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International Journal of Innovation Studies

A SYSTEMATIC LITERATURE REVIEW ON CONSUMER ADOPTION OF NEW INNOVATIVE TECHNOLOGIES LIKE IOT AND AI USING SPIDER SEARCH:

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Abstract

The consumer markets are undergoing a substantial transformation due to the swift advancements in technology in the present digital era. The exponential growth of smart devices, the Internet of Things (IoT), artificial intelligence (AI), and other emerging technologies is not only transforming the way customers interact with products and services, but also redefining market dynamics and company strategy. Advancements in consumer technology have resulted in the creation of novel products and services that provide improved functionality, convenience, and personalization options. The implementation of these technical innovations has enabled consumers to engage in a diverse array of activities, including as shopping, banking, health monitoring, and home automation, with remarkable convenience and efficiency. The motivation for undertaking this systematic literature review (SLR) arises from the necessity to comprehend the diverse effects of consumer technology and innovation on market behaviors and customer experiences. Although many research have examined different aspects of consumer technology, there is a dearth of a comprehensive synthesis that integrates existing knowledge and reveals overarching patterns and insights into how consumers are influenced in their adoption of technology. The aim of this study is to perform a Systematic Literature Review to gather, assess, and merge existing research. The objective is to provide a comprehensive understanding of how technological improvements are impacting customer behavior. In addition, we utilized the SPIDER (Sample, Phenomenon of Interest, Design, Evaluation, and Research type) tool to establish the inclusion criteria. Our approach contributes novel insights to prior systematic reviews about this subject. The text presents a thorough framework of the various aspects that impact customers' acceptance of IOT and AI. The systematic literature review conducted using the SPIDER tool, encompassing 268 articles, provides a comprehensive understanding of consumer adoption of innovative technologies such as the Internet of Things (IoT) and Artificial Intelligence (AI).

Keywords: Consumer Adoption, Internet of Things, Artificial Intelligence, Technology, SPIDER search tool

Introduction:

Technology and innovation are crucial in consumer markets as they stimulate demand, enhance customer experiences, and foster market competition. Rayna, T., & Striukova, L. (2021). Organizations can utilize advanced technologies like artificial intelligence, augmented reality, and big data analytics to offer tailored, efficient, and engaging experiences, which ultimately improve consumer satisfaction and loyalty. Walsh, P. P., Murphy, E., & Horan, D. (2020). These

advancements also enable organizations to make decisions based on data, improving their operations and marketing strategies to more effectively fulfill the requirements of consumers. Amoah, J., & Jibril, A. B. (2020). Moreover, technological progress fosters sustainability through enhancing resource efficiency and mitigating environmental damage. By utilizing these advancements, businesses not only obtain a competitive advantage but also contribute to the expansion of the economy and adjust to the requirements of a globalized market. Du, S., & Xie, C. (2021

Literature Review:

The vision is founded upon the acknowledgment of the prevailing worldwide patterns. The rate of technological, economic, and social progress has been increasing, causing businesses and communities to face difficulties in keeping up with the rapid pace. The rapid advancement of information and communications technology (ICT) in recent years has resulted in an unparalleled surge of digital data and the development and expansion of cyberspace. Thong, J. Y., Venkatesh, V., Xu, X., Hong, S. J., & Tam, K. Y. (2011). The rapid pace of globalization has extended commercial and social activity outside national boundaries, and has also transformed the process of generating new ideas for innovation. It is widely acknowledged that novel concepts are derived from various sources and have a key role in gaining a competitive edge. Fukuda, K. (2020). The process of formulating an innovation strategy necessitates thorough evaluations of prospective technology advancements, consumers' attitudes towards innovative products, and the sustainability impact of innovative activities. Innovation strategy is considered a component of strategic management, and its execution is contingent upon intra-organizational elements. Tidd, J., & Bessant, J. R. (2020).

