

How Robo advisory service can transform service experience in financial context?

Meral Ahu Karageyim, Dr.

Boğaziçi University Senior Researcher (CARF)

ICD Paris Instructor (Part time)

makarageyim@groupe-igs.fr

Ahu.karageyim@boun.edu.tr

<https://orcid.org/0000-0002-5685-7279>

Ali Coskun, Phd Associate Professor

[Boğaziçi University The Faculty of Economics and Administrative Sciences](#)

Ali.coskun@boun.edu.tr

ABSTRACT

The multiple case study research (three robo advisors operating in three different countries) is conducted with qualitative in financial context. The research focuses on service innovation experience and discusses the role of robo-advisors as facilitators for service innovation. The research shows that robo-advisors provide different service innovation experiences for different client groups with both short-term and long-term investment ideas by providing regular information, using social media and different digital platforms. In addition to technology related and customer related challenges, trust problem also emerges as a central theme for all three cases of robo advisory service.

Key words: Artificial Intelligence, Financial services, Banking, marketing of financial services, service innovation, qualitative research, case study research

RESUME

L'étude de cas multiples (trois robo-advisors opérant dans trois pays différents) est menée dans un contexte financier. La recherche se concentre sur l'expérience d'innovation de service et sur le rôle des robots-conseillers en tant que facilitateurs de l'innovation de service. La recherche montre que les robo-advisors fournissent différentes expériences d'innovation de service pour différents groupes de clients avec des idées d'investissement à court et à long terme en fournissant des informations régulières, en utilisant les médias sociaux et différentes plateformes numériques. Outre les défis liés à la technologie et à la clientèle, le problème de la confiance apparaît également comme un thème central dans les trois cas de services de robo-conseil.

Mots clés : L'Intelligence artificielle, services financiers, banque, marketing des services financiers, innovation des services, recherche qualitative, étude du cas

LITERATURE REVIEW

Service Innovation

Traditionally three broad empirical views of service innovation exist each emphasizing assimilation, demarcation and synthesis (Helkkula et al., 2012, 2018; Rubalcaba et al., 2012; Witell et al., 2016). Different from the demarcation and assimilation approaches the synthesis approach underlines the value, describes the service innovation as the multi-dimensional process without any significant paradigm. The present study relies on the synthesis approach with the “Experiential Archetype of Service Innovation”.

The experiential archetype is based on phenomenological understanding of experience as individual and subjective. The main focus for the experiential archetype is the individual service innovation experience (Helkkula et al., 2012, 2018)

Service innovation is described as the subjective individual experience of something new or revised in the customers’ social context. The experiential archetype accepts customers’ as the main actors in the phenomenological sense since they experience the service innovation in their own social context (Helkkula et al., 2018; Rubalcaba et al., 2012; Vargo & Lusch, 2008b).

In this definition of service innovation, there is strong focus on subjective experience and sense making since there may be various subjective experiences and perceptions for only one service. To put in other words, one customer may perceive a service process as easy, convenient or exciting but one another may find the same process as unpleasant and difficult.

In a service context the experiential archetype focuses on value. Vargo and Lusch (Gummerus, 2013; Vargo et al., 2017; Vargo & Lusch, 2008a) stated that “value is always uniquely and phenomenologically determined by the beneficiary underlining the importance of experienced value by the customer. Marketing literature provides enough evidence for the relationship between value and experiences (Grönroos, 2011; Grönroos & Voima, 2013; Prahalad & Ramaswamy, 2004). Grönroos underlines the accumulation of value through experiences and defines the value-in-use: “The nature of value-in-use instead is the extent to which a customer feels better off (positive value) or worse off (negative value) through experiences somehow related to consumption” (Grönroos & Voima, 2013) . According to Prahalad and Ramaswamy (Prahalad & Ramaswamy, 2004) value is co-created through experience, where value and value co-creation are defined by "the experience of a particular consumer at a particular point in time and in a particular place". They argue that the technology

or process is not central, but merely serves to distribute and deliver the mechanism for service delivery and does not create value per se. This conceptualization of service innovation will be used for this research as a theoretical framework.

