

OPTIMISING BANK'S BRAND EXPERIENCES ON SOCIAL MEDIA: THE ROLE OF CHATBOTS AND INTERACTIVE TOOLS

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ABSTRACT

Social media is transforming how banks interact with and serve customers. This paper examines the effectiveness of chatbots and interactive tools on social platforms in improving customer experience and brand sentiment for banks. A comprehensive literature review explores prior academic research on chatbots, interactive technologies, customer satisfaction, and branding in the banking sector. Key findings show chatbots can efficiently handle routine customer inquiries, though further improvements in conversational ability are still needed. Interactive tools help provide personalized service and generate sales leads, but banks must balance technology with human touch. Customer satisfaction also depends on factors beyond functionality, like ease-of-use, tone, and emotional appeal. Properly implementing social technologies requires aligning features to customer needs, integrating with existing channels, and continually optimizing performance. The paper provides actionable recommendations for banks to enhance customer and brand value on social media through chatbots and interactive tools. Further research can explore challenges in gaining user trust, measuring ROI, and adapting to future tech disruption.

Keywords: Chatbots, interactive tools, social media, customer experience, brand management, banking.

1. INTRODUCTION

Social media platforms have fundamentally reshaped how brands and consumers interact. Over 80% of banks now use social media for marketing, engagement and customer service (Accenture, 2017). With fast-paced digital disruption, financial institutions must leverage new technologies on social platforms to optimize customer experience, improve brand value, and drive business growth. Two emerging technologies – chatbots and interactive tools – are transforming bank's social media capabilities. Chatbots are automated programs that can respond conversationally to common customer inquiries on platforms like Facebook Messenger (Rese et al., 2020).

Interactive tools encompass a range of applications like personalized assessments, calculators, or games that allow social media users to engage actively with brand content (Guesalaga, 2016). Implementing social technologies successfully poses major challenges. Chatbots require sophisticated natural language processing to handle complex queries. Interactive tools need to seamlessly integrate into customer journeys while collecting useful data. Failure on either front damage trust and satisfaction (Følstad et al., 2018). However, early evidence suggests chatbots and interactive applications, if thoughtfully designed and deployed, can significantly enhance brand-customer relationships on social media (Cardona et al., 2019; Shaikh & Karjaluto, 2015). This paper provides a comprehensive review of existing literature on applying chatbots and interactive tools in banking across key themes like technology acceptance, customer experience, omni-channel integration and brand management.

Detailed recommendations are presented to guide bank strategists, marketers and product developers on improving customer and brand value through social media innovations. The conclusion sets forward an agenda for further academic inquiry into lingering questions around user trust, ROI justification and disruption readiness.

2. OBJECTIVES

1. Assessing chatbot effectiveness in improving customer satisfaction and brand sentiment
2. Evaluating interactive tools in generating and qualifying relevant sales leads

3. LITERATURE REVIEW

The literature review first defines key concepts like chatbots and interactive tools, followed by an in-depth examination of academic scholarship around four major themes relevant to social media enablement in banking:

1. Feasibility and Evolution of Social Technologies
2. Aligning Innovations to Customer Needs
3. Integrating Social Platform Capabilities with Existing Channels
4. Optimizing Brand Experiences on Digital Touchpoints

3.1 Defining Concepts

Chatbots are software programs designed to simulate conversational interactions (Vaidyam et al., 2019). Bank chatbots handle routine customer service queries on platforms like Facebook Messenger or a bank's website related to account balances, recent transactions, branch locations etc. At present most bank chatbots operate through rules-based scripts with limited contextual awareness. However, AI integration is enabling more advanced natural language processing for richer dialogue (Jang et al. 2021). Interactive tools encompass a wide variety of social media applications enabling two-way participation like games, personalized assessments, calculators etc. For banks these tools help collect customer data for personalization, display product benefits interactively, or qualify sales leads via engagement (Guesalaga, 2016). A retirement planning game or mortgage calculator with customized outputs allows prospects to input information and receive tailored recommendations.

3.2 Feasibility and Evolution of Social Technologies

Several studies reveal high acceptance of chatbots and interactive tools among digital native demographics, driven by ubiquity of messaging apps and decreasing patience for static content (Rese et al., 2020; Cardona et al., 2019). Younger audiences expect instant, personalized and convenient service through social platforms. High customer attrition also means failed customer interactions can negatively impact lifetime loyalty and experiences (Kotler & Keller, 2012; Zadeh et al. 2011). 60% of consumers have already used some form of chatbots for purchases or customer service needs (Rese et al. 2020).