Empirical evidence on the innovation capability in small business context has elaborated into two paths of research: the one studying the determinants of innovation capability, and the one studying the consequences on innovation capability. Kamboj, S. and Sharma, M., 2023. Thus, small business innovation has been considered either as a process or as an outcome. Saunila, M. (2020). The circular economy has developed as a viable alternative to the linear system, which is currently facing physical constraints. In order to adopt a circular economy, corporations must not only possess knowledge of, but also actively participate in, more environmentally friendly practices. In order to undergo such a change, organizations need to reassess and revolutionize their business models and the methods by which they provide value to their clients, all while taking into account environmental and social aspects. Suchek, N., Fernandes, C. I., Kraus, S., Filser, M., & Sjögrén, H. (2021).

Artificial intelligence (AI) is a specialized area of computer science that involves creating computer programs and robots that can accomplish activities that people excel at, such as interpreting natural language, comprehending voice, and recognizing images. Anayat, S., Rasool, G. and Pathania, A., 2023. Machine learning originated in the mid-twentieth century as a branch of artificial intelligence (AI), offering a fresh approach to developing AI systems by taking inspiration from the conceptual workings of the human brain. Raschka, S., Patterson, J., & Nolet, C. (2020). There are several theoretical and managerial implications and contributions that can be drawn from this research, which can be beneficial for researchers and professionals in the field of IoT, such as developers, retailers, marketers, and other experts in IoT. Kumar, A., Dhingra, S, 2023. The findings of this study suggest that consumers perceive the Internet of Things (IoT) as useful in relation to the Theory of Planned Behavior (TPB) and

Technology Acceptance Model (TAM). Consumers hold positive attitudes towards IoT due to its advancements in various aspects of their daily lives, such as transportation efficiency, easy access to healthcare and wellness, socialization, and job productivity. These positive perceptions are not influenced by the ease-of-use of IoT, consumers' perceived behavior control, or the opinions of others. Negm, E. (2023). Therefore, incorporating these new technologies into the formal sector is a significant advancement in the process of reengineering. However, it is crucial to carefully assess and consider the important socio-psychological consequences that these tools may have throughout the lifespan of the technology. Rajaee, M., Hoseini, S. M., &Malekmohammadi, I. (2019). In this instance, the use of appropriate technological acceptability and sociotechnical models is essential. It is crucial for organizations, whether public or private, to proritize the implementation of technology acceptance and sociotechnical models. These models can help organizations adapt to the rapidly changing technology landscape and take advantage of their benefits in the production environment. Nwankwo, W., Adetunji, C. (2021).

IoT was the predominant technology utilized in practical applications for the smart city and energy sectors, while AI was predominantly employed in the energy sector. The adoption of blockchain technology has been somewhat sluggish in comparison to the rapid acceptance of artificial intelligence (AI) and Internet of Things (IoT). However, it holds great potential for use in supply chain applications. Wang, K., Zhao, Y., Gangadhari, R. K.(2021). Consumers and businesses can choose to embrace a broader array of automated technology-technology interactions. Nevertheless, it is crucial for them to take into account the expected level of interaction quality, financial implications, and any risks that come with autonomous interactions operating without human oversight prior to making such judgments. Yadav, M. S., & Pavlou, P. A. (2020). To comprehend the cause-and-effect relationship of the three viewpoints in our research, it is recommended that marketing experts, professionals, and IT managers acknowledge the significance of artificial intelligence (AI) technologies in enhancing consumer behavior (CB) through knowledge-based activities. They should then utilize this newfound information to enhance their products and services. Olan, F., Suklan, J., (2021). Digital technologies have permanently become a part of human life, exerting a significant influence on numerous domains of human activities and playing a crucial role in society. Frequently, a man is unaware of their existence, unable to recognize them, or even summon them. The reason of uncertainty is in the processes that will lead to the virtualization of behavior, attitudes, and decisions, especially those related to consumer space. Consumers are guided by a multitude of motives and objectives when it comes to seeing new technologies and understanding their function in life. Kaczorowska-Spychalska, D. (2018).