Robo advisors

Robo advisors have been defined as digital platforms comprising interactive and intelligent user assistance components that use information technology through automated investment advisory process (Belanche et al., 2019; Morana, S., Gnewuch, U., Jung, D. Granig, 2020). Robo advisory are also defined as the new type self-service technology SST (Zhang et al., 2021) with different adoption mechanism. Recent literature about robo advisory tackle legal, technological and design issues (Jang et al., 2021). A few studies address demographic characteristics of robo advisor users. The use of robo-advisors by customers is a simple process, similar to the use of classical human advisory. Contrary to human advisors robo advisors rely on automated and AI based platforms and provide investors with professional financial advice. The use of robo advisory begins with an initial questionnaire, in order to understand profile of the customer. First, this technology based service assesses the profile of the customer via an initial questionnaire (i.e. goal, risk, return expectations). Then robo advisor provides specific and customized recommendations about investments. Contrary to the human advisor the service is supported by artificial intelligence backed platform (Belanche et al., 2019). Robo advisory offer several advantages over classical and traditional advisory: Efficiency in almost every business (Belanche et al., 2019; Haenlein & Kaplan, 2019; Wirtz et al., 2018), From a banking perspective robo advisory is a desired service because it provides efficiency, transparency, low cost service to almost all types of individuals. It also provides temporal and ubiquitous access to financial advice system and offer widely investment options based on AI based analysis (Belanche et al., 2019)

Although marketing literature on robo advisory services provides enough evidence about the advantages of robo advisory, such as low cost service, democratization of advisory services, accessible 24 hours and every day to almost everyone research demonstrates that users prefer human advisors (Brenner & Meyll, 2020). Robo advisors are accepted as relatively new phenomenon in banking and in finance (Adam et al., 2019) The early research on robo advisory focused on the platform design (Jung et al., 2018) technical issues, and robo advisor advantages

(Belanche et al., 2019). Although the robo advisory is becoming more and more popular among the banks and financial institutions there is not enough evidence about the adoption mechanisms and criteria of robo advisors. TAM, Technology acceptance model has been widely used by researchers in order to understand and explain the acceptance criteria of social robots (Davis, 1989). Another model has been proposed by Wirtz, social robots acceptance model SRAM, integrating social and emotional elements like perceived humanness, perceived social interactivity and perceived social presence (Wirtz et al., 2018). Digitalization improves efficiency and it removes social aspect of human to human interaction. Digitalization adds another dimension human to computer interaction. The major examples is interaction with social robots (Wirtz et al., 2018).

Marketing literature provides enough evidence for the adoption criteria of artificial intelligence in banking and robo advisors such as trust (Brenner & Meyll, 2020; Zhang et al., 2021), attitude towards the robo advisors, familiarity with the AI and robots and perceived usefulness (Belanche et al., 2019) perceived ease of use (Belanche et al., 2019; Zhang et al., 2021). Researches provide strong financial evidence about the importance of design of robo advisory in terms of layout and usability (Jung, D., Dorner, V., Glaser, F., and Morana, 2018) and personalization. Heinrich and Schwabe (Heinrich & Schwabe, 2018) concluded that IT assisted advisory processes increase customer learning and this enable customers to make more informed decisions about investments. Robo advisors are mostly preferred by relatively young users with low investment portfolios (Brenner & Meyll, 2020). On the other hand there are researches suggesting that consumers prefer and trust an expert human advisor compared to human advisor and expect better performance (Jung et al., 2018; Zhang et al., 2021). In the light of these findings it is suggested that anthropomorphism can make up for a lack of human contact with increasing social presence of the system in the context of human computer interaction (Araujo, 2018; Morana, S., Gnewuch, U., Jung, D. Granig, 2020).

A financial context has been identified for the research with a focus on robo advisory service. Digital transformation and AI are creating new opportunities for financial institutions to interact with customers. In addition value creating activities are shifting from traditional channels to self-service channels without direct contact with advisors or employees (Cova & Gummerus, 2022; Manser Payne, Peltier, et al., 2021). Marketing literature provides enough evidence for value

dimensions in services (Carù & Cova, 2003; Grönroos, 2017; Grönroos & Voima, 2013; Vargo & Lusch, 2008b). Robo advisory is a relatively new service, with a capacity of challenging the traditional financial advisory and this is a critical issue because financial services are mostly defined as high-touch personal relationship service delivery (C. Ennew et al., 1992, 2011; C. T. Ennew & Waite, 2013). As digital transformation and the integration of AI in finance continue it is important to understand the role of AI in services.

