Customer experience antecedents in the context of AI chatbot services

سوابق تجربة العملاء في سياق خدمات المحادثة بتقنية الذكاء الاصطناعي

Authors:

Ahmed Mohamed Mahmoud Ramadan,

DBA Researcher, faculty of commerce, Cairo University

supervisors

Dr. Alaa Tarek Khalil

Assistant professor of Marketing, faculty of commerce, Cairo University

Professor. Hala Mohamed Labib Enaba

Professor of Marketing and Entrepreneurship, faculty of commerce, Cairo University

ملخص البحث:

الغرض من هذه الدراسة هو قياس تأثير الذكاء الاصطناعي على تجربة العملاء بناءً على كل من نظريتي التزام الثقة ونموذج جودة الخدمة وذلك كاستجابة للسؤال الواقعي: ما هي أهم العوامل التي يجب على الشركة مراعاتها قبل إطلاق تطبيق خدمة عملاء الذي يعمل بالذكاء الاصطناعي في مجال خدمات الأجهزة المحمولة؟ تم بناء نموذج مفاهيمي بناءً على البحث العلمي الدقيق للمقالات المنشورة سابقا ثم مقابلة ثلاثون مرشحًا لتنقيح النموذج قبل بدء القياس. وم ثم يركز النموذج على تأثير ثلاثة أبعاد للذكاءالاصطناعي وهي: الراحة، والتخصيص، وغموض الذكاء الاصطناعي على تجربة العملاء ومدى تدخل الثقة كعامل وسيط.

الهدف: تهدف الدراسة إلى اختبار النموذج بشكل تجريبي لقياس العوامل التي تؤثر على تجربة العملاء في ضوءاستخدام خدمات دعم الذكاء الاصطناعي تحديدا في مجال خدمات الأجهزة المحمولة. تم إجراء الاختبار على 429 عنصرًا. المنهجية: تم اتباع منهج مختلط في هذا البحث حيث تم استخدام المنهج الاستكشافي النوعي لبناء النموذج بعد مراجعة الأبحاث المنشورة سابقا، ثم اتباع المنهج الأختباري التوضيحي لاختبار النموذج المطور..

تظهر النتائج أن تجربة العملاء المدعمة بالذكاء الاصطناعي تتأثر بشكل كبير بالراحة، ثم يأتي التخصيص في المرتبة الثانية، وأخيرًا يأتي غموض الذكاء الاصطناعي. كما تؤكد النتائج أن التأثير المباشر لتلك العوامل أقوى من علاقة الوساطة من خلال الثقة.

الكلمات الدالة :الذكاء الاصطناعي – خبرة العملاء – الثقة – غموض الذكاء الاصطناعي – التسويق

Abstract :

The **purpose** of this study is to **measure** the impact of Artificial Intelligence on customers' experience based on both the trust-commitment theory (Morgan & Hunt, 1994) and the service quality model (Parasuraman, Zeithaml, & Berry, 1994) as a response to the real live business need. In real life business, the question has already arisen: What are the most important factors that a company should consider before and while launching an AI chatbot customer service application in the mobile broadband field? A conceptual model has been constructed based on literature and 30 candidates' interviews. The model focuses on 3 dimensions: convenience,

personalization, and AI Opaqueness and their impact on customer experience mediated by trust.

Objective: The study aims to empirically test a constructed model that measures the factors impacting AI-Enabled customer Experience due to using artificial intelligence support services in the mobile broadband field. The test has been conducted over 429 elements.

Methodology: A mixed method approach has been followed in this research where qualitative exploratory approach was used to construct the model after literature review, then an explanatory qualitative approach has been followed to test the developed model.

The results show that AI Enabled customer experience is highly impacted by convenience, then comes the personalization, lastly comes the AI Opaqueness. Results also confirm that the direct impact of those factors is stronger than the mediating relationship through trust.

