized recommendations. This refers to the use of a "Blended AI", since the customer has the world wide web available to them and if not, the right product is selected, the user will simply check other online shops. With the use of Blended AI, the perceived loss of human touch will decrease more and more focused advertisement can be made, so that customer will purchase the specific products or services.

AI and 'Big data' are reaching a level of attention, in which major organizations are using the technology to not just create and analyse a stream of data, but to develop consumer specific ads in order to generate more profit and enhance the customer experience with the development of a customer relationship management. (Deb et al., 2018)

With respect to the previously mentioned literature, the following hypothesis will be tested:

H_1: Artificial intelligence / Big Data will have a negative effect on online advertisement, and thus on the customer experience.

2.2 Customer experience

In the 21st century, traditional advertisement is replaced by online shopping. More information is available for the customer, and more customer specific advertisement can be produced. However, a lot of customers and consumers feel overwhelmed with the masses of information (Chen et al., 2018). As mentioned before, people who use the internet see approximately 5000 ads per day (Tunikova, 2018). Hence, organizations have noticed the importance of the customer experience and especially the customer relationship management. Many authors argue with different opinions on what definition is most suitable for the 21st century customer experience (Jain et al., 2017). One definition that suits the traditional and new customer experience is from Carbone and Haeckel (1994): "aggregate and cumulative customer perception created during learning about, acquiring, using, maintaining and disposing of a product or service".

Tudoran (2019) focused on the bad contact with a website that a customer could experience. He argued that, because of such bad experiences adblockers came more and more into the uprising that they had in the past years. He found out that industries perceive a creation of a 'quid-pro-quo' with the customer. However, Tudoran does not argue for the organizations right, rather he mentions that the focus has been on effectiveness and customer attraction and not on the customer relationship management. Thus, customer loyalty towards the company has become one of the most important factors for organizations in order to set financial freedom. Furthermore, this article could provide a controversy to the argumentation that the industry has lost its human touch, since bad advertisement does make us more attracted to the use of adblockers.

Grønholdt, Martensen, Jørgensen, and Jensen (2015) argue that financial performance has a high dependence on customer experience management. For a continous success of the organization, sustainable experiences need to be created (Pine and Gilmore, 1998) in combination with a unique experience in order to have differentiation and competitive advantage (Grønholdt, Martensen, Jørgensen, & Jensen, 2015). Companies need a positive financial performance that one may stay alive. This strongly shifts the focus of the customer to cash flow. If the cash flow is not as expected, companies may do whatever it takes to stay alive, even losing the human touch.

Even though a positive experience is affiliated with a positive outcome, this might not be the case. In this scenario a positive customer journey is an experience in which the customer is happily enjoying an ad and the positive outcome can be explained by a good purchase of the seen ad. Brajnikand and Gabrielli (2010) argue that a positive feedback loop increases negative effects. Novak, Hoffman and Duhachek (2003) developed a model which is concerned with the goal directed and goal indirected browsing. Goal directed browsing would focus on a purpose of the use of internet, while the goal indirected browsing is focusing solely on the pleasure use of the internet, with a possible purchase of a product. Brajnikand and Gabrielli (2010) argue that one of the most importnant factors for a positive attention seeking of a website is combined with the usability and effectiveness of a website. If the goal directed browing is disripted by advertisement, a so called tunnel vision builds up, in order to prevent the customer to get distracted from the advertisement and complete the task. Thus a negative attitude towards the website is established (Brajnik & Gabrielli, 2010). If those factors are negatively influencing the use of the website, then the customer may not return (Tudoran, 2019). This referes to the technology acceptance model of Segars and Grove (1993), with their 3 factors in order to have a positive perception to new technologies. Those factors are the usefullness, the effectiveness and the ease-of-use. Thus, if customers think that the AI is usefull, effective and easy to use, they will accept the innovation.

Artificial intelligence is of the utmost importance in the 21st century for digital marketing and consequently for the customer experience (Deb et al., 2018). Customers in todays society expect AI-based technology to bring more convenience to their shopping and internet experience (Trivedi, 2019). Schmitt (1999) has argued that the traditional marketing is changing and builds upon the use of an customized customer experience. Hence, customer experience is becoming increasingly the most important dimension for digital marketing (Jain, Aagja, and Bagdare 2017). In order to have a positive customer experience, three attributes need to be available which are the systems quality, information quality and the service qaulity (Trivedi, 2019). Deb et al. (2018) argue that AI has reached a status in which it can take over the tasks of a human and consequently diminish the human being in the process of advertisement. In the next section, this statement will be analysed with other literature from other authors.