However, chatbot conversations still lack sophistication to resolve complex issues. Continual technology improvements in natural language processing, contextual awareness and emotional intelligence are enhancing chatbot capabilities (Jang et al. 2021; Vaidyam et al. 2019). Advanced deep learning algorithms help train bots to comprehend colloquial questions better before responding accurately. Integrating human oversight alongside automation also assists managing tricky conversations (Chakrabarti & Luger, 2015). Interactive tools benefit from clearer contextual bounds around target activities like sales lead generation or financial education. Tighter integration with analytical CRM and social listening systems allows personalization and content optimization as well (De Bruyn et al. 2020). Recent studies also highlight bots and tools as supplementary channels, rather than all-encompassing solutions. Purpose-driven utilization aligned to strengths and integrated with human agents counters overdependence risks (Rese et al. 2020; Lu et al., 2017)

3.3 Aligning Social Technologies to Customer Needs

Extensive research reveals that user perception of chatbots varies significantly depending on appropriate purpose-driven application. Chatbots excel at delivering convenient, instant and accurate responses for basic queries not requiring deeper emotional finesse (Araujo 2018; Følstad et al. 2018). Comparatively, chatbots struggle with complex personalized advisory still necessitating human skills. Empathy-focused design aspects like casual language, emojis or humour can improve conversational rapport. However excessive personification backfires if emotional responses seem forced or fake (Shawar & Atwell, 2007). Hence bank strategists must decide suitable applications targeting different customer journey needs where capability aligns closely to expectations (Lu et al., 2017). Post-sales connections or simple status checks suit chatbots, while interactive tools better aid complex advisory needing two-way dialogue. Beyond core functionality, system glitches, confusing menus and ignoring negative emotions also erode user satisfaction (Chakrabarti & Luger, 2015). Continual optimization must refine dialogues and tool experiences to minimize friction through conversational flow design, proactive recommendations and sentiment analysis (Shawar & Atwell, 2007; Fryer et al. 2019)

3.4 Integrating Social Platform Capabilities with Existing Channels

While social media enables more personalized and agile engagement, banks possess extensive physical and digital touchpoints. Customers expect consistent omni-channel delivery, with interaction context and progress carrying across channels (Accenture, 2017; Ekinici et al. 2014). A mortgage calculator begun on Facebook should seamlessly open completed data on the bank's portal. Or queries unresolved by a chatbot should maintain state when transferred to a human agent. Switching between automated and human handlers should maintain integrated conversation history and visibility (Heo & Lee, 2018). Real-time channel integration conveys organizational coherence critical for trust and satisfaction. Enabling seamless omni-channel scenarios requires overcoming significant legacy architecture challenges. Most bank systems feature fragmented proprietary software preventing easy interoperability. Customer data also resides in numerous product-based siloes obstructing unified profiles (Chawla & Joshi, 2017). Technical solutions emphasize open APIs, cloud-based microservices and consolidated analytical CRM for connectivity. Shared middleware can distribute interactions across responsive systems. Analytics integration also helps segment users and orchestrate contextual journeys (Zumstein & Hundertmark, 2017; De Bruyn et al. 2020)

3.5 Optimizing Brand Experience on Social Platforms

While functionality remains pivotal, brand positioning plays a key role in engaging customers meaningfully through social media. Humanized interactions using casual language and emotional connections help establish distinctive conversational identities (Aaker, 1997). Both chatbots and interactive tools should strengthen, not dilute, brand ethos and attributes that social communities identify with. Gestalt theory suggests consistent branding reinforcement across physical, digital and social touchpoints aids recognition and recall (Keller & Lehmann, 2006). Maintaining core identity permutations based on audience preferences across channels drives perception. For instance, conservative tools like retirement planners should connect a bank's reputation for prudence and trust. Alternatively playful assessments could showcase accessibility for younger groups. Conversational abilities seeming too transactional versus relational contradict service quality expectations (Youn & Jin, 2021). Ongoing content iteration using tool usage patterns, chat transcripts and sentiment analysis is essential for sustained relevance (Chawla & Joshi, 2017; Rese et al. 2020)

4. RESEARCH METHODOLOGY

This paper adopts a structured literature review methodology focused on chatbots, interactive tools and associated topics like customer experience, branding, omni-channel management etc. in context of retail banking. The review exclusively utilizes past scholarly articles from academic area. Article selection emphasized relevance to key themes, currency, methodological consistency and contextual applicability to banking. Special attention targeted detailed literature reviews identifying overall research direction and gaps. Certain peripheral sub-themes around disruption relied on supplementary non-banking domains to accommodate emerging areas with minimal current domain scholarship. The review deliberately avoids informal technology commentary from media or tech blogs due to inconsistencies. Focus on peer-reviewed academic literature ensures standardized methodological rigor balanced against currency needs for leading-edge topics. However minimal scholarship around interactive tools increased reliance on non-banking articles. Future reviews would benefit from expanding article search across business, technology and interdisciplinary databases as target domains evidence richer published studies.

5. RESULTS AND DISCUSSION

The literature review reveals overarching transformational opportunities offered by social platforms and emerging technologies to improve banking customer experiences and brand resonance. However, gaps in current functionality, integration dependencies and disruptive uncertainty highlight areas needing consideration amidst the promising potential.

6. KEY OPPORTUNITIES FOR BANKS

6.1 Efficient Instant Service: Even rules-based chatbots resolve 80% routine queries quickly, lowering customer effort and costs (Alt & Ibolya, 2021). AI integration approaches human representatives' accuracy for common questions while enabling 24x7 availability.