Keywords
Artificial Intelligence – Customer experience – Trust – AI opaqueness - Marketing

1.Introduction

(AI) - Artificial intelligence has a real impact on how corporates interact with their clients (McLean & Osei-Frimpong,

2019). Its strength is mainly due to the rapid processing of data, that is what mainly differentiates it from human intelligence. AI has many angles for definition but in general as mentioned by Paschen et al. (2019) the AI core intelligence lies in the power of processing data before translating it into information that helps in informing or predicting a goal directed behavior. In other words, Artificial Intelligence mainly points to the "computational agents that act intelligently" and imitating the human power capability but exceeding their ability for accuracy (Poole & Mackworth, 2010; Dwivedi et al., 2019). This is achieved by algorithmic modeling for biological and natural intelligence (Gupta et al., 2019). AI also has different levels of code complexity and functions that drives opaqueness in some cases, starting with mechanical AI, then thinking AI, and ending with feeling AI (Huang & Rust, 2020). Evolution in AI highly leads to improving the customer experience as advancing in AI increases companies' knowledge preferences of those customers as well as shopping patterns (Evans, 2019).

The additional efforts potentially required from customers or human interaction absence may form a kind of sacrifice affecting their overall experience. So, the influence of such Customer experiences issues must be deeply studied (Shank et al., 2019; Malle et al., 2015). The service quality conceptualization is well understood in different contexts as highlighted by (Scheidt & Chung, 2019; Parasuraman et al., 1994; Suhartanto et al., 2019;

Collier & Bienstock, 2006), yet how likely an AI enabled service could be impacted by AI Opaqueness and personalization is still not clear in the mobile services field. Although these issues could play a very vital role, there hasn't been enough focus in most of the earlier studies on such relations (Jarrahi, 2018). This means that there are not enough research focusing on the impact of using the technology of AI on the customer experience especially with different types of emerging AI enabled services, and how this would lead to stronger relationships with brands and better customer experience (Wang et al., 2020; Shank et al., 2019).

2. Literature Review

Customer experience for AI based services might be impacted by many constructs, knowing which variables are more impactful is crucial for business success, as the key success for any business model is customers, having said that, studying literature was extremely important in order to explore the all kind of constructs that would impact customer experience in the context of AI chatbot services, in this section below, the researcher has explored more than 120 articles related to the topic, summarized all the definitions of the constructs that were found in the literature impacting customer experience in the context of AI chatbot services, and finally landed on an initial conceptual model as shown below Fig (1).

2.1. Constructs Review

As Bilgihan et al. (2016) said, personalization refers to the degree to which information is tailored to the needs of a single user and thus constitutes an important determinant of positive experiences. Zhang et al. (2007) said information is tailored to the needs and preferences of an individual customer through data mining techniques, which can result in a higher level of interest in shopping. While Zanker et al. (2019) said Personalization is one of the key elements often associated with AI-enabled services. While agreeing to all of them, yet worth mentioning that personalization may not always result in positive experience, it depends on users and their backgrounds. Komiak and Benbasat (2006) highlighted customers link the competence of the brand with stronger personalization. Shen and Ball (2009) highlighted the positive impact of personalization strategies on the users' trust and commitment towards a brand. Searby (2003) confirmed trust is usually linked with the success of personalization. Knight (2018) mentioned that customers would feel less sacrifice towards personalized services.

Li and Huang (2020), Clarke (2019) and Rubin (2020) mentioned AI Opaqueness takes place when users are unclear how and why certain algorithms make choices, predictions, or conclusions. From the researcher point of view, understanding how AI takes decisions or being able to relate it logically to the inputs provided is important as it is something that could reduce

users' trust in the service to the extent that would hinder them from using such an AI service. As Ghazizadeh (2012) highlighted, trusting a brand delivering a technology service depends on understanding the technology used by the service, hence opaqueness of technology decreases trust. Likewise, Lee and See (2004) highlighted the more transparent algorithms and functional logic, the higher trust would be. Hengstler et al. (2016) emphasized the message when he highlighted, trusting the process and the technology are as important as trusting the brand.