Consumer expect companies to more detailed information on how their data is analysed and processed, but also reduce the asymmetry of information that commonly exists between the organization and the customer (Chen et al., 2018). Consumers already have more information about products, more products to choose from and therefore can use various mental activities in order to make the purchase (Chen et al., 2018). This is all referring to the new era of Big data and its analysis of that data in order to comprhensively make customer specific suggestions and recommendations in order to push the financial performance (Grønholdt et al., 2015). Chen et al. (2018) found five dimension which a customer goes through in his cognitive process: demand indentification, information collection, selection judgement, purchase decision and post-purchase evaluation phase.

In order to have positive customer experience, Jain et al. (2017) have argued that a unique, pleasureable and memorable experience needs to be created. A customer is not focusing on one single element, even though one single element could hinder a customer to come back to the website, rather customer evaluate the total experience in comparison to other websites (Barbone und Haeckel 1994). Customer experiences and customer relationship management builds up the customer's trust towards the organization and establishes customer loyalty. In order to have the customer loyalty, management of the customer relationship is one of the most important, if not the most important factor (Crosby and Johnson 2007).

Kumar, Kumar and Asadi (2018) have researched on the topic of customer perception towards online advertisements and found that most online users affiliate the online advertisement as positive. They made suggestions and recommendation which could be used by enterprises in order to further improve online marketing.

2.3 Human touch

The core concept of this study is whether digital marketing or online advertisement is losing human touch and creating data profiles for customers solely with gathered, analysed and communicated data. We already know that big data is shaping the online advertisement and changed the whole industry, in combination with artificial intelligence. Nevertheless, it has lost the human intelligence in the process of product recommendations for customer, with their different experiences, purchases and personalities. Just because one customer bought a product that he liked, and the data gather is comparable with the data another person, does not mean that the other person is going to buy the recommended product.

As mentioned before, the CRM Magazine (2018) describes a solution towards this problem with a so called "Blended AI". The combination of artificial intelligence and human intelligence could be of great importance in the upcoming decade. The artificial intelligence is analysing the data and sending it to an agent for further analysis and help for the customer. The strict analysis of data and automated creation of advertisement has worked in the previous years and the technology has improved greatly, but a shift in society to a more data aware community is happening and visible (Malhotra et al., 2004b). People become more aware of data processing and what it all includes. The agent is therefore processing data, with the awareness of human feelings, in order to generate more advanced customer journeys and increase the development of relationship management.

Within the article of Korzeniowski (2018) it was mentioned that: "Computers do not understand really basic things because they lack world knowledge and common sense […]". (Andrew Frank, Analyst at Gartner). He is positively arguing for the innovation and thus, expresses his support towards the use of data for the customer experience. He also mentions that in order to have a good experience, the data management needs to be correct, otherwise there is no possibility of a positive experience. The artificial intelligence is finally ready to take over human tasks and create fast outcomes (Deb et al., 2018; Korzeniowski, 2018). Customer experiences are getting more fragmented, while analytical tools are becoming more complex, so that artificial intelligence is more cost efficient and especially quicker than a human being (Bordevane, 2018).

With respect to the previously mentioned literature, the following hypothesis will be tested:

H_2: The Perception of loss of human touch will have a negative effect on online advertisement, and thus on the customer experience.

2.4 Data privacy

Since the rising of the internet and especially the e-commerce, information privacy has become a huge concern for individuals. It has become one of the most important ethical issues in the information age (Malhotra et al., 2004a; Smith et al., 1996). Information privacy can be defined as "the ability of the individual to personally control information about one's self" (Stone et al., 1983). Smith et al. (1996) found 5 dimensions in which consumers are concerned with their information. Those five factors are: collection of personal information; internal unauthorized secondary use of personal information; external unauthorized secondary use of personal information; errors in personal information; and improper access to personal information (Smith et al., 1996). Those 5 factors name attributes which can be used in further analysis.

Most consumer are concerned with the use of the digital form of their data. It can be collected, copied, transmitted and integrated, which allows online marketers to create thorough profiles about each individual (Malhotra et al., 2004b). Chen et al. (2018) argues that the concern for information is increasing, but at the same time living standards are. Consumer expect more, but also want advanced information, personalized ads but do not want to share personalized information in order for that to happen.

Martin and Murphy (2016) focused on theoretical perspectives and empirical findings in data and information privacy in order to group them together for further analysis. The authors defined, explained and researched those perspectives for conclusions which are negative towards the consumers, enterprises and ethical approaches. They proposed six strategies. The Reactance theory, which key concepts are consumers freedom of choice for marketing procedures and especially focused on the buying behaviour, has brought new insight into the freedom of choice for customers. Thus, it has raised the awareness of customers own buying behaviour.