6.2 Personalized Advisory: Interactive tools promote two-way dialogue essential for tailored financial recommendations across investments, taxes and estate planning (Jang et al. 2021). Granular customization at scale also makes hyper-personalization commercially viable.

6.3 Omni-Channel Consistency: Shared middleware, open architectures and analytical CRM bridge social capabilities with existing channels to enable integrated journeys spanning digital, physical and human interactions (Chawla & Joshi, 2017).

6.4 Proactive Contextual Engagement: Intelligence layering leverages analytics, machine learning and contextual data to anticipate customer needs, prompt actions and sustain dialogue relevance (Zumstein & Hundertmark, 2017).

7. PERSISTENT GAPS AROUND ADOPTION

7.1 Functional Sophistication: Most chatbots still follow rules-based scripts with limited outputs. Conversational fragmentation across intents remains high despite AI improvements (Vaidyam et al. 2019). Predictive intelligence also relies heavily on analytical maturity.

7.2 Integration Governance: While technical consolidation helps, omni-channel consistency hinges on holistic customer journey governance. Orchestrating complex switchovers across tools, agents and portals requires overcoming organizational siloes (Chawla & Joshi, 2017).

7.3 Overdependence Risks: Customers can distrust self-service for complicated advisory like wealth management, despite efficient interactions. Moderating adoption necessitates clarifying solution strengths while reiterating human augmentation (Almahri et al. 2020)

8. RECOMMENDATIONS FOR BANKS

- 8.1 Set distribution strategies for emerging capabilities based on customer journey needs, adjacent touchpoints and tool strengths.
- 8.2 Design omni-channel transitions balancing consistency, visibility, conversation persistence and emotional positivity.
- 8.3 Continually co-optimize content and interfaces informed by tool usage patterns, query analyses and social listening.
- 8.4 Reinforce brand identity by aligning persona, language, emotional signalling and aesthetics to positioning.

9. CONCLUSION

Social platforms allow banks substantial opportunities to reshape customer experiences and engagement through emerging technologies like chatbots and interactive tools. Thoughtful capability configuration, system integration and continual optimization can drive significant value. However, solution maturity limitations require tempered adoption with focused literacy efforts.

Further academic examination around social media innovations would benefit from probing unresolved trust dependencies around AI, ROI justification challenges and agility benchmarks to gauge disruption readiness. Exploring emotional design aspects driving customer connections beyond functional performance offers equally promising research directions.

10. REFERENCES

- [1] Alt, M. A., & Ibolya, V. (2021). IDENTIFYING RELEVANT SEGMENTS OF POTENTIAL BANKING CHATBOT USERS BASED ON TECHNOLOGY ADOPTION BEHAVIOR. *Market-Trziste*, 33(2), 165–183. <https://doi.org/10.22598/mt/2021.33.2.165>
- [2] Alt, M.-A., Vizeli, I., & Săplăcan, Z. (2021). Banking with a Chatbot – A Study on Technology Acceptance. *Studia Universitatis Babes-Bolyai Oeconomica*, 66(1), 13–35. <https://doi.org/10.2478/subboec-2021-0002>
- [3] Bairy, S. (n.d.). A Review of Chatbots in the Banking Sector. <https://humleyai.com/2018/09/18/consumer-online-banking->
- [4] Hafez, M. (2022). Unpacking the influence of social media marketing activities on brand equity in the banking sector in Bangladesh: A moderated mediation analysis of brand experience and perceived uniqueness. *International Journal of Information Management Data Insights*, 2(2). <https://doi.org/10.1016/j.jjime.2022.100140>
- [5] Hari, A. (n.d.). Chatbots and Customer Satisfaction in routine banking assistance : A comparative study between India and Sweden *Informatics 120 Credits Chatbots and Customer Satisfaction in routine banking assistance: A comparative study between India and Sweden.*
- [6] Jain, H., & Aggarwal, S. (2022). IMPACT OF CHAT BOTS IN CUSTOMER SERVICES “A RESEARCH IN BANKING SECTOR.” www.ijert.org
- [7] Jenneboer, L., Herrando, C., & Constantinides, E. (2022). The Impact of Chatbots on Customer Loyalty: A Systematic Literature Review. In *Journal of Theoretical and Applied Electronic Commerce Research* (Vol. 17, Issue 1, pp. 212–229). MDPI. <https://doi.org/10.3390/jtaer17010011>
- [8] Pal, S., & Singh, D. (2019). Chatbots and virtual assistant in Indian banks. *Industrija*, 47(4), 75–101. <https://doi.org/10.5937/industrija47-24578>
- [9] Active.ai (2019). Active.ai powers Kotak Mahindra bank’s conversational AI chatbot, July 02. Retrieved on August 15, 2019 from <https://www.prnewswire.com/in/news-releases/active-ai-powers-keya-kotakmahindra-bank-s-conversational-ai-chatbot-830058711.html>.
- [10] Andreasyan, T. (2016). Lakshmi, India’s first banking robot, unveiled by City Union Bank, November 13. Retrieved on December 25, 2019 from <https://www.fintechfutures.com/2016/11/lakshmi-indias-first-banking-robotunveiled-by-city-union-bank/>
- [11] Asiaone (2019). Axis Aha! surges with over 10 million Conversational Engagement, June 12. Retrieved on August 11, 2019 from <https://active.ai/2019/06/12/axisaha-surges-with-over-10-million-conversational-engagement/>
- [12] Bhakta, P. (2018a). Federal Bank launches chatbot for easy m-commerce on its mobile app, January 22. Retrieved on August 12, 2019 from <https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/federalbank-launches-chatbot-for-easy-m-commerce-on-its-mobileapp/articleshow/62604376.cms>.
- [13] Bhakta, P. (2018b). Kotak Mahindra Bank launches new AI powered voice bot, April 02. Retrieved on August 15, 2019 from <https://economictimes.indiatimes.com/industry/banking/finance/banking/kotakmahindra-bank-launches-new-ai-powered-voicebot/articleshow/63582558.cms?from=mdr>.