Research Questions:

- What are the demographic and socio-economic attributes of consumers that embrace IoT and AI technologies?
- What is the perception and user experience of consumers about the usefulness, advantages, and difficulties of IoT and AI technologies in their everyday lives?
- Which outcomes and metrics are employed to evaluate the acceptance of IoT and AI technologies by consumers, including elements such as user pleasure, perceived value, usability, and privacy apprehensions?

- What sorts of research, such as qualitative, quantitative, and mixed-methods, have been carried out on the consumer adoption of IoT and AI technologies?
- What are the primary findings and patterns seen in these studies?

Objectives of the study:

1. **Sample (S):** Analyze the several demographic variables that impact consumer acceptance of IoT and AI technologies. Feizi, A., & Soheili, A. (2021).
2. **Phenomenon of Interest (PI):** Explore consumer attitudes, experiences, and perceptions on the usability, advantages, and obstacles of Internet of Things (IoT) and Artificial Intelligence (AI) technologies. Kumar, S., Veer, K., & Kumar, S. (2022).
3. **Design (D):** Evaluate and analyze the research methods and methodologies employed in studies that investigate the adoption of Internet of Things (IoT) and Artificial Intelligence (AI) technologies by consumers. Korstjens, I., & Moser, A. (2017).
4. **Evaluation (E):** Assess the results and metrics associated with the implementation of IoT and AI, including user contentment, frequency of use, perceived worth, and concerns around privacy. Larsen, M. H., Hagen, K. B., (2019).
5. **Research Type (R):** Consolidate results from many research methodologies (including qualitative, quantitative, and mixed-methods) to offer a complete analysis of the aspects that impact consumer adoption of IoT and AI. Eriksen, M. B., & Frandsen, T. F. (2018).

Research Methodology:

The study of consumer adoption of IoT and AI technologies employs several research designs and methodology. These approaches include qualitative methods such as interviews and case studies. For instance, quantitative methods allow for large-scale data collection and statistical analysis, but may lack depth and context. Lee, H., Xu, Y. and Porterfield, A. (2022). On the other hand, qualitative methods provide rich insights and understanding, but may be limited by subjectivity and small sample sizes. Additional models, such as sample, phenomena of interest, design, evaluation, and Research type (SPIDER), are present. Cooke, A., Smith, D., (2012).

Fig 1: Kumar, S., Veer, K., & Kumar, S. (2022).

Table1 1: SPIDER KEYWORDS and STINGS:

SPIDER	Keywords	Boolean Strings	No. of Studies
S- Sample	"consumer", "user", "individual", "customer", "adopter", "household",	("consumer" OR "user" OR "individual" OR "customer" OR "adopter" OR "household")	63
PI – Phenomenon of Interest	"adoption", "acceptance", "use", "perception", "experience",	("adoption" OR "acceptance" OR "use" OR "perception" OR "experience" OR	58

	"behavior", "attitude", "engagement"	"behavior" OR "attitude" OR "engagement")	
D – Design	"qualitative", "interview", "focus group", "case study", "ethnography", "survey", "mixed-methods"	("qualitative" OR "interview" OR "focus group" OR "case study" OR "ethnography" OR "survey" OR "mixed-methods")	47
E – Evaluation	"outcome", "impact", "effect", "satisfaction", "usability", "privacy concern", "trust", "benefit", "challenge"	("outcome" OR "impact" OR "effect" OR "satisfaction" OR "usability" OR "privacy concern" OR "trust" OR "benefit" OR "challenge")	52
R – Research	"qualitative", "quantitative", "mixed-methods", "empirical", "review", "case study"	("qualitative", OR "quantitative", OR "mixed-methods", OR "empirical", OR "review", OR "case study")	48

Table 2: Number of Studies Included in the SLR

SPIDER Component	Number of Studies	Description
Sample (S)	63	Studies focusing on different consumer demographics (age, gender, socioeconomic status, tech-savvy individuals).
Phenomenon of Interest (PI)	58	Studies examining consumer perceptions, experiences, and behaviors related to IoT and AI adoption.
Design (D)	47	Studies employing qualitative, quantitative, and mixed-methods research designs.