With respect to the previously mentioned literature, the following hypothesis will be tested:

H_3: Data privacy will have a negative effect on online advertisement, and thus on the customer experience.

2.5 Online Advertisement

The connection between all named sections and sub sections is combined into one term: Online advertisement. Since the first online ad banner appeared in 1994, it has increasingly become more important to have a good online appearance, in accordance to advertisement (Single, 2010). Artificial intelligence has come into play in the 21st century and has developed customer experience and the connected advertisement highly (Deb et al., 2018). Even though artificial intelligence has been around for more than just the 21st century, big data has developed the application/software to a new level for marketers. More data can be analysed and combined for personalized customer suggestions. Thus, the importance of the customer experience has become and still develops itself to one of the most important factors for online marketers.

Online advertisement also brings risks to consumer. Since a lot of data is gathered for the use of personalized advertisement, data privacy becomes one of the most important issues in the 21st century (Malhotra et al., 2004b; OECD, 2019; Smith et al., 1996). Thus, customers need to be aware of the false advertisement as well as the protection of their data.

From many authors the loss of human touch has been described as apparent and visible. Online advertisement is still targeting real humans and not combined and gathered information from previous purchases (Korzeniowski, 2018; Magazine, 2018). In the case of data privacy, Blended AI could be the solution again. It would save the data from the customer in a protected environment but would also use an agent to analyse the data for further ad predictions.

Thus, the influence of data privacy, artificial intelligence/big data and the perception of the loss of human touch all influence online advertisement which in the end influences the customer experience.

Consequently, with respect to the previously mentioned literature, the following hypothesis will be tested:

H_4: Online Advertisement, affected by the independent variables, will have a negative effect on customer experience.

2.6 Conceptual framework

After the analysis of the theory from previous papers and researches, Figure 1 depicts the conceptual framework of this paper. It is completed by the use of Marketing in today's online world and the effects of data privacy, artificial intelligence / big data and the loss of human touch in / on online advertisement. This will then be used to create recommendations upon the use of online advertisement to create a better customer experience and better business performance.

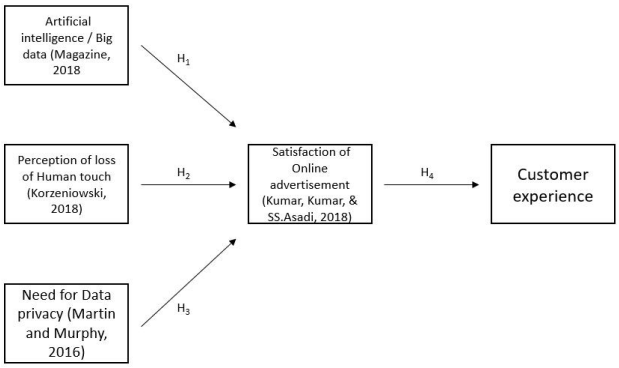

Figure 1. Conceptual framework of the effect of online advertisement on customer experience

Nowadays, the world of online advertisement in based on the use of data profiles (big data), which is analysed by Artificial intelligence. However, a perception of a loss of human touch is visible within the literature (Korzeniowski, 2018; Magazine, 2018).

Furthermore, Marketing managers should be able to combine all different aspects in order to have the best possible advertisement and be able to reach the customer directly. In today's world, this is done by the artificial intelligence, which is currently creating, analysing and communicating data from customers in order to create profiles which are then used for product recommendations (Deb et al., 2018).

Data privacy has become one of the most emerging topics in the business world, since customers and consumer get more aware of what companies could or will do with their private information (Chen et al., 2018; Smith et al., 1996). This will be analysed and used for recommendation in order for organizations to be more aware of how important that topic is to customers.

All factors mentioned and seen in figure 1 will be used to analyse a more approachable way for organization in order to create the best customer experience.

Within the literature review of this paper, four hypotheses have been proposed for further analysis with the results. The chosen hypotheses are visible in the illustration of the conceptual framework.

3. METHODOLOGY

3.1 General design

In order to investigate what the current perception of customer experience in the field of online advertisement is, self-completed survey will be conducted. The survey will bring quantitative as well as qualitative data. The survey will be conducted online with the help of Qualtrics. Participants will be adults with a relative high experience in the internet and with online advertisement.