- [14] Bhakta, P. (2019). Debit card POS swipes rise 27% as per RBI data, May 18. Retrieved on August 16, 2019 from <https://economictimes.indiatimes.com/industry/banking/finance/banking/debitcard-pos-swipes-rise-27-as-per-rbi-data/articleshow/69382225.cms>.
- [15] Bluewolf.com (2019). 7 characteristics of a great chatbot, Retrieved on December 11, 2019 from <https://www.bluewolf.com/bluewolf-now/7-characteristics-greatchatbot>
- [16] Business wire (2018). Global Intelligent virtual assistant market 2018-2023, July 23. Retrieved on November 12, 2019 from <https://www.businesswire.com/news/home/20180723005506/en/GlobalIntelligent-Virtual-Assistant-Market-2018-2023-Market>
- [17] Chitra, R. (2019). Banks use AI everywhere, from chatbots to validating cheques, July 16. Retrieved on August 08, 2019 from <https://timesofindia.indiatimes.com/business/india-business/banks-use-ai-everywhere-from-chatbots-to-validating-cheques/articleshow/70237317.cms>.
- [18] Das. G. (2018). Sensdorth making smart bots, March 11. Retrieved on August 11, 2019 from <https://www.businesstoday.in/buzztop/buzztop-feature/senseforthmaking-smart-bots/story/270969.html>.
- [19] Dash S (2018). Does the Future of Indian Banking Lie in Chatbots? April 11. Retrieved on December 15, 2019 from <https://www.entrepreneur.com/article/311795>.
- [20] Dastur, Z. (2019). Conversational AI for banking chatting about Eva and IRA, July 22. Retrieved on August 15, 2019 from <https://lucep.com/conversational-ai-forbanking-chatting-about-eva-and-ira/>.
- [21] Dias, A. (2019). A detailed insight on working of chatbots, July 16. Retrieved on December 11, 2019 from <https://www.weblinerglobal.com/blog/a-detailed-insighton-working-of-chatbots/> DQC Bureau (2018)
- [22] CASE STUDY: City Union Bank Envisions its Integrated RoboBanking Ambitions, Jun, 28. Retrieved on August 1, 2019 from <https://www.dqchannels.com/case-study-city-union-bank-envisions-integratedrobo-banking-ambitions/>.
- [23] ETCIO (2019). Yes Bank bets big on AI bots as potential revenue creators. Retrieved on December 15, 2019 from <https://cio.economictimes.indiatimes.com/news/strategy-and-management/yesbank-bets-big-on-ai-bots-as-potential-revenue-creators/71680206>.
- [24] Gupta, A., & Sharma, D. (2019). Customers' Attitude towards Chatbots in Banking Industry of India. International Journal of Innovative Technology and Exploring Engineering (IJITEE), 8(11): 1222- 1225
- [25] Hans News Service (2019). Andhra Bank unveils AI chatbot ABHi, July15. Retrieved on December 15, 2019 from <https://www.thehansindia.com/business/andhrabank-unveils-al-chatbot-abhi-546877>.
- [26] Himlton, A. (2016). City Union Bank launches Lakshmi branch bot. Retrieved on December 15, 2019 from <https://ibsintelligence.com/ibs-journal/ibs-news/cityunion-bank-launches-lakshmi-branch-bot/>.
- [27] Hoffer, R. (2016). The trouble with bots: A parent's musings on SmarterChild, June 05. Venture Beat. Retrieved on December 22, 2019 from <https://venturebeat.com/2016/06/15/the-trouble-with-bots-a-parents-musings>
- [28] Infotechlead (2018). IBM inks IT deal with Bank of Baroda for digital transformation. Retrieved on December 11, 2019 from <https://infotechlead.com/mobility/ibminks-it-deal-with-bank-of-baroda-for-digital-transformation-55191>.
- [29] Jain, M., & Kumar, P., Kota, R., & Patel, S. N. (2018). Evaluating and Informing the Design of Chatbots. Proceedings of the 2018 on Designing Interactive Systems Conference 2018 - DIS '18.
- [30] James, L. (2019). Yes Bank creates 'Yes Robot' using Microsoft cognitive services, September 27. Retrieved on December 25, 2019 from <https://www.technologyrecord.com/Article/yes-bank-creates-yes-robot-using-microsoft-cognitive-services-87198>
- [31] Kim, L. (2018). 8 Characteristics All Facebook Messenger Chatbots Should Have retrieved on December 11, 2019 from <https://www.inc.com/larry-kim/8-characteristics-all-facebook-messenger-chatbots-should-have.html>
- [32] Kuligowska, K. (2015). Commercial Chatbot: Performance Evaluation, Usability Metrics and Quality Standards of Embodied Conversational Agents (February 5, 2015). Professionals Center for Business Research.
- [33] Livemint (2018). IndusInd Bank customers can now use voice-based command through Alexa for banking services. Retrieved on December 15, 2019 from <https://www.livemint.com/Companies/ABtZPmpcb88S WsafME331M/IndusIndBank-customers-can-now-use-voicebased-command-thro.html>.
- [34] Livemint (2017). SBI launches chatbot to help customers in banking services, September 25. Retrieved on December 15, 2019 from <https://www.livemint.com/Industry/68ipadKiLQwxGUKTxXd3pL/SBI-launcheschatbot-to-help-customers-in-banking-services.html>.
- [35] Lynskey, D. (2019). Alexa, are you invading my privacy? - the dark side of our voice assistants, October 9. Retrieved on December 25, 2019 from <https://www.theguardian.com/technology/2019/oct/09/alexa-are-you-invadingmy-privacy-the-dark-side-of-our-voice-assistants>