Corritore et al. (2003) said a classic definition of trust is an attitude of confident expectation that one's vulnerabilities in a risky situation will not be exploited, he also said in the context of online commerce, this includes trusting the brand as well as the technology, while Siau and Wang (2018) mentioned that trust is key in ensuring the acceptance, continuing progress, and development of this technology especially in the context of AI. The researcher agrees, trust is essential in using AI services, if customers don't trust a brand will not use its AI services, yet the parameters influencing trust in the AI context needs testing. Njamfa (2018) highlighted that trust in the brand positively impacts customer experience recursively. Martin et al. (2015) explained the trust impact on customer experience as a mediator while Ling et al. (2010) showed trust as an independent construct

impacting customer experience hence, one of the added values of this research is to confirm trust mediation impact or deny it.

Schneider and White (2004) did set three definitions to quality based on the approach, first is the philosophical approach stating that quality is synonymous with innate excellence, second is the technical approach stating that the less number of defects or deviation from the standard the lower the quality, and the third is user based approach stating quality is a subjective perception as it is only determined by the user and not necessarily depending on any specifications. From the researcher point of view, first definition is not pragmatic, second is more adequate for products not services, and the third is so subjective and not measurable, the researcher tends more to agree with the definitions in previous studies on self-service technologies like Wolfinbarger and Gilly (2003) and McKecnie et al. (2011) where they defined service quality mean to customers as: a secure, reliable, and beneficial service that also has a good interface design. This is also in line with servqual measures.

Eisingerich and Bell (2008) and Chiou and Droge (2006) explained how service quality impacts customers' trust in the brand. Li and Shang (2019) and Gallarza et al. (2017) highlighted how service quality positively impacts how customers perceive value hence their trust in the brand. Studies

like de Medeiros, Ribeiro and Cortimiglia (2016) depicted the relation between perceived sacrifice and service quality.

Morganosky (1986) defines service convenience as "the ability to accomplish a task in the shortest amount of time with the least expenditure of human energy". Chang et al. (2010) said a convenient service is characterized by saving time and effort and allowing mobility which can be important to encourage customers to be interested in a service. Both definitions make sense and the researcher agrees that saving time and effort are extremely important for feeling convenient with a service, this is similar to the ease of use in the TAM model (Davis, 1989), however what also adds a difference here in latest years based on cloud AI chatbot services, is using the service any time anywhere, which adds a new dimension to feeling convenient while using a services.

(Roy et al., 2017) Explained how convenience does positively impact the trust of customers in the brand and the used technology. Ong et al. (2012) emphasized the same and even more over, explained the positive impact of time savings and easiness of access on customer experience.

Perceived sacrifice pertains to what is given up or sacrificed to obtain a product [or service] and encompasses monetary and non-monetary costs including time, effort, cognitive engagement, or feelings such as irritation and annoyance

(Zeithaml, 1988). While the research does agree with such a definition, it sounds very similar to the opposite of convenience, hence literature and interviews would prove the usefulness of such construct in AI services context or not.

Andr´e et al. (2018) explained the sacrifice clients perceive to be making while using AI automated services hence impacts their overall experience. Gauvrit, (2019) emphasized the same explaining, even sometimes customers prefer having a balance between automated services and human agents for a better experience.

Customer experience refers to the overall hedonism and recognition experience a customer has with a service based on their interactions with and thoughts about the brand (Oh et al., 2012; Verhoef et al., 2009; Otto & Ritchie, 1996; Foroudi et al., 2018).

2.2. Initial Proposed Model and Preliminary Hypothesis Development

Connecting the dots from literature and after exploring more than 120 related articles the below initial conceptual model (Fig 1) has been concluded:

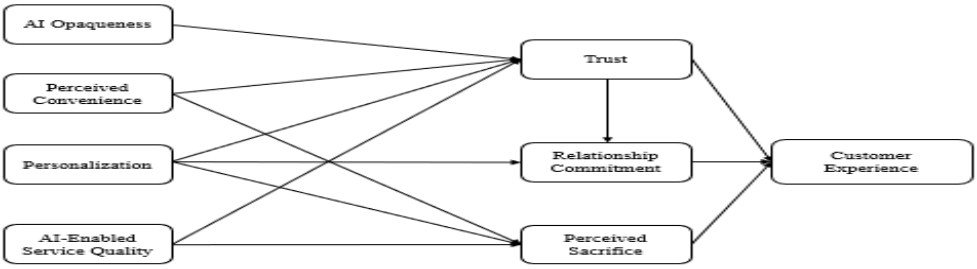

Fig (1): Initial Conceptual Model

Source: Multiple scientific articles as explained in literature review.