The survey will be organised in a structure that artificial intelligence will be included at the end of the survey, in order to firstly have an unbiased opinion on online advertisement and secondly gather some data on artificial intelligence. Henceforth, the survey is changed towards a part of Artificial intelligence at the end of the survey. Before the part of AI comes into play, a definition as well as explanation is given, in order to help participants, answer the questions with their best knowledge. Thus, the focus will not lie within AI, it will rather gather data about the perception of digital marketing in 2019, in order to present recommendations. Furthermore, the survey will end with age and gender for some categorization. This is done at the end of the survey in order to keep the concentration on the main points. The survey will give the participants the chance to quit at any point in time, due to distress or unpleasant feelings. At the end, it will summarize all given answers. The answer scale will vary within the answers, since many questions have a different need of answers.

The aim of this survey is to gather data about online advertisement and the general perception of the public. In order to have enough data, the most people will be asked for their opinion. The goal of this survey is to have data for 75 people. The respondents will be friends and family, as well as unknown people from social media

Since the respondent's number of this survey is below 100, it will be used as pilot testing for future research. If mistakes were made, they will be mentioned in order to provide future researchers with the utmost recommendations for a good study.

3.2 Background

Survey as a method of data collection is the best fit. This is because interviews would not bring enough information in order to gather data about different viewpoints of people. Furthermore, it also gathers qualitative data for further analysis and recommendations. Moreover, questionnaire is chosen, because so geographical limitation is occurring. Thus, data might come from various countries. Survey also contain a lower number of errors, due to a standardization. Statistical software (SPSS) is used for an analysis of the data for validity, reliability and statistical significance.

3.3 Operationalization

For this study, three independent variables (IV) are given. Those would be. Artificial Intelligence, Perception of loss of Human Touch and Data Privacy. These 3 variables, as shown in fig. 1, are affecting the mediator variable (MV) and dependent variable (DV) which are in order online advertisement and customer experience. Definitions will be given in the table below, for the independent as well as mediator and dependent variables.

Variable	Definition	Measurements
Artificial intelligence (IV)	"The concept that machines can be improved to assume some capabilities normally thought to be human intelligence such as learning , adapting, self-correction etc." (Kok et al.)	Do customer know what artificial intelligence is and would they be willing to test Blended AI?
Perception of loss of human touch (IV)	"[…]the human touch deals with people in a kind friendly way and is able to understand their feelings and problems" (Longman Dictionary, 2018, May 18)	Did the marketing industry lose the human touch?
Need for Data privacy (IV)	"[…] the ability of the individual to personally control information about one's self" (Stone et al., 1983)	Do we need more data privacy?
Satisfaction of Online advertisement (MV)	"Use of internet as an advertising medium where promotional messages appear on a computer screen. Since the communication software (browser) reveals sufficient information about the site's visitors, online advertising can be custom-tailored to match user preferences." (BusinessDictionary, 2019)	How satisfied are the customers / respondents with the online advertisement nowadays?
Customer experience (DV)	"[…] aggregate and cumulative customer perception created during learning about, acquiring, using, maintaining and disposing of a product or service" (Carbone and Haeckel, 1994)	How can customer experience be further improved?

Table 1. Operationalization with definition of independent and dependent variables

3.4 Validity

Validity is of huge importance in a study with independent, mediator and dependent variables. Thus, this section will explain the internal and external validity of the acquired measurements.

The internal validity is focusing on the casual relationship in this study of the independent and dependent variable. The focus of this research is acquired through past papers and researches and is therefore creating the causal relationship of the three independent variables, the mediator and dependent variables. In order to further provide an elaboration, the connection is supported by the papers which is creating the relationship, within figure 1. Each paper has created the relationship and this paper will connect those relationship for further analysis.

The external validity refers to the connection of this papers results to other people and other settings and what happen over time (Saul McLeod, 2013b). This study will provide

recommendation for organizations in the future and therefore will provide people with endorsements over time. The recommendations may only be used for organizations which are focusing on artificial intelligence in the online advertisement industry.

3.5 Reliability

Reliability is the "[…] consistency of a research study or a mearing test." (Saul McLeod, 2013a).

Therefore, this study will be tested upon the reliability by using a correlation coefficient. Furthermore, the reliability with be strengthened by a relatively high number of respondents for this research. Since only a short period of time is available for the data collection, the number of respondents will not be as high as studies which have more time for their data collection.

The internal reliability will be tested upon the consistency. This will be done with the use of a Cronbach's alpha test, which is measuring the contribution of all parts to the research.

The external reliability is tested if the measure varies on one respondent. This will difficult to test, since, as mentioned before, the time period in which is research is conducted, is limited.

It needs to be taken into consideration that the questionnaire has never been conducted before and internal reliability might be low. To elaborate, since the research does not have any past scales and measurements were not available as guidance and examples. Hence, the survey was completed as its first of its kind. Thus, reliability might be low. If that is the case, the data will still be used for further analysis.