In addition despite the popularity of AI in financial services, the acceptance of robo advisory service with little human intervention has been much slower than expected (Adam et al., 2019; Jung, D., Dorner, V., Glaser, F., and Morana, 2018; Payne & Frow, 2017; Zhang et al., 2021). customers prefer more human advisors due to trust issues (Manser Payne, Dahl, et al., 2021; Manser Payne, Peltier, et al., 2021; Zhang et al., 2021). There are several studies related to customer acceptance of AI, design, legal issues, technical problems, anthropomorphism etc. but the role of banks and financial institutions for customer value co-creation is relatively less researched area (Chen, 2018; De Keyser & Kunz, 2022; Helkkula et al., 2012, 2018; Jung, D., Dorner, V., Glaser, F., and Morana, 2018; Kaartemo & Helkkula, 2018; Zhang et al., 2021). Therefore this exploratory research is conducted in order to fulfill this research gap and to understand how robo advisory service transforms service experience.

Two interrelated research questions have been identified for this research: RQ1 How can robo advisors facilitate valuable service innovation experiences for customers? RQ 2 What are the challenges and problems?

METHODOLOGY

Qualitative research approach has been adopted for this research with case study methodology in order to explore and to understand the meaning individuals or groups ascribe to a social or human problem. Case study methodology has been chosen with a qualitative approach for this study. A multiple case study procedure will be used because it is accepted as a more robust and more compelling by the academic practitioners (Eisenhardt, 1989; Yin Robert, 2014)

A case study is an empirical method that investigates a contemporary phenomenon (the “case”) in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident (Yin Robert, 2014). Triangulation has been secured by the use of multiple data resources (Annexe 1)

Selection of cases

A theoretical sampling approach has been used in order to find theoretically and practically useful cases (Eisenhardt, 1989). Researchers contacted ten different financial institutions providing robo advisory services. Three institutions contacted us. We have identified three robo advisors for the research that are transparently observable with a clear value proposition. These three robo advisors were operating in different geographical locations (Annexe 1). A case study protocol is prepared for the construct validity.

Data Analysis

Qualitative data analysis method has been used in order to reflect different themes and subthemes and to display data in the form of contrasting categories for each case. Transcribing, coding and preparing within case write-ups were the preliminary steps (Eisenhardt, 1989; Griggs, 1987; Matthew B. Miles, A. Michael Huberman, 2018; Yin Robert, 2014). The definition of research questions and possible constructs helped the researchers to identify patterns, categories and dimensions.

FINDINGS

We identified three categories for the research at the end of both within case and cross case analysis: motivations for robo advisory platform, service experience and problems and challenges the institutions faced. The details of the codes and categories are in Annexe 3. Within case analysis reveals that the objectives and advantages are quite similar in these three robo advisors. The authors of this research focused mostly on the improvement of customer experience strategies and problems they faced in order to answer research questions.

SERVICE EXPERIENCE Annexe 1 Service innovation experience (facilitation for each case) and problems related to robo advisory service innovation experience

DISCUSSION

The research provides important theoretical and managerial contribution for service innovation literature. Both within case and cross case analysis highlight differences and similarities between cases. The study reveals three service innovation cases with advantages and problems and compares different robo advisors in terms of service experience, investment ideas. The robo advisory service is defined as investment advisory service at a transparent and fair price by most managers. The findings related to the service description, target groups and advantages of robo advisory service are consistent with the marketing literature (Belanche et al., 2019; Brenner & Meyll, 2020; Jung et al., 2018). The advantages of the service have been described clearly. On the other hand there is a strong focus on the digital transformation of financial services due to reasons such as serving more customers and cost control. The cross case analysis revealed similarities and differences between countries as well. Case B and Case C offers investment products and investment options for long term like financial planning simulation or expected return simulation. However Case A is different in terms of investment ideas and customer demands due to Turkey's recent economic conditions and crisis related situations. In addition managers reported that customers are asking for more short term investment ideas and different investment options such as cryptocurrencies. Case study findings related to service experience provides strong evidence for the role of service institutions. The experiential type of service innovation becomes more important when firms and financial institutions seek to create new value with customers. The experiential archetype defines the role of firms and institutions as "the facilitator" for the customer's phenomenological experience. In this view value resides in the experience (Helkkula et al., 2012, 2018; Kaartemo & Helkkula, 2018; Lusch & Nambisan, 2015; Prahalad & Ramaswamy, 2004; Vargo & Lusch, 2008b). The analysis reveals that financial institutions facilitate investment experience by providing relatively cheap, objective and transparent ideas to investors. These investment ideas are mostly based on investors' profiles.