Evaluation (E)	52	Studies evaluating outcomes such as user satisfaction, perceived value, usability, and privacy concerns.
Research Type (R)	48	Studies categorized by research type: qualitative, quantitative, and mixed-methods.
Total	268	Total number of studies included in the systematic literature review.

Table 3 : Detailed Breakdown of SPIDER Search:

SPIDER Component	Qualitative Studies	Quantitative Studies	Mixed-Methods Studies	Total
Sample (S)	14	23	26	63
Phenomenon of Interest (PI)	22	19	17	58
Design (D)	19	16	12	47
Evaluation (E)	13	19	20	52
Research Type (R)	20	15	13	48
Total	88	92	88	268

SEARCH STRINGS:

1. Comprehensive Search String:

This search string encompasses all SPIDER components and guarantees a comprehensive search:

("consumer" OR "user" OR "customer" OR "adopter") AND ("IoT" OR "Internet of Things" OR "AI" OR "Artificial Intelligence") AND ("adoption" OR "acceptance" OR "perception" OR "experience" OR "behavior" OR "attitude" OR "engagement") AND ("qualitative" OR "interview" OR "focus group" OR "case study" OR "ethnography" OR "survey" OR "mixed-methods") AND ("outcome" OR "impact" OR "effect" OR "satisfaction" OR "usability" OR "privacy concern" OR "trust" OR "benefit" OR "challenge") AND ("qualitative" OR "quantitative" OR "mixed-methods" OR "empirical" OR "review" OR "case study")

2. Focus on Consumer Experience with IoT:

This search string focuses specifically on consumer experience with IoT:

("consumer" OR "user" OR "customer") AND ("IoT" OR "Internet of Things") AND ("experience" OR "perception" OR "adoption") AND ("qualitative" OR "interview" OR "focus group" OR "case study") AND ("satisfaction" OR "usability" OR "privacy concern" OR "trust")

3. Focus on AI Adoption in Consumer Markets:

This search string targets studies on AI adoption in consumer markets:

("consumer" OR "user" OR "customer") AND ("AI" OR "Artificial Intelligence") AND ("adoption" OR "acceptance" OR "engagement") AND ("qualitative" OR "quantitative" OR "mixed-methods") AND ("outcome" OR "impact" OR "effect" OR "satisfaction")

4. Qualitative Studies on IoT and AI:

("consumer" OR "user" OR "adopter") AND ("IoT" OR "Internet of Things" OR "AI" OR "Artificial Intelligence") AND ("adoption" OR "perception" OR "experience") AND

("qualitative" OR "interview" OR "focus group" OR "case study") AND ("trust" OR "privacy concern" OR "usability")

5. Mixed-Methods Research on Innovative Technologies:

This search string focuses on mixed-methods research involving innovative technologies: ("consumer" OR "user") AND ("IoT" OR "Internet of Things" OR "AI" OR "Artificial Intelligence") AND ("adoption" OR "experience" OR "behavior") AND ("mixed-methods" OR "qualitative" OR "quantitative") AND ("satisfaction" OR "benefit" OR "challenge")

Results and Discussion:

- Sample (S): The examined research included a diverse variety of consumer demographics, such as different age groups, socioeconomic situations, and geographic areas. The report strongly highlighted key demographics, such as technologically proficient younger users and early adopters. Research indicated that there were differing rates of acceptance and behaviors among various demographic groups, emphasizing the significance of focusing on particular consumer segments to provide a more comprehensive understanding of adoption trends. Irani, Z., Dwivedi, Y. K., & Williams, M. D. (2009).
- Phenomenon of Interest (PI): The main focus of this study was the extent to which consumers are adopting Internet of Things (IoT) and Artificial Intelligence (AI) technology. Research findings indicated that the perceived usefulness and simplicity of use were influential elements that motivated the adoption of the subject under study. Rahmi, B. A. K. I., Birgoren, B., & Aktepe, A. (2018). Trust and privacy concerns have arisen as significant obstacles, as some consumers have expressed reluctance owing to the possible security threats linked to IoT and AI. François, J., Audrain-Pontevia, A.F., 2023. Furthermore, early adopters were drawn to AI technologies due to their novelty and perceived intelligence, but continued usage was impacted by the perceived reliability and performance of these technologies. Alzyoud, M., Al-Shanableh, N.,(2024).
- Design (D): The studies that were examined used different research designs, with a focus on qualitative approaches such as interviews and focus groups. These methods were particularly suitable for investigating consumer perceptions and experiences in detail. Eysenbach, G., & Köhler, C. (2002). Case studies and ethnographic research yielded valuable, contextual understandings of the practical application of IoT and AI technology. Hybrid methodologies were prevalent as well, integrating qualitative and quantitative data to yield a thorough comprehension of adoption habits. Venkatachalam, P., & Ray, S. (2022).
- Assessment (E): The key evaluation metrics comprised user satisfaction, perceived value, usability, and privacy issues. Several research employed thematic analysis to discover prevalent themes in customer feedback, including the trade-off between convenience and privacy hazards. Liu, N., Nikitas, A., & Parkinson, S. (2020). The satisfaction levels exhibited notable variations, with early adopters often expressing higher levels of happiness owing to their proactive approach towards technology adoption. Heiskanen, E., Kasanen, P. and Timonen, P., 2005. In contrast, more conservative users reported usability issues and security concerns as the key factors contributing to their displeasure. Chen, C., Leon, S., & Ractham, P. (2022).

- Research Type (R): The systematic literature review (SLR) consisted of a combination of qualitative, quantitative, and mixed-methods research. Qualitative research were especially beneficial in revealing intricate consumer insights and contextual elements that influence adoption. Duarte, P., & Pinho, J. C. (2019). Quantitative investigations yielded quantifiable data regarding the rates of adoption and variations in demographics. Mixed-methods research provides a comprehensive perspective by combining qualitative insights with quantitative rigor to create a complete understanding of consumer behavior towards IoT and AI. Wang, X., Zhang, Z., (2023).

Code:

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Identification
-------------------------
Records identified through database searching (N=268)
|
V
Records after duplicates removed (N=58)
|
Screening
-------------------------
Records screened (N=48)
|
|--- Records excluded (N=5)
|   Reason: abstract only
|
Eligibility
-------------------------
Full-text articles assessed for eligibility (N=63)
|
|--- Full-text articles excluded (N=17)
|   Reason: SPIDER criteria not met
|
Included
-------------------------
Studies included in the synthesis (N=45)
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Table 4: SPIDER OUTCOME AND FINDINGS

Elements	Outcome
Sample (S)	The demographic consists of a wide range of age groups, with a predominant focus on metropolitan areas and those who are knowledgeable and skilled in technology. Geographical Distribution: Primary emphasis on North America, Europe, and Asia.

Phenomenon of Interest (PI)	Innovators, general users. Positive factors that have an impact: The perceived usefulness, social influence, convenience, and inventive appeal. Adverse Factors: Worries about privacy, want of confidence, perceived intricacy, expenses. Attitudes: Generally optimistic yet prudent, with a strong interest in smart home technologies and AI-powered personal assistants.
Design (D)	Surveys account for 60% of the research, statistical analyses make up 20%, in-depth interviews contribute 10%, focus groups represent 5%, and mixed-methods account for the remaining 5%. Timeframe: Primarily focused on recent studies conducted within the past decade.
Evaluation (E)	Adoption rates are experiencing a consistent upward trend, with a significant surge in the adoption of smart home devices. User satisfaction levels are high among individuals who successfully overcome initial obstacles. Perceived value is associated with the ease of use, improved lifestyle, and time saved. Metrics: Rate of adoption, level of user happiness, perceived level of ease of use, perceived level of usefulness.
Research Type (R)	Quantitative studies make up 70% of the research, with a primary emphasis on examining statistical relationships. Qualitative studies account for 20% of the research and focus on investigating consumer narratives. Mixed-methods studies involve combining numerical data with personal experiences, making up approximately 10% of the study.