4. ANALYSIS

The analysis for the conducted survey will be done with the use of SPSS 23. Specific tables will show the mentioned values within the analysis; however, some will be put in the appendix. Question 30 had to be deleted, since a misfunction in the software occurred and no data was gathered on that question.

4.1 Cronbach's alpha

In order to know if the survey is conducting reliable information, a Cronbach's alpha test will be done for each variable. The survey has been combined from the author of this paper and are thus, combined with different scales and types of questions in order to gain as much information as possible. Certain items in the analysis have been recoded in order to provide the best reliability analysis. Furthermore, in order to elaborate on values, all necessary tables are provided in the appendix. In this case it would be Table 7.

4.1.1 Artificial intelligence

A Cronbach's analysis was conducted on the "Artificial Intelligence" subscale of the Online advertisement survey. It was found that the subscale's alpha level was .309, which indicates that the subscale did not have an adequate level of inter-item reliability. Further analyses found that deleting any of the items would not have significantly increased the alpha level. The low Cronbach's alpha could originate from the number of items used in this independent variable

4.1.2 Perception of loss of Human Touch

A Cronbach's analysis was conducted on the "Perception of loss of Human Touch" subscale of the Online advertisement survey. It was found that the subscale's alpha level was .250, which indicates that the subscale did not have an adequate level of inter-item reliability. Further analyses found that deleting any of the items would not have significantly increased the alpha level. This is due to the fact that such questions have never been asked before and the survey has been created to gain the most information possible. Furthermore, only two items were used for this independent variable, hence the reliability analysis does not have many items to investigate.

4.1.3 Need for Data Privacy

A Cronbach's analysis was conducted on the "Need for Data Privacy" subscale of the Online advertisement survey. It was found that the subscale's alpha level was .483, which indicates that the subscale did not have an adequate level of inter-item reliability. Further analyses found that deleting any of the items would not have significantly increased the alpha level.

4.1.4 Satisfaction of Online Advertisement

A Cronbach's analysis was conducted on the "Online Advertisement" subscale of the Online advertisement survey. It was found that the subscale's alpha level was .598, which indicates that the subscale did not have an adequate level of inter-item reliability, since the threshold of .600 is commonly used in research studies. Further analyses found that deleting any of the items would have significantly increased the alpha level. Therefore, Questions 1, 4, 7_1 and 8 were deleted due to a significant increase in the value of Cronbach's alpha

4.1.5 Customer experience

A Cronbach's analysis was conducted on the "Customer experience" subscale of the Online advertisement survey. It was found that the subscale's alpha level was .462, which indicates that the subscale did not have an adequate level of inter-item reliability. Further analyses found that deleting any of the items would not have significantly increased the alpha level. Question 15-23 were deleted, since a significant change was made in the inter-reliability outcome.

4.1.6 Conclusion for Cronbach's alpha

The analysis above showed insufficient inter-item reliability. However, this could have due to the short item usage within the separate variables. Furthermore, this research is the first research to pick upon the named model and research design. Since no past research, no scale or measurement was copied. All scales and measurements were made, for this papers purpose. Different adjustments were made in order to generate a higher Cronbach's alpha; however, no change made a significant development within the data analysis.

4.2 Main effects of Artificial intelligence, Perception of loss of Human Touch and Data Privacy

The main effects were analysed by the use of a regression and correlation analysis. First all independent variables were separately combined with the mediator variable. Then the mediator has been analysed with the dependent variable. The independent variables were also tested upon the dependent variable.

Furthermore, the regression analysis will use the intercept to explain the effect of the independent variables on the dependent variable. Thus, if the independent variables are equal to 0, the dependent variable still increases by the B coefficient, which will be stated for each variable.

The analysis above showed that the data is not sufficiently reliable. However, the data will still be used for further analysis.

4.3 Correlation

In order to know if the independent variables are connected with the other variables, a correlation analysis was conducted. If the value of correlation is above a 0.7, then the two independent variables correlating should not be included. In Table 8 (see appendix) you can see that no value is streaking above the value of 0.7 and thus all the variables can be retained.

4.4 Artificial intelligence

The hypothesis for "Artificial Intelligence" is as stated before:

H_1: Artificial intelligence / Big Data will have a negative effect on online advertisement, and thus on the customer experience.

As it can be seen, Table 2 is showing the significance level of Artificial intelligence on the use of online advertisement. The p-value is equal to .887 which is stating that we can reject the hypothesis. This means that Artificial intelligence actually has a positive effect upon online advertisement. This will be further discussed in the upcoming sections.