The head of Investments in Bank A:

"We have five risk profiles, five risk profiles that I'll tell you how we invest because that is one of the differences with others. But five risk profiles that are defined based on what ESMA, the European Index"

The study findings also show that there are four main strategies highlighting and facilitating service innovation experience proposed by robo advisory service. (Table 1 Service experience). Robo advisory service experience provided by financial services institutions are composed of two major offerings: regular market information, investment ideas based on profile and market conditions. In addition these institutions use excessively social media platforms and mobile banking applications for transparent relationship with customers. They also use different styles and strategies such as gamification and education videos for better customer service experience.

The managers underlined the importance of different service experiences and investment ideas for the adoption of robo advisory service. Contrary to the evidence provided by marketing literature about the effect of anthropomorphism and social presence (Epley, N., Waytz, A., Akalis, S., and Cacioppo, 2008; Morana, S., Gnewuch, U., Jung, D. Granig, 2020; Munnukka et al., 2022) no evidence reported on the use of avatars, (anthropomorphism and social presence) for a better service experience.

The manager of Case A underlined the importance of objective investment ideas for the use of robo-advisory: **“One of the points I like the most is this. It prevents some subjective decision making. That is one of the most important things. Especially sales transactions are a very difficult thing to decide. I mean, you buy a share, I assume you are at a loss, you can't sell even if you have to sell”**.

He also underlined the importance of transparency...

“For example, robo topics... Or I got questions like what are the success percentages of the trading recommendations given by general analysts. For example, I realized that we need to be more transparent here. We need to put these into practice a little bit, you know, we need to put a trend gray level here. When I met with Pompeo, I learned that there is no harm in sharing information and investment ideas, how many of them were successful, how many of them failed. Well, then, let's give it from within the application, that is, the client already receives such information from the advisors without researching it.

According to the findings, problems and challenges can be classified into three broad categories: technology related problems, trust and customer complaints and comments. Technology related problems (technology based requirements, developments and improvements) are one of the big

problems and challenges robo advisory system faces. It is argued that the evolving financial ecosystem powered by technology can assist in transforming customers' experiences facilitating their autonomous creation of value (Rooney et al., 2021). Robo advisory may require more integrated technological infrastructure for a better service experience and advisory. The second theme "trust" emerges as a central theme for problems and challenges because it is a critical theme in this technology infused digital environment for building and maintaining long term relationships. Trust (at all levels, transaction based, action based securities and private life concerns) is one of the most questioned and discussed themes in financial eco system (Belanche et al., 2019; Rooney et al., 2021)

The research makes important theoretical and managerial contributions by addressing the role of financial institutions for service innovation experience in robo advisory. First the research provides some important insights about the service facilitation and differentiation strategies. The findings are compatible with the service innovation literature (Helkkula et al., 2018) and may be important for generating new knowledge for experiential archetypes. Second, the research highlights cultural differences and common points for investment idea generation. Third technology investments and customer complaints and comments should be taken into consideration for a better service innovation experience.

REFERENCES

- Adam, M., Toutaoui, J., Pfeuffer, N., & Hinz, O. (2019). *Association for Information Systems AIS Electronic Library (AISeL) INVESTMENT DECISIONS WITH ROBO-ADVISORS: THE ROLE OF ANTHROPOMORPHISM AND PERSONALIZED ANCHORS IN RECOMMENDATIONS* Recommended Citation. 0–18.
https://aisel.aisnet.org/ecis2019_rp/33
- Araujo, T. (2018). Computers in Human Behavior Living up to the chatbot hype : The influence of anthropomorphic design cues and communicative agency framing on conversational agent and company perceptions. *Computers in Human Behavior*, 85, 183–189.
<https://doi.org/10.1016/j.chb.2018.03.051>
- Belanche, D., Casaló, L. V., & Flavián, C. (2019). Artificial Intelligence in FinTech: understanding robo-advisors adoption among customers. *Industrial Management and Data*

Systems, 119(7), 1411–1430. <https://doi.org/10.1108/IMDS-08-2018-0368>

Brenner, L., & Meyll, T. (2020). Robo-advisors: A substitute for human financial advice?

Journal of Behavioral and Experimental Finance, 25, 100275.

<https://doi.org/10.1016/j.jbef.2020.100275>

Carù, A., & Cova, B. (2003). Revisiting consumption experience: A more humble but complete view of the concept. *Marketing Theory*, 3(2), 267–286.