3. The Research Methodology

This is a mixed method research that has started with literature review to stand on the constructs would be impacting customer experience in the context of AI Chatbot services, then a qualitative analysis through candidates interviews took place in order to check whether any more constructs shall be considered as well as checking the importance of the constructs found in the literature in the context of the business problem, finally an empirical/deductive testing has been conducted based on the theoretical concepts, its relationships, and the interviews results in order to see how well constructs reflect the model and reality observations, having the ultimate goal of building better integrated theories later on.

3.1.1. Population and Sampling

As a mixed method research, the researcher first conducted interviews to conclude on the model that needs testing then the

researcher has run an online survey to test and validate the derived model.

The target participants for interviews of this study were business stakeholders working in the information technology and artificial intelligence field, at the same time interviewees are customers who deal with chatbot services in the mobile telecom field every day. Hence, purposive sampling has been followed selecting candidates who have more knowledge about the business question emerging from the meetings, and at the same time they have practiced the AI chat bot service as customers.

For testing and validation, a convenience nonprobability sampling has been followed to pick the sample elements, due to security and GDPR confidentiality reasons mobile service providers can't provide a list of their subscribers hence a predefined frame was not possible. The population in this study is all mobile service customers in Egypt. The random sampling technique endorses objectivity while testing and validating results which is really required in such research ending with a qualitative empirical test, however due to having a non-probability sample generalizability can't be applied with confidence.

Data has been collected through an online questionnaire to test the hypothesis, publishing the questionnaire over the internet

guarantees picking sampling elements randomly which satisfies the chosen convenience non-probability sampling technique.

The plan was to reach a sample size of 400 sample elements which should be an achievable number and at the same time should be rich enough to drive conclusions through inferential analysis.

Given a particular standard deviation, the sample size should increase to reduce the standard error, so to get a high precision the sample has to be large enough, where precision is "how close we estimate the population parameter based on the sample statistic". Likewise with confidence. To achieve high precision and 95% confidence level, the researcher has followed the recommendation of Krejcie, et al. (1970) and Cohen (1969)

targeting 400+ sample Size Appendix table 1 shows the sample size for population size when the target confidence level is 95%.

3.1.2. The Research Hypothesis and Final Proposed Model

As explained in previous sections, comparing with the hypothesis derived from previous literature with interview results, apparently service quality, relationship commitment, and perceived sacrifice should be removed as no need to test them, while keeping the rest of constructs is essential and requires empirical testing. Interviewees discussions confirmed

personalization, opaqueness, convenience to be the AI dimensions that would require testing hence kept in the model, interviewees discussions have also confirmed that trust is impacted by each of personalization, opaqueness, and convenience while at the same time trust does impact customer experience from their point of view hence kept in the model as a mediator. Below is the final view of the remaining constructs along with the derived hypothesis that will remain to be tested in the context of this mixed method study. Data collection and analysis will be highlighted in the following sections.

- H1.1: Personalization has a direct positive impact on trust.
- H1.2: AI opaqueness has a negative impact on trust.
- H1.3: Convenience has a direct positive impact on trust.
- H2: Trust has a positive direct impact on customer experience.
- H3.1: Personalization has a direct positive impact on customer experience.
- H3.2: AI opaqueness has a negative impact on customer experience.
- H3.3: Convenience has a direct positive impact on customer experience.
- H4.1: Personalization positive impact on customer experience is mediated by trust.
- H4.2: AI opaqueness negative impact on customer experience is mediated by trust.

- H4.3: Convenience positive impact on Customer experience is mediated by trust.