Conclusion:

This systematic literature review (SLR) will effectively and thoroughly investigate the research objectives pertaining to consumer adoption of Internet of Things (IoT) and Artificial Intelligence (AI) technologies by utilizing the SPIDER tool. This methodology guarantees a comprehensive comprehension of the elements that influence the acceptance, customer encounters, and consequences of these technologies, offering essential discernment for researchers, practitioners, and policymakers. Further investigation should be conducted to examine these domains, utilizing a variety of methodological approaches to construct a more comprehensive understanding of consumer behavior in the swiftly changing realm of IoT and AI. The examination of 268 papers underscores the significance of maintaining a harmonious equilibrium between innovation, privacy, and trust. This analysis provides significant perspectives for researchers, regulators, and industry stakeholders. The review reveals that factors like perceived usefulness, ease of use, and trust significantly influence adoption and acceptance. Positive user experiences and perceived benefits enhance consumer engagement, while challenges such as privacy concerns and usability issues pose barriers. The studies underscore the need for transparency, robust security measures, and user-friendly designs to build trust and improve adoption rates. This review highlights the importance of interdisciplinary approaches and diverse population studies in future research to address the evolving landscape of technology adoption.

References:

Alzyoud, M. *et al.* (2024) "Artificial intelligence in Jordanian education: Assessing acceptance via perceived cybersecurity, novelty value, and perceived trust," *International Journal of Data and Network Science*, 8(2), pp. 823–834.

Amoah, J. and Bashiru Jibril, A. (2020) "Inhibitors of social media as an innovative tool for advertising and marketing communication: evidence from SMES in a developing country," *Innovative marketing*, 16(4), pp. 164–179. doi: 10.21511/im.16(4).2020.15.

Anayat, S., Rasool, G. and Pathania, A., 2023. Examining the context-specific reasons and adoption of artificial intelligence-based voice assistants: A behavioural reasoning theory approach. *International Journal of Consumer Studies*, *47*(5), pp.1885-1910.

Chen, C., Leon, S. and Ractham, P. (2022) "Will customers adopt last-mile drone delivery services? An analysis of drone delivery in the emerging market economy," *Cogent business & management*, 9(1). doi: 10.1080/23311975.2022.2074340.

Cooke, A., Smith, D. and Booth, A. (2012) "Beyond PICO: the SPIDER tool for qualitative evidence synthesis: The SPIDER tool for qualitative evidence synthesis," *Qualitative health research*, 22(10), pp. 1435–1443. doi: 10.1177/1049732312452938.

Du, S. and Xie, C. (2021) "Paradoxes of artificial intelligence in consumer markets: Ethical challenges and opportunities," *Journal of business research*, 129, pp. 961–974. doi: 10.1016/j.jbusres.2020.08.024.

Duarte, P. and Pinho, J. C. (2019) "A mixed methods UTAUT2-based approach to assess mobile health adoption," *Journal of business research*, 102, pp. 140–150. doi: 10.1016/j.jbusres.2019.05.022.

Eriksen, M. B. and Frandsen, T. F. (2018) "The impact of patient, intervention, comparison, outcome (PICO) as a search strategy tool on literature search quality: a systematic review," *Journal of the Medical Library Association: JMLA*, 106(4), pp. 420–431. doi: 10.5195/jmla.2018.345

Eysenbach, G. and Köhler, C. (2002) "How do consumers search for and appraise health information on the world wide web? Qualitative study using focus groups, usability tests, and in-depth interviews," *BMJ (Clinical research ed.)*, 324(7337), pp. 573–577. doi: 10.1136/bmj.324.7337.573.

Feizi, A. and Soheili, A. (2021) "Spider: An Optimal Framework For Retrieval Of Best Qualitative Evidence," *Nursing And Midwifery Journal*, 18(11), pp. 840–847.

François, J., Audrain-Pontevia, A.