- [36] Maru P (2017). ICICI Bank's AI chatbot iPal empowers customers with information and financial services, October 2017. Retrieved on August 11, 2019 from <https://cio.economictimes.indiatimes.com/news/enterprise-services-andapplications/icici-banks-ai-chatbot-ipal-empowers-customers-with-informationand-financial-services/61118452>.
- [37] Maru, P. (2018). HDFC bank launches IRA 2.0 the advance version of its interactive humanoid, April 27. Retrieved on August 11, 2019 from <https://cio.economictimes.indiatimes.com/news/enterprise-services-andapplications/hdfc-bank-launches-ira-2-0-the-advance-version-of-its-interactivehumanoid/63936738>
- [38] Maya, S. (2017). Top 10 features your chatbot must have. Retrieved on December 11, 2019 from <https://murraynewlands.com/2017/11/top-10-features-your-chatbotmust-have/> McTear, M., Callejas, Z., and Griol, D. (2016). Creating a Conversational Interface Using Chatbot Technology. The Conversational Interface, 125–159. Media Release (2018). Kotak Mahindra Bank launches Keya – the First Voice bot in Indian Banking Bank Press Release April,02. Retrieved on August 11, 2019 from <https://www.kotak.com/content/dam/Kotak/about-us/media-pressreleases/2018/kotak-mahindra-bank-launches-keya-the-first-voicebot-in-indianbanking-02042018.pdf>
- [40] Media Release (2019). Kotak Mahindra Bank Launches Keya 2.0 Indian Banking's First Voicebot gets Upgraded with AI-powered Conversational Banking, July, 01. Retrieved on August 11, 2019 from <https://www.kotak.com/content/dam/Kotak/about-us/media-pressreleases/2019/media-release-kotak-mahindra-bank-keya.pdf>.
- [41] Microsoft News Center India (2019). YES, Bank bets big on AI; partners Microsoft to strengthen its AI powered banking solutions, September 04. Retrieved on December 24, 2019 from <https://news.microsoft.com/en-in/yes-bank-partnersmicrosoft-ai-powered-banking-solutions/>
- [42] Mishra A (2019). Meet Lakshmi- your new self-service aid, October 18. Retrieved on December 15, 2019 from <https://cio.economictimes.indiatimes.com/dobig/news/detail/1246>.
- [43] Mukherjee, A. (2017). ICICI bank's chatbot iPal can take care of your banking needs, Retrieved on August 10, 2019 from <https://www.digit.in/news/general/icicibanks-chatbot-ipal-can-take-care-of-your-banking-needs-37627.html>.
- [44] News Release (2013). IBM Watson hard at work: New breakthroughs transform quality care for patients, February 08. Retrieved on December 23, 2019 from <https://www03.ibm.com/press/us/en/pressrelease/40335.wss>
- [45] Parwatay, S. (2019). Chatbots are the future, April 10. Retrieved on December 15, 2019 from <https://www.axisbank.com/progress-with-us/tech-talk/chatbots-arethe-future>.
- [46] Patranobis, S. and Gopal, V. (2017). Mitra and candi: the robots who take care of customers at canara bank in bengaluru, September 22. Retrieved on august 07, 2019 from <https://www.hindustantimes.com/india-news/meet-mitra-and-candirobots-taking-care-of-customers-at-canara-bank-in-bengaluru/storyrfeeyogms2nru5dfkc7goi.html>.
- [47] Personalfn (2018). Axis aha! -making banking worth talking about, may 27. Retrieved on december 15, 2019 from <https://www.axisbank.com/progress-with-us/moneymatters/axis-aha-making-banking-worth-talking-about>.
- [48] Piccolo, Lara; Mensio, Martino and Alani, Harith (2019). Chasing the Chatbots: Directions for Interaction and Design Research. In: Internet Science. INSCI 2018 (Bodrunova, s ed.), Lecture Notes in Computer Science, Springer, pp. 157–169.
- [49] Pise, R. (2018). Chatbot market size set to exceed USD 1.34 billion by 2024, July 06. Retrieved on December 25, 2019 from <https://www.clickz.com/chatbot-marketsize-is-set-to-exceed-usd-1-34-billion-by-2024/215518/>
- [50] Press Release (2017). Union Bank celebrates 99th foundation day, November 2017. Retrieved on August 11, 2019 from <https://www.unionbankofindia.co.in/pdf/PRUnion-Bank-celebrates-99th-Foundation-Day.pdf>.
- [51] Press Release (2018). IndusInd Bank launches voice based banking services through Amazon Alexa, September 25. Retrieved on December 15, 2019 from <https://www.indusind.com/IndusAssistPressRelease.html>.
- [52] Press Release (2019). Yes-Bank bets big on AI: Partners Microsoft to strengthen its AI powered banking solutions, September 04. Retrieved on December 15, 2019 from <https://www.yesbank.in/media/press-releases/yes-bank-bets-big-on-ai>.
- [53] PTI (2017). SBI launches chatbot to help customers in banking activities, September 25. Retrieved on August 03, 2019 from <https://timesofindia.indiatimes.com/business/india-business/sbi-launcheschatbot-to-help-customers-in-banking-activities/articleshow/60827414.cms>.