Artificial intelligence has been tested upon the mediator variable, online advertisement. Within this analysis the outcome of the simple correlation was 0.019 (R=0.019), which represents a correlation of 1.9%, which is very low. The total variation from the mediator variable, which in this and the upcoming case in section 4, acts as the dependent variable, can be explained by 0.000 (R^2=0.000) from the independent variable, which is artificial intelligence. The standard error of the estimate is in this case 0.63350, which indicates a 0.63350% average distance that the observed values fall from the regression line. The coefficient B indicates that the mediator variable would increase by 0.013.

Since, the hypothesis is rejected, and artificial intelligence has a positive effect upon the use of online advertisement in order to increase customer experience, the system quality, information quality and the service quality are increasing. This is due to the fact that artificial intelligence is by itself well enough to create a positive experience for the customer (Trivedi, 2019).

Construct	B	SE B	P	Sr	Sr^2
Artificial Intelligence	0.013	0.63350	0.887	0.019	0.000

Table 2. Results of Regression analysis of Artificial Intelligence with Online advertisement

4.5 Perception of loss of Human Touch

The hypothesis for "Perception of loss of Human Touch" is as stated before:

H_2: Perception of loss of Human Touch will have a negative effect on online advertisement, and thus on the customer experience.

Table 3 makes it visible that the p-value for the Perception of loss of human touch is equal to 0.006, which does not give us enough evidence to reject the hypothesis. Consequently, we can conclude that the Perception of loss of human touch has a negative effect upon the use of online advertisement.

The perception of loss of human touch variable has been tested upon the mediator variable, online advertisement. Within this analysis the outcome of the simple correlation was 0.351 (R=0.351), which represents a correlation of 35.1%, which is adequate. The total variation from the mediator variable, can be explained by 0.123 (R^2=0.123) from the independent variable, which is perception of the loss of human touch. The standard error of the estimate is in this case 0.59330, which indicates a 0.59330% average distance that the observed values fall from the regression line. The coefficient B indicates that the mediator variable would increase by -0.252.

Construct	B	SE B	P	Sr	Sr^2
Human Touch	-0.252	0.59330	0.006	0.351	0.123

Table 3. Results of Regression analysis of Perception of loss of Human Touch with Online Advertisement

4.6 Data Privacy

The hypothesis for "Data Privacy" is as stated before:

H_3: Data Privacy will have a negative effect on online advertisement, and thus on the customer experience.

Table 4 provides us with the p-value of the variable Data privacy, which is equal to 0.000, which again, does not give us enough evidence to reject the hypothesis stated above. Thus, we can conclude that Data privacy has a negative influence on online advertisement.

The Data Privacy variable has been tested upon the mediator variable, online advertisement. Within this analysis the outcome of the simple correlation was 0.550 (R=0.550), which represents a correlation of 55%, which is adequately high. The total variation from the mediator variable, can be explained by 0.303 (R^2=0.303) from the independent variable, which is Data Privacy. The standard error of the estimate is in this case 0.52720, which indicates a 0.52720% average distance that the observed values fall from the regression line. The coefficient B indicates that the mediator variable would increase by 0.340.

Construct	B	SE B	P	Sr	Sr^2
Data Privacy	0.340	0.52720	0.000	0.550	0.303

Table 4. Results of Regression analysis of Data Privacy with Online Advertisement

4.7 Online Advertisement

The hypothesis for "Online advertisement" is as stated before:

H_4: Online Advertisement, affected by the independent variables, will have a negative effect on customer experience.

Table 5 provides us with the p-value of the variable Online advertisement, which is equal to 0.000, which again, does not give us enough evidence to reject the hypothesis stated above. Thus, we can conclude that Online advertisement with the effects of the three independent variables has a negative influence on the customer experience.

The Online advertisement variable has been tested upon the dependent variable, customer experience. Within this analysis the outcome of the simple correlation was 0.723 (R=0.723), which represents a correlation of 72.3%, which is high. The total variation from the mediator variable, can be explained by 0.523 (R^2=0.523) from the independent variable, which is online advertisement. The standard error of the estimate is in this case 0.17589, which indicates a 0.17589% average distance that the observed values fall from the regression line. The coefficient B indicates that the mediator variable would increase by 0.289.

Construct	B	SE B	P	Sr	Sr^2
Online advertisement	0.289	0.17589	0.000	0.723	0.523

Table 5. Results of Regression analysis of Online Advertisement with Customer Experience

4.8 Effects of Mediator

Table 6 is showing that the mediator has an influence upon the independent variables as soon as it is taken into the analysis. For all independent variables the p-value goes above 0.05. Thus, all independent variables have enough evidence to reject the hypothesis. This would imply that all independent variables have a positive effect upon online advertisement. The mediator variable does not have enough evidence to reject the hypothesis. This implies that the mediator influences the independent variables.