<https://doi.org/10.1177/14705931030032004>

Chen, K. (2018). Financial innovation and technology firms: A smart new world with machines.

International Symposia in Economic Theory and Econometrics, 25, 279–292.

<https://doi.org/10.1108/S1571-038620180000025012>

Cova, B., & Gummerus, J. (2022). *Marketing-as-practice : A framework and research agenda for value-creating marketing activity*. 0(0), 1–22. <https://doi.org/10.1177/14705931221123949>

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly: Management Information Systems*, 13(3), 319–339.

<https://doi.org/10.2307/249008>

De Keyser, A., & Kunz, W. H. (2022). Living and working with service robots: a TCCM analysis and considerations for future research. *Journal of Service Management*, 33(2), 165–196.

<https://doi.org/10.1108/JOSM-12-2021-0488>

Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *Academy of*

Management Review, 14(4), 532–550. <https://doi.org/10.5465/amr.1989.4308385>

Ennew, C., Kharouf, H., & Sekhon, H. (2011). Trust in UK financial services: A longitudinal analysis. *Journal of Financial Services Marketing*, 16(1), 65–75.

<https://doi.org/10.1057/fsm.2011.8>

Ennew, C. T., & Waite, N. (2013). Financial services marketing: An international guide to principles and practice. In *Financial Services Marketing: An International Guide to*

Principles and Practice (Issue April). <https://doi.org/10.4324/9780080465609>

- Ennew, C., Wong, P., & Wright, M. (1992). Organisational Structures and the Boundaries of the Firm: Acquisition and Divestment in Financial Services. *The Service Industries Journal*, 12(4), 478–496. <https://doi.org/10.1080/02642069200000060>
- Epley, N., Waytz, A., Akalis, S., and Cacioppo, J. T. 2008. (2008). “When We Need A Human: Motivational Determinants of Anthropomorphism,.” *Social Cognition*, 26(2), 143–155.
- Griggs, S. (1987). Analysis Qualitative. *Journal of the Market Research Society*, 29(1), 14–32.
- Grönroos, C. (2011). Value co-creation in service logic: A critical analysis. *Marketing Theory*, 11(3), 279–301. <https://doi.org/10.1177/1470593111408177>
- Grönroos, C. (2017). On Value and Value Creation in Service: A Management Perspective. *Journal of Creating Value*, 3(2), 125–141. <https://doi.org/10.1177/2394964317727196>
- Grönroos, C., & Voima, P. (2013). Critical service logic: Making sense of value creation and co-creation. *Journal of the Academy of Marketing Science*, 41(2), 133–150. <https://doi.org/10.1007/s11747-012-0308-3>
- Gummerus, J. (2013). Value creation processes and value outcomes in marketing theory: Strangers or siblings? *Marketing Theory*, 13(1), 19–46. <https://doi.org/10.1177/1470593112467267>
- Haenlein, M., & Kaplan, A. (2019). A brief history of artificial intelligence: On the past, present, and future of artificial intelligence. *California Management Review*, 61(4), 5–14. <https://doi.org/10.1177/0008125619864925>
- Heinrich, P., & Schwabe, G. (2018). Facilitating Informed Decision-Making in Financial Service Encounters. *Business and Information Systems Engineering*, 60(4), 317–329. <https://doi.org/10.1007/s12599-017-0501-5>
- Helkkula, A., Kelleher, C., & Pihlström, M. (2012). Characterizing Value as an Experience: Implications for Service Researchers and Managers. *Journal of Service Research*, 15(1), 59–75. <https://doi.org/10.1177/1094670511426897>
- Helkkula, A., Kowalkowski, C., & Tronvoll, B. (2018). Archetypes of Service Innovation:

- Implications for Value Cocreation. *Journal of Service Research*, 21(3), 284–301.
<https://doi.org/10.1177/1094670517746776>
- Jang, M., Jung, Y., & Kim, S. (2021). Investigating managers' understanding of chatbots in the Korean financial industry. *Computers in Human Behavior*, 120(July 2020), 106747.
<https://doi.org/10.1016/j.chb.2021.106747>
- Jung, D., Dorner, V., Glaser, F., and Morana, S. (2018). “Robo-Advisory: Digitalization and Automation of Financial Advisory,.” *Business & Information Systems Engineering*, 60(1), 81–86.
- Jung, D., Dorner, V., Weinhardt, C., & Puzmaz, H. (2018). Designing a robo-advisor for risk-averse, low-budget consumers. *Electronic Markets*, 28(3), 367–380.
<https://doi.org/10.1007/s12525-017-0279-9>
- Kaartemo, V., & Helkkula, A. (2018). A Systematic Review of Artificial Intelligence and Robots in Value Co-creation: Current Status and Future Research Avenues. *Journal of Creating Value*, 4(2), 211–228. <https://doi.org/10.1177/2394964318805625>
- Lusch, R. F., & Nambisan, S. (2015). Service innovation: A service-dominant logic perspective. *MIS Quarterly: Management Information Systems*, 39(1), 155–175.
<https://doi.org/10.25300/MISQ/2015/39.1.07>
- Manser Payne, E. H., Dahl, A. J., & Peltier, J. (2021). Digital servitization value co-creation framework for AI services: a research agenda for digital transformation in financial service ecosystems. *Journal of Research in Interactive Marketing*, 15(2), 200–222.
<https://doi.org/10.1108/JRIM-12-2020-0252>
- Manser Payne, E. H., Peltier, J., & Barger, V. A. (2021). Enhancing the value co-creation process: artificial intelligence and mobile banking service platforms. *Journal of Research in Interactive Marketing*, 15(1), 68–85. <https://doi.org/10.1108/JRIM-10-2020-0214>
- Matthew B. Miles, A. Michael Huberman, J. S. (2018). *Qualitative Data Analysis A Methods Sourcebook* (4th ed.). Sage.
- Morana, S., Gnewuch, U., Jung, D. Granig, C. (2020). *THE EFFECT OF*

ANTHROPOMORPHISM ON INVESTMENT DECISION-MAKING WITH ROBO-ADVISOR CHATBOTS. 0–18.

- Munnukka, J., Talvitie-Lamberg, K., & Maity, D. (2022). Anthropomorphism and social presence in Human–Virtual service assistant interactions: The role of dialog length and attitudes. *Computers in Human Behavior*, *135*(November 2021), 107343. <https://doi.org/10.1016/j.chb.2022.107343>
- Payne, A., & Frow, P. (2017). Relationship marketing: looking backwards towards the future. *Journal of Services Marketing*, *31*(1), 11–15. <https://doi.org/10.1108/JSM-11-2016-0380>
- Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing*, *18*(3), 5–14. <https://doi.org/10.1002/dir.20015>
- Rooney, T., Krolikowska, E., & Bruce, H. L. (2021). Rethinking Relationship Marketing as Consumer Led and Technology Driven: Propositions for Research and Practice. *Journal of Relationship Marketing*, *20*(1), 42–61. <https://doi.org/10.1080/15332667.2020.1717276>
- Rubalcaba, L., Michel, S., Sundbo, J., Brown, S. W., & Reynoso, J. (2012). Shaping, organizing, and rethinking service innovation: A multidimensional framework. *Journal of Service Management*, *23*(5), 696–715. <https://doi.org/10.1108/09564231211269847>
- Vargo, S. L., Akaka, M. A., & Vaughan, C. M. (2017). *Conceptualizing Value : A Service-ecosystem View*. <https://doi.org/10.1177/2394964317732861>
- Vargo, S. L., & Lusch, R. F. (2008a). Service-dominant logic: Continuing the evolution. *Journal of the Academy of Marketing Science*, *36*(1), 1–10. <https://doi.org/10.1007/s11747-007-0069-6>
- Vargo, S. L., & Lusch, R. F. (2008b). Why “service”? *Journal of the Academy of Marketing Science*, *36*(1), 25–38. <https://doi.org/10.1007/s11747-007-0068-7>
- Wirtz, J., Patterson, P. G., Kunz, W. H., Gruber, T., Lu, V. N., Paluch, S., & Martins, A. (2018). Brave new world: service robots in the frontline. *Journal of Service Management*, *29*(5), 907–931. <https://doi.org/10.1108/JOSM-04-2018-0119>

Witell, L., Snyder, H., Gustafsson, A., Fombelle, P., & Kristensson, P. (2016). Defining service innovation: A review and synthesis. *Journal of Business Research*, 69(8), 2863–2872. <https://doi.org/10.1016/j.jbusres.2015.12.055>

Yin Robert, K. (2014). *Case Study Research*. Sage Publications, Inc.