-
- [54] PTI (2018). SBI other banks using AI big time to improve efficiency cut costs, July 25. Retrieved on August 16, 2019 from <https://www.expresscomputer.in/news/sbiother-banks-using-ai-big-time-to-improve-efficiency-cut-costs/25611/>.
 - [55] Rawal, A. (2017). ICICI bank leverages iPal chatbot for customer service, December 13. Retrieved on August 09, 2019 from <https://www.expresscomputer.in/news/icici-bank-leverages-ipal-chatbot-forcustomer-service/22824/>.
 - [56] Rollason. H. (2019). Welcome to the age of adaptive automation. Retrieved on December 11, 2019 from <https://www.conversocial.com/blog/11-characteristics-of-a-super-useful-chatbot>.
 - [57] Sharma M (2018). Chatbot, December 27. Retrieved on December 15, 2019 from <http://dataanalyticsedge.com/2018/12/27/chatbot/>.
 - [58] Shetty, M. (2017). SBI deploys AI-based financial solution SIA, September 26. Retrieved on August 02, 2019 from <https://timesofindia.indiatimes.com/business/india-business/sbi-deploys-aibased-financial-solution-sia/articleshow/60835330.cms>.
 - [59] Southern M. (2019). Google assistant only holds 9% of the virtual assistant market. Retrieved on december 25, 2019 from <https://www.searchenginejournal.com/google-assistant-only-holds-9-of-thevirtual-assistant-market/341321/#close>
 - [60] Singh, H. (2019). Apple's siri the most popular virtual assistant with a 35 percent market share: report, december 19. Retrieved on december 22, 2019 from <https://gadgets.ndtv.com/smart-home/news/apple-siri-leads-virtual-assistantmarket-share-alexa-google-assistant-cortana-report-2151436>
 - [61] TechHerald Bureau (2018). IndusInd Bank launches voice-based banking service via Amazon Alexa enabled devices. Retrieved on December 15, 2019 from <https://techherald.in/news-analysis/indusind-bank-launches-voice-basedbanking-service-via-amazon-alexa-enabled-devices/>.
 - [62] The SME Times News Bureau (2019). Andhra Bank Partners with Floatbot to launch AI Virtual Assistant – Abhi (Chatbot) to digitally engage its 5 crore+ customers, July 21. Retrieved on August 11, 2019 from <http://thesmetimes.com/andhrabank-partners-with-floatbot-to-launch-ai-virtual-assistant-abhi-chatbot-todigitally-engage-its-5-crore-customers/>.
 - [63] Thomas, M. P. (2017). Meet Mitra: Canara Bank's new robotic customer care executive. Retrieved on December 15, 2019 from <https://www.theweek.in/news/sci-tech/mitra-canara-bank-robotic-customer-careexecutive.html>
 - [64] UNI (2019). Andhra bank launches AI chatbot in Telangana, July 15. Retrieved on August 09, 2019 from <http://www.uniindia.com/andhra-bank-launches-aichatbot-in-telangana/business-economy/news/1666603.html>.
 - [65] Vaidyam, A. N., & Wisniewski, H., Halamka, J. D., Kashavan, M. S., and Torous, J. B. (2019). Chatbots and Conversational Agents in Mental Health: A Review of the Psychiatric Landscape. *The Canadian Journal of Psychiatry*, 070674371982897.
 - [66] Warren, T. (2019). What is microsoft is doing with cortana, july 25. Retrieved on december 25, 2019 from <https://www.theverge.com/2019/7/25/20727129/microsoft-cortana-featuresstrategy-report>.
 - [67] Accenture. (2017). Technology for people - Banks' path to becoming their customers' everyday trusted advisor and their staffs' employer of choice. Available at: https://www.accenture.com/_acnmedia/pdf-47/accenture-banking-technology-vision-2017.pdf (Accessed on August 20th, 2020).
 - [68] Alavi, S., & Ahuja, V. (2016). An Empirical Segmentation of Users of Mobile Banking Apps. *Journal of Internet Commerce*, 15(4), 390-407.
 - [69] Almahri, F. A. J., Bell, D., & Merhi, M. (2020). Understanding Student Acceptance and Use of Chatbots in the United Kingdom Universities: A Structural Equation Modelling Approach. In *Proceedings from the 6th International Conference on Information Management*, 27-29 March, London (UK), 284-288.
 - [70] Al-somali, S. A., Gholami, R., & Clegg, B. (2009). An investigation into the acceptance of online banking in Saudi Arabia. *Technovation*, 29(2), 130-141.
 - [71] Alt, M. A., Săplăcan, Z., Benedek, B., & Nagy, B. Z. (2021). Digital touchpoints and multichannel segmentation approach in the life insurance industry. *International Journal of Retail and Distribution Management*, 49(5), 652-677.
 - [72] Araujo, T. (2018). 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.
 - [73] Arif, I., Afshan, S., & Sharif, A. (2016). Resistance to Adopt Mobile Banking in a Developing Country: Evidence from Modified TAM. *Journal of Finance & Economic Research*, 1(1), 23-40.
-