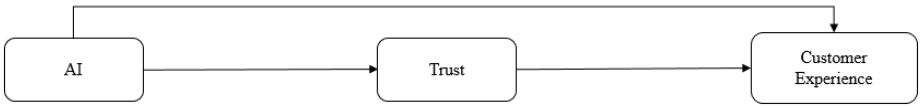

Fig (2): Simplified model based on qualitative interviews and literature.

Source: prepared by author

Based on both literature and qualitative interviews, a simplified model has been developed (Fig 2) which shows the impact of Artificial Intelligence on the customer experience, either directly or through the mediating variable of trust.

In the context of the study and based on the qualitative interviews AI has 3 constructs: convenience, opaqueness, and personalization. In order to measure the relationships and understand which AI dimensions has higher impact on the customer experience and whether this impact is significant through trust or more impactful when it is direct on the customer experience itself, operationalizing the 3 dimensions is required, consequently, the final model is depicted in Fig (3).

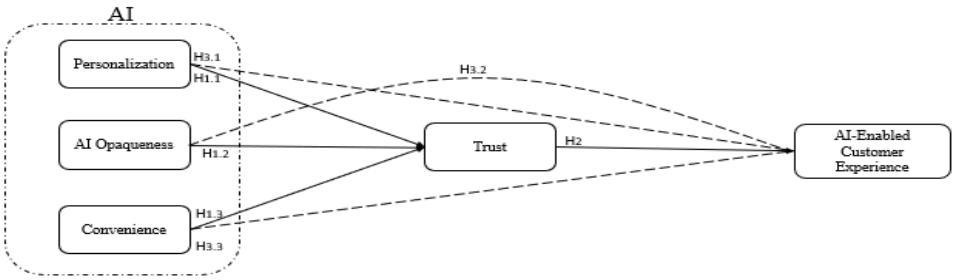

Fig (3): Updated Model based on Qualitative Interviews and Literature

Source: prepared by author

4. Statistics and Data Analysis

The researcher has conducted multiple statistical analysis to empirically test the relations. The researcher used SPSS and started with reliability and validity test over pilot data, later a full reliability and correlation matrix were tested over the full data. Then, statistical descriptive analysis was conducted to check and validate averages, number of responses, Std. Deviation, and data. Correlation Matrix analysis proved the relation between variables as shown in appendix table (2).

Consequently, the researcher has conducted the direct regression analysis with trust and customer experience each as a dependent variable to further emphasize and test the relation.

To further test the relation amongst variables at the same time, muti regression analysis was also conducted, relation was emphasized and ordered as shown in appendix table 3.

Finally, the researcher did run the Hayes 2009 bootstrapping method on SPSS to test the trust mediation relation which has been proved to be significant yet with low beta compared to the bet of the direct relationships of each independent variable against customer experience. Hence, it has been concluded that the trust mediation is significant but the direct impact of personalization, convenience, and AI Opaqueness on customer experience is more impactful.

5. Conclusion

The research confirms the impact of convenience, personalization, due to using AI chatbot services on customer experience, this conclusion is in line with Ameen et al. (2021) where both convenience and personalization have a positive impact on customer experience as well as trust, and trust mediates the relation amongst both, while this conclusion is partially in line with Trawnih et al. (2022) as it assumes Trust is a completely independent variable and not acting as a mediator. Although the impact of both factors is statistically significant, yet the power of B conclusion is different amongst the 3 studies, the current study shows that the highest B goes to the convenience then comes the personalization, while in the

previous two studies personalization had a higher impact than convenience. In this study, due to the context of mobile broad band services, looking at the mediation analysis, one change in the personalization causes a total effect of 0.4653 while the one-unit change of convenience causes 0.5174 change in the customer experience unit. Still the three research are aligned as a concept. Looking at the multiple regression analysis the impact of convenience on customer experience is 0.274 for each one-unit change with a T value of 7.536 while the impact due to personalization is 0.197 for each one-unit change with a T value of 5.6. Finally, same conclusion when looking at the direct regression analysis. Hence the research reveals the clear positive relationship between personalization and both trust as well as customer experience, in line with Zanker et al. (2019) who said personalization is one of the key elements often associated with AI-enabled services but the new thing here in the mobile broad band field is the stronger effect of convenience, apparently users are more apprehensive towards personalization when it comes to mobile services than shopping because mobiles hold critical data, hence convenience jumps to be the strongest factor. Many interviewees highlighted the same during interviews, they couldn't deny how much personalization is usually useful and saves time, yet they have also expressed their fears of personalization in the context of AI chatbot mobile services due to data sensitivity and what could be used and what not.