	Unstandardized coefficients		
Construct	B	SE	Sig.
(Constant)	.018	.024	.450
Online Advertisement	.235	.044	.000
Data Privacy	.042	.027	.127
Human Touch	-.040	.029	.171
Artificial Intelligence	.019	.026	.478

Table 6. Results of Regression analysis of all independent variable with the mediator

5. RESULTS

The analysis of the collected data has shown that the conceptual framework is in strong connection with the mentioned hypothesis for each section. In order to answer the research question ("How can Artificial Intelligence use big data to form a better customer experience?), figure 1 has been created, with all connections drawn from the literature review. The data gathered will still be used after the conclusion of a low inter-reliability.

The survey has been answered at the same proportion by females and males, with a most respondents being between 18-21 and 22-25. Furthermore, most of the participants have graduated from high school and universities. This is strongly coinciding with the assumptions made at the beginning of this paper.

The data analysis has shown that all hypotheses are being considered as significant expect the hypothesis of the variable "Artificial Intelligence". The data has shown that the artificial intelligence has a positive effect on online advertisement. This rejects the hypothesis, due to the participants answers.

Furthermore, a correlation analysis has shown that all variables are not correlating with each other, due to the variable of artificial intelligence. This further implies that all given assumptions about the outcome are correct, except of the assumption in combination with artificial intelligence.

Participants first answered questions to online advertisement. The outcome has been that most respondents are clicking on online ads and are shopping online at least once a month, but the respondents still prefer to buy products offline. Furthermore, the respondents agree that online advertisement has increasingly become more data focused and that online advertisement has become increasingly annoying to users.

Data privacy is an increasingly important topic in the information age. This is also reflected by the respondent's answers. The outcome has shown that the trust in online advertisement is as expected, not that high. The analysis also shows that the people do not trust the web with their personal data and are not affine to share the data with third parties. The perception of the people has also shifted to a feeling that they are tricked into purchases. However, a contradicting fact is that the respondents still want to have personalized advertisement, even though they do not want to share most of their data with. Thus, a compromise needs to be found.

The respondents had to answer questions which were regarding the customer experience. In general, people think that online advertisement has a negative influence upon the customer experience. This implicates from the beginning that customer experience needs to be improved strongly.

The main perception of the loss of human touch has been confirmed. The majority agrees with the statement that the online advertisement industry has lost the human touch. Furthermore, most of the respondents did agree with a trial period in which they would try to use the combination of artificial intelligence and human intelligence.

The hypothesis for the artificial intelligence variable has been created in order to prove that the respondents / customers are unhappy with the personalized experience. Yet, this is not the case. The respondents have been aware that a lot of the online advertisement has been created by artificial intelligence, and they believe that AI is increasing the customer experience. Thus, we can say that artificial intelligence is not influencing the mediator variable.

This implies that customers are aware that their advertisement could be created by artificial intelligence, because no one knows if the ads are created by machine intelligence. Shoppers want customized experience and might be willing to use the specified data in the internet in order for that to happen. However, data privacy is an important topic for the respondents. They want to have more privacy and are unsure about what data is in the web. This clashes with the need for a customized experience, since data needs to be gathered for further analysis.

If we take all independent variables into account, with the effects of the mediator, human touch, artificial intelligence and data privacy are being rejected and are with a positive effect onto online advertisement and consequently on customer experience.

6. RECOMMENDATIONS FOR ORGANIZATIONS AND RESEARCHERS

Future recommendations are of high importance, since customer experience is an essential component in the success of an organizations. Without customers, an organization would not be able to survive. Hence, the experience that the organization is providing for the customers, it needs to be the best possible journey, since a customer needs to come back or make word-of-mouth promotion. However, no one solution will bring the organization to a stage in which the customer is happy. Many customers mean many different opinions and characters and especially priorities. Organizations need to have a continues improvement and development of an enhanced customer experience.

However, one suggestion has been mentioned in this paper already. Blended AI is a concept and technology from Genesys. It is a combination of artificial intelligence and human intelligence in order to regain the human touch. This is done by the introduction of an agent as a human component for further analysis (Magazine, 2018). This alone, does not solve the results that this paper has proven, but it is a first step in the "right" direction. The respondents have voted for the perception of a loss of human touch in the online advertisement industry. Furthermore, they have argued for the use of a technology with the combination of human and machine intelligence. This would solve the problem of the perceived loss of human touch. The agent will introduce the human touch back into the marketing industry. Richard Bordenave mentioned in his article about the combination of human and artificial intelligence that "behind the data are real live people, who choose, buy, adopt, recommend and thus make each business thrive in real-life contexts." (Bordenave, 2018). This quote summarizes the problem well enough to understand that the introduction of the Blended AI will be the best solution.