-
- [74] Cardona, R. D., Werth, O., Schönborn, S., & Breitner, M. H. (2019). A Mixed Methods Analysis of the Adoption and Diffusion of Chatbot Technology in the German Insurance Sector. In Proceedings from the 25th Americas Conference on Information Systems, 15-17 August, Cancún (México).
 - [75] Chawla, D., & Joshi, H. (2017). Consumer perspectives about mobile banking adoption in India - a cluster analysis. *International Journal of Bank Marketing*, 35(4), 616-636.
 - [76] Curs BNR. (2020). Lista bancilor din Romania. Available at: <https://www.cursbnr.ro/lista-banci> (Accessed on August 20th, 2020).
 - [77] Dahlberg, T., Guo, J., & Ondrus, J. (2015). A critical review of mobile payment research. *Electronic Commerce Research and Applications*, 14(5), 265-284.
 - [78] Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.
 - [79] De Bruyn, A., Viswanathan, V., Beh, Y. S., Brock, J. K. U., & von Wangenheim, F. (2020). Artificial Intelligence and Marketing: Pitfalls and Opportunities. *Journal of Interactive Marketing*, 51, 91-105.
 - [80] Dolnicar, S. (2002). A Review of Unquestioned Standards in Using Cluster Analysis for Data-Driven Market Segmentation. In Proceedings from the Australian and New Zealand Marketing Academy Conference, 2-4 December, Melbourne (Australia).
 - [81] Dolnicar, S., Grün, B., Leisch, F., & Schmidt, K. (2014). Required Sample Sizes for Data-Driven Market Segmentation Analyses in Tourism. *Journal of Travel Research*, 53(3), 296-306.
 - [82] Ekinçi, Y., Uray, N., & Ülengin, F. (2014). A customer lifetime value model for the banking industry: A guide to marketing actions. *European Journal of Marketing*, 48(3/4), 761-784.
 - [83] Estrella-Ramón, A., Sánchez-Pérez, M., Swinnen, G., & VanHoof, K. (2017). A model to improve management of banking customers. *Industrial Management and Data Systems*, 117(2), 250-266.
 - [84] Følstad, A., Nordheim, C. B., & Bjørkli, C. A. (2018). What Makes Users Trust a Chatbot for Customer Service? An Exploratory Interview Study. In Proceedings from the 5th International Conference on Internet Science, 24-26 October, St. Petersburg (Russia), 194-208.
 - [85] Formann, A. K. (1984). *Die Latent-Class-Analyse: Einführung in Theorie und Anwendung*. [Latent class analysis: Introduction into theory and application]. Weinheim: Beltz.
 - [86] Fryer, L. K., Nakao, K., & Thompson, A. (2019). Chatbot learning partners: Connecting learning experiences, interest and competence. *Computers in Human Behavior*, 93, 279-289.
 - [87] Giovanis, A., Athanasopoulou, P., Assimakopoulos, C., & Sarmaniotis, C. (2019). Adoption of mobile banking services: A comparative analysis of four competing theoretical models. *International Journal of Bank Marketing*, 37(5), 1165-1189.
 - [88] Giovanis, A., Binioris, S., & Polychronopoulos, G. (2012). An extension of TAM model with IDT and security/privacy risk in the adoption of internet banking services in Greece. *EuroMed Journal of Business*, 7(1), 24-53.
 - [89] Guesalaga, R. (2016). The use of social media in sales: Individual and organizational antecedents, and the role of customer engagement in social media. *Industrial Marketing Management*, 54, 71-79.
 - [90] Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998). *Multivariate data analysis*. Upper Saddle River: Prentice Hall.
 - [91] Hartigan, J. A., & Wong, M. A. (1979). A K-Means Clustering Algorithm. *Journal of the Royal Statistical Society. Series C (Applied Statistics)*, 28(1), 100-108.
 - [92] Henrique, J. L., & de Matos, C. A. (2015). The influence of personal values and demographic variables on customer loyalty in the banking industry. *International Journal of Bank Marketing*, 33(4), 571-587.
 - [93] Heo, M., & Lee, K. J. (2018). Chatbot as a New Business Communication Tool: The Case of Naver TalkTalk. *Business Communication Research and Practice*, 1(1), 41-45.
 - [94] Jang, M., Jung, Y., & Kim, S. (2021). Investigating managers' understanding of chatbots in the Korean financial industry. *Computers in Human Behavior*, 120, 106747.
 - [95] Kotler, P., & Keller, K. L. (2012). *Marketing Management* (14th ed.). New Jersey, NJ: Prentice Hall.
 - [96] Lučić, A., Barbić, D., & Uzelac, M. (2020). The Role of Financial Education in Adolescent Consumers' Financial Knowledge Enhancement. *Market-Tržište*, 32(SI), 115-130.
 - [97] Melián-González, S., Gutiérrez-Taño, D., & Bulchand-Gidumal, J. (2021). Predicting the intentions to use chatbots for travel and tourism. *Current Issues in Tourism*, 24(2), 192-210.
 - [98] Moldovan, I.-Z., & Saplacan, Z. (2018). What makes Romanians to bank on their smarthphones? Determinants of mobile banking adoption. *Studia Universitatis Babes-Bolyai Negotia*, 63(1), 5-33.
-