What is also new in this study is the proof of AI opaqueness impact on the customer experience, opaqueness impact on trust was mentioned by several articles in literature but its cascading impact on customer experience was never incorporated in a model nor tested, according to the mediation and regression analysis, AI opaqueness proved to have a significant direct impact on customer experience.

The research still proves that Trust also has an impact on customer experience, yet it is the lowest impact amongst all variables in this study, and that is why trust mediation impact is weak according to the responses' analysis in chapter 4. This means existing trust helps but not as much as other factors, i.e. if trust does already exist but the AI chatbot application interface is not friendly enough, or the app is not available anytime to user 24 by 7, or the app is not accessible from anywhere, then users would not have a good customer experience, trust would not be enough to keep them happy. Researcher would even argue that trust might decrease in this case as a consequent event, yet this reverse relation would of course be another research point that would require different proper testing.

5.1.1. Future Research

Empirically testing the proposed model on other fields and cultures would be so beneficial in completing the picture and landing on prioritizing the factors impacting AI-Enabled

customer experience as well as testing whether trust would be a real mediator in such context or direct impact of variables would be more significant.

5.1.2. Limitations

Due to the security constraints and GDPR, mobile broad band companies are not allowed to provide a list of their subscribers hence the finding of the study can't be confidently generalized.

References:

Ameen, N., Tarhini, A., Reppel, A., & Anand, A. (2021). Customer experiences in the age of artificial intelligence. *Computers in Human Behavior*, *114*, 106548.

Andr´e, Q., Carmon, Z., Wertenbroch, K., Crum, A., Frank, D., Goldstein, W., et al. (2018). Consumer choice and autonomy in the age of artificial intelligence and big data. *Customer Needs and Solutions*, *5*(1–2), 28–37.

Bilgihan, A., Kandampully, J., & Zhang, T. (2016). Towards a unified customer experience in online shopping environments: Antecedents and outcomes. *International Journal of Quality and Service Sciences*, *8*(1), 102–119.

Chiou, J., & Droge, C. (2006). Service quality, trust, specific asset investment, and expertise: Direct and indirect effects in a satisfaction-loyalty framework. *Journal of the Academy of Marketing Science*, *34*(4), 613–627.

Collier, J. E. & Bienstock, C. C., 2006. Measuring Service Quality in E-Retailing. *Journal of Service Research,* pp. 260-275.

Corritore, C. L., Kracher, B., & Wiedenbeck, S. (2003). On-line trust: Concepts, evolving themes, a model. *International Journal of Human-Computer Studies*, *58*(6), 737–758.

de Medeiros, J. F., Ribeiro, J. L. D., & Cortimiglia, M. N. (2016). Influence of perceived value on purchasing decisions of green products in Brazil. *Journal of Cleaner Production*, *110*, 158–169.

Davis, F. D. (1989). Technology acceptance model: TAM. Al-Suqri, MN, Al-Aufi, AS: Information Seeking Behavior and Technology Adoption, 205-219.

Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., & Crick, T. (2019). Artificial Intelligence (AI): Multidisciplinary

perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*. https://doi.org/10.1016/j.ijinfomgt.2019.08.002.

Eisingerich, A. B., & Bell, S. J. (2008). Perceived service quality and customer trust: Does enhancing customers' service knowledge matter? *Journal of Service Research, 10*(3), 256–268.

Evans, M. (2019). *Build A 5-star customer experience with artificial intelligence*. https://www.forbes.com/sites/allbusiness/2019/02/17/customer-experience-artificial-intelligence/#1a30ebd415bd. (Accessed 15 July 2021).

Gauvrit, P. (2019). *Why the future of customer service is AI and humans together*. https ://www.eptica.com/blog/why-future-customer-service-ai-and-humans-together. (Accessed 19 Aug 2021).