The hypothesis for artificial intelligence has been rejected, thus the machine intelligence can be used as it has been before. However, different factors need to be considered while talking about the solution. Artificial intelligence has generally a positive

effect on online advertisement and consequently on the customer experience.

For the customers and respondents was the main concern, that data privacy has been neglected in the past years, even though it is one of the most important topics in the information age. The respondents did not feel safe with their data in the world wide web. This implies that organizations need to strongly develop a safer way to use the data for ad customization. Customers wants the personalized ads; however, they want to have a save environment for their data. A solution for this problem would be that organizations could have more open communication to the customers and less ghost gathering of data. A platform should be developed in which the customer can enter the details he or she wants in order to have the personalized experience. This could bring customers closer to the company, because only entered data is used. Furthermore, the open communication is giving the customer a trustworthy feeling. In this case Blended AI comes back into play. The artificial intelligence could analyse the data, since the machine intelligence is more efficient. However, the data will be finalized by the agent which is creating the customer profiles. This will also expand the trust feeling of the customer towards the company. Furthermore, the personalized experience will contribute to the financial performance of the organizations.

In the findings of this paper it has been made explicit that the data has a poor inter-reliability, recommendations for future researchers will be given. The answers that the respondents gave, represent the research topic well. However, the survey could have been structured for a better reliability. In order to fix the reliability, the future researcher should use a consistent scale with positive outcomes. Furthermore, the sample size should be increased, for more data to analyse. Poorly, this paper was conducted in a short time span so that it was impossible to gain more respondents. Furthermore, the researcher should have sufficient knowledge about the independent variables, in order to create good items for analysis.

To summarize, one solution would combine all difficulties that are currently in the online advertisement industries in combination with artificial intelligence. Blended AI would bring back the human touch in the whole process of ads. With the usage of agents which in the end finalize the personalized experience, a human intelligence is deciding for another human. Furthermore, Blended AI will solve the problem of data privacy. Since and open communication is important and less ghost gathering of data needs to be developed, it needs to be considered that Blended AI itself will not just solve the problem. Data privacy is a continues process in order to create a trustworthy relationship. It has been mentioned before that the customer relationship management has become more important. Thus, the customer needs to speak openly what he or she feels in order for organization to recognize the problems.

7. CONCLUSSION

To conclude, artificial intelligence has become an important topic for the future of online advertisement. However, perceived loss of human touch has been noticed and research has been done. The outcome has been that organizations could develop a so-called Blended AI. This would combine the human intelligence and machine intelligence. Data privacy needs to be considered in the process of developing the fusion. Data privacy has been a topic which needs to be considered for a positive customer relationship management. All hypotheses have been proven right, except artificial intelligence. The survey and data analysis have shown that artificial intelligence is creating a positive experience for the customer. In order to create the best possible experience, data privacy and the loss of human touch need to be re-entered into the whole process. Blended AI with respect to data privacy will be the solution for organization which ant to create a great customer experience. The emotional intelligence from the agent will bring an enhanced customer experience through a great customized advertisement.

8. GENEREAL RESEARCH LIMITATIONS

Questionnaire are free to do and may not be targeting the right people which have a lot of motivation answering the questions with effort, accurately and honest. Even though data errors are unlikely, they can happen, especially with the non-respondent questions, thus this might be a risk considering for the analysis and collection part.

Furthermore, the survey did not gather data for more than 100 people. Consequently, the future researchers that will be conducting surveys upon this topic, need to gather data for more people. They should also keep the scales on a regular base, which means that the scales should be kept in the same range and not vary.

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11. APPENDIX

Construct	Cronbach's alpha (α)	Nr. Of items	Nr. Of items deleted
Artificial Intelligence	.309	3	1
Human Touch	.250	2	0
Data Privacy	.483	7	0
Online advertisement	.598	7	3
Customer experience	.462	7	9

Table 7. Summary of Cronbach's Alpha analysis

Construct	Data Privacy	Customer experience	Online advertisement	Artificial Intelligence	Human Touch
Data Privacy	-				
Customer experience	-.153	-			
Online advertisement	.550	-.031	-		
Artificial Intelligence	-.005	.031	.019	-	
Human Touch	.344	-.073	.351	.200	-

Table 8. Summary of Pearson Correlation

Data Privacy	0.340	0.52720	0.000	0.550	0.303
Online advertisement	0.289	0.17589	0.000	0.723	0.523
Artificial Intelligence	0.013	0.63350	0.887	0.019	0.000
Human Touch	-0.252	0.59330	0.006	0.351	0.123

Table 9. Summary of Regression