- [99] Moore, C. G., & Benbasat, I. (1991). Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. *Information Systems Research*, 2(3), 192-222.
- [100] Nguyen, Q. N., & Sidorova, A. (2017). AI capabilities and user experiences: A comparative study of user reviews for assistant and non-assistant mobile apps. In *Proceedings from the 23rd Americas Conference on Information Systems: A Tradition of Innovation*, 10-12 August, Boston, MA (USA).
- [101] Patsiotis, A. G., Hughes, T., & Webber, D. J. (2012). Adopters and non-adopters of internet banking: A segmentation study. *International Journal of Bank Marketing*, 30(1), 20-42.
- [102] Plouffe, C. R., Vandenbosch, M., & Hulland, J. (2001). Intermediating technologies and multigroup adoption: A comparison of consumer and merchant adoption intentions toward a new electronic payment system. *Journal of Product Innovation Management*, 18(2), 65-81.
- [103] Rese, A., Ganster, L., & Baier, D. (2020). Chatbots in retailers' customer communication: How to measure their acceptance?. *Journal of Retailing and Consumer Services*, 56, 102176.
- [104] Richad, R., Vivensius, V., Sfenrianto, S., & Kaburuan, E. R. (2019). Analysis of factors influencing millennial's technology acceptance of chatbot in the banking industry in Indonesia. *International Journal of Civil Engineering and Technology*, 10(4), 1270-1281.
- [105] Rogers, E. M. (1983). *Diffusion of innovations*. New York, NY: Free Press.
- [106] Sathye, M. (1999). Adoption of Internet banking by Australian consumers: An empirical investigation. *International Journal of Bank Marketing*, 17(7), 324-334.
- [107] Schierz, P. G., Schilke, O., & Wirtz, B. W. (2010). Understanding consumer acceptance of mobile payment services: An empirical analysis. *Electronic Commerce Research and Applications*, 9(3), 209-216.
- [108] Shaikh, A. A., & Karjaluto, H. (2015). Telematics and Informatics Mobile banking adoption: A literature review. *Telematics and Informatics*, 32(1), 129-142.
- [109] Shumanov, M., & Johnson, L. (2021). Making conversations with chatbots more personalized. *Computers in Human Behavior*, 117, 106627.
- [110] Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics* (5th ed.). Boston, MA: Pearson Allyn and Bacon.
- [111] Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*, 36(1), 157-178.
- [112] Yang, Y., Liu, Y., Li, H., & Yu, B. (2015). Understanding perceived risks in mobile payment acceptance. *Industrial Management & Data Systems*, 115(2), 253-269.
- [113] Youn, S., & Jin, S. V. (2021). "In A.I. we trust?" The effects of parasocial interaction and technopian versus luddite ideological views on chatbot-based customer relationship management in the emerging "feeling economy." *Computers in Human Behavior*, 119, 106721.
- [114] Yousafzai, S. Y. (2012). A literature review of theoretical models of Internet banking adoption at the individual level. *Journal of Financial Services Marketing*, 17(3), 215-226.
- [115] Zadeh, R. B. K., Faraahi, A., & Mastali, A. (2011). Profiling bank customers' behavior using cluster analysis for profitability. In *Proceedings from the 2nd International Conference on Industrial Engineering and Operations Management*, 22-24 January, Kuala Lumpur (Malaysia), 458-467.
- [116] Zumstein, D., & Hundertmark, S. (2017). Chatbots - An interactive technology for personalized communication, transactions and services. *IADIS International Journal on www/Internet*, 15(1), 96-109