Ghazizadeh, M., Lee, J. D., & Boyle, L. N. (2012). Extending the technology acceptance model to assess automation. *Cognition, Technology & Work, 14*(1), 39–49.

Gupta, S., Drave, V. A., Dwivedi, Y. K., Baabdullah, A. M., & Ismagilova, E. (2019). Achieving superior organizational performance via big data predictive analytics: A dynamic capability view. *Industrial Marketing Management*. https://doi.org/10.1016/ j.indmarman.2019.11.009.

Hengstler, M., Enkel, E., & Duelli, S. (2016). Applied artificial intelligence and trust—the case of autonomous vehicles and medical assistance devices. *Technological Forecasting and Social Change, 105*, 105–120.

Huang, M.-H. & Rust, R. T., 2020. A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science*, pp. 1-21.

Jarrahi, M. H. (2018). Artificial intelligence and the future of work: Human-AI symbiosis in organizational decision making. *Business Horizons, 61*(4), 577–586.

Knight, W. (2018). *How artificial intelligence enhances personalized communication*. https://www.business2community.com/communications/artificial-intelligence-enh ances- personalized-communication-02041997. (Accessed 4 July 2021).

Komiak, S. Y., & Benbasat, I. (2006). The effects of personalization and familiarity on trust and adoption of recommendation agents. *MIS Quarterly*, 941–960.

Lee, J. D., & See, K. A. (2004). Trust in automation: Designing for appropriate reliance. *Hum.Factors, 46*(1), 50–80.

Li, J., & Huang, J. S. (2020). Dimensions of artificial intelligence anxiety based on the integrated fear acquisition theory. *Technology in Society*, 63, 101410.

Li, Y., & Shang, H. (2019). *Service quality, perceived value, and citizens' continuous-use intention regarding e-government: Empirical evidence from China* (p. 103197). Information & Management. https://doi.org/10.1016/j.im.2019.103197.

Ling, K. C., Chai, L. T., & Piew, T. H. (2010). The effects of shopping orientations, online trust and prior online purchase experience toward customers' online purchase intention. *International Business Research, 3*(3), 63.

Malle, B. F., Scheutz, M., Arnold, T., Voiklis, J., & Cusimano, C. (2015). March. Sacrifice one for the good of many? People apply different moral norms to human and robot agents. In *2015 10th ACM/IEEE international conference on human-robot interaction (HRI)* (pp. 117–124).

Martin, J., Mortimer, G., & Andrews, L. (2015). Re-examining online customer experience to include purchase frequency and perceived risk. *Journal of Retailing and Consumer Services, 25*, 81–95.

McKecnie, S., Ganguli, S., & Roy, S. K. (2011). Generic technology- based service quality dimensions in banking. *International Journal of Bank Marketing, 29*(2), 168–189.

McLean, G., & Osei-Frimpong, K. (2019). Hey Alexa… examine the variables influencing the use of artificial intelligent in-home voice assistants. *Computers in Human Behavior, 99,* 28–37, 2019.

Morganosky, M. A. (1986). Cost- versus convenience- oriented consumers: Demographic, lifestyle, and value perspectives. *Psychology and Marketing, 3*(1), 35–46.

Oh, L. B., Teo, H. H., & Sambamurthy, V. (2012). The effects of retail channel integration through the use of information technologies on firm performance. *Journal of Operations Management, 30*(5), 368-381.

Ong, F. S., Khong, K. W., Faziharudean, T. M., & Dai, X. (2012). Path analysis of atmospherics and convenience on flow: The mediation effects of brand affect and brand trust. *International Review of Retail Distribution & Consumer Research, 22*(3), 277–291.

Otto, J. E., & Ritchie, J. B. (1996). The service experience in tourism. *Tourism Management, 17*(3), 165e174.

Parasuraman, A., Zeithaml, V. A. & Berry, L. L., 1994. Reassessment of expectations as a comparison standard in measuring service quality: Implications for further research. *Journal of Marketing,* 58(1), p. 111–124.