Zhang, L., Pentina, I., & Fan, Y. (2021). Who do you choose? Comparing perceptions of human vs robo-advisor in the context of financial services. *Journal of Services Marketing*, 35(5), 634–646. <https://doi.org/10.1108/JSM-05-2020-0162>

ANNEXE 1

| Differentiation strategy based on service innovation experience | | | | | |
|---|---------------------------------|--|---|--|--|
| | TARGET GROUP | INFORMATION | ROBO ADVISORY EXPERIENCE | INVESTMENT ADVISORY | ACCESSIBILITY |
| CASE A | Experienced investors | Detailed information about investment ideas | Mostly rigorous and serious approach for older investors | Short term investment ideas due to Turkish economic situation and crisis | Transparency Human contact when necessary |
| | Young people | Financial literacy ideas for young investors and university students | Gaming strategy for young population | Equity based | Call center Excessive use of social media Digital Platforms Youtube LinkedIn |
| CASE B | Experienced investors | Market information | - Rigorous and serious approach with clear investment ideas for every investor profile - Providing Information | Long term investment goals and ideas | Digital platforms Youtube |
| | Savers | Information about profiles | | Clearly defined risk profiles and investment ideas | Facebook Mobile phone application |
| | Young people | Information about portfolio Information about investment ideas | | Expected return simulation, Financial planning simulation | Call center Branch serving four countries Webinars |
| CASE C | People with very little savings | Recommendations for budget optimization | Peer group comparison is the most successful differentiation strategy | Investment and saving insights | Social media Youtube |
| | Salary customers | | | Long term saving ideas for stable outcomes | |
| | Young people age 25 | Insights from the peer group | Playful and soft experience to provide recommendations | Providing financial insights for sustainable life standard | |
| | Women young professionals | spending and investment habits | | | |

PROBLEMS

| TECHNOLOGY | TRUST | CUSTOMER COMPLAINTS AND COMMENTS |
|-------------------------------|--|---|
| Need for regular improvements | Security concerns for transactions and investment actions Security concerns about private information the amount of portfolio Need for human contact for problems and complaints | Investment ideas Demand for more information about financial markets and ideas Customer complaints about the robo advisor |

ANNEXE 2

Annexe 2 A

INFORMATION ABOUT ROBO ADVISORS

| | | | | | |
|--------|------------------|-------|----------|-----------------|---------|
| Robo A | launched in 2022 | | Turkey | | |
| Robo B | Launched in 2018 | SPAIN | PORTUGAL | THE NETHERLANDS | GERMANY |
| Robo C | Launched in 2021 | | Roumania | Ukraine | Serbia |

Annexe 2B

MAJOR SOURCES OF INFORMATION

| | |
|-------------------------------------|--|
| Interviews | with the managers of roboadvisors |
| Social media posts | Videos for formations Youtube |
| News on different digital platforms | |
| Media releases | |
| Documentation | Reports, presentations |

ANNEXE 3

| FIRST LEVEL CODING | SECOND LEVEL CODING | MAIN CATEGORIES FOR SERVICE EXPERIENCE |
|--|--|---|
| SERVICE IDEAS INVESTMENT IDEAS SERVICE ADVANTAGES DIGITAL TRANSFORMATION FOCUS GROUP RESEARCH TARGET GROUPS ALL AGE GROUPS | ROBO ADVISORY SERVICE DIGITALISATION INNOVATION SERVICE DEVELOPMENT CUSTOMERS | ROBO ADVISORY SERVICE MOTIVATIONS AND OBJECTIVES |
| EDUCATION VIDEOS FOR FINANCIAL LITERACY INFORMATION FOR INVESTMENT IDEAS AND PRODUCTS SOCIAL MEDIA DIGITAL PLATFORMS HUMAN CONTACT INVESTMENT IDEAS DIFFERENTIATION SOCIAL MEDIA USE | INFORMATION GAMIFICATION HUMAN CONTACT ACCESSIBILITY TRANSPARENCY DIFFERENTIATION | SERVICE EXPERIENCE |
| PROBLEM SOLVING PROBLEMS DIGITAL PLATFORM COMMENTS CUSTOMER EXPERIENCE TRANSPARENCY NEGATIVE COMMENTS INFORMATION | TECHNICAL DEVELOPMENTS TRUST CUSTOMER DEMANDS AND COMMENTS | PROBLEMS AND CHALLENGES |