Poole, D. L., & Mackworth, A. K. (2010). *Artificial intelligence: Foundations of computational agents*. Cambridge: Cambridge University Press.

Roy, S. K., Balaji, M. S., Sadeque, S., Nguyen, B., & Melewar, T. C. (2017). Constituents and consequences of smart customer experience in retailing. *Technological Forecasting and Social Change, 124,* 257–270.

Rubin, V. (2020, November). AI opaqueness: What Makes AI Systems More Transparent?. In Proceedings of the Annual Conference of CAIS/Actes du congrès annuel de l'ACSI.

Scheidt, S. & Chung, Q. B., 2019. Making a case for speech analytics to improve customer service quality: Vision, implementation, and evaluation. *International Journal of Information Management*, Volume 45, p. 223–232.

Schneider, B., & White, S. S. (2004). Service quality: Research perspectives.

Searby, S. (2003). Personalization—an overview of its use and potential. *BT Technology Journal, 21*(1), 13–19.

Shank, D. B., Graves, C., Gott, A., Gamez, P., & Rodriguez, S. (2019). Feeling our way to machine minds: people's emotions when perceiving mind in artificial intelligence. *Computers in Human Behavior, 98*, 256–266, 2019.

Shen, A., & Ball, A. D. (2009). Is personalization of services always a good thing? Exploring the role of technology- mediated personalization (TMP) in service relationships. *Journal of Services Marketing, 23*(2), 80–92.

Siau, K., & Wang, W. (2018). Building trust in artificial intelligence, machine learning, and robotics. *Cutter Business Technology Journal, 31*(2), 47–53. Solis, B. (2017).

Suhartanto, D., et al., 2019. Loyalty toward online food delivery service: the role of e-service quality and food quality. *Journal of Foodservice Business Research,* 22(1), p. 81–97.

Uma, S. (2016). Research methods for business.

Verhoef, P. C., Lemon, K. N., Parasuraman, A., Roggeveen, A., Tsiros, M., & Schlesinger, L. A. (2009). Customer experience creation:

Determinants, dynamics and management strategies. *Journal of Retailing, 85*(1), 31-41.

Wang, J., Molina, M. D., & Sundar, S. S. (2020). When expert recommendation contradicts peer opinion: Relative social influence of valence, group identity and artificial intelligence. *Computers in Human Behavior, 107*, 106278.

Wolfinbarger, M., & Gilly, M. C. (2003). eTailQ: dimensionalizing, measuring and predicting etail quality. *Journal of Retailing, 79*(3), 183–198.

Zanker, M., Rook, L., & Jannach, D. (2019). Measuring the impact of online personalization: Past, present and future. *International Journal of Human-Computer Studies, 131*, 160–168

Zeithaml, V. (1988). A consumer's perceptions of price, quality, and value: A means–end model and synthesis of evidence. *Journal of Marketing, 52*(3), 2–22.

Zhang, X., Edwards, J., & Harding, J. (2007). Personalised online sales using web usage data mining. *Computers in Industry, 58*(8–9), 772–782.

Appendix:

Table (1): Sample Size for a Given Population Size

Source: (Uma, 2016)

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Table (2): Correlation Matrix

Source: Prepared by author in SPSS

z	1	2	3	4	5
1. Customer experience	1				
2. Personalization	.561**	1			
3. Convenience	.614**	.590**	1		
4. Trust	.470**	.460**	.467**	1	
5. AI opaqueness	-.519**	-.285**	-.338**	-.367**	1

Table (3): Multi Regression Analysis

Source: Prepared by author in SPSS

Hypothesis	IV	DV	R2	F	Sig	B	T	Sig
H1.1	Personalization	Trust	0.31	63.147	0.000	0. 251	5.068	0.000
H1.2	AI opaqueness					-0. 161	-4.885	0.000
H1.3	Convenience					0. 245	4.785	0.000
H2	Trust	Customer experience	0. 538	122.527	0.000	0.096	2.409	0.016
H3.1	Personalization					0. 197	5.6	0.000
H3.2	AI opaqueness					-0. 187	-8.42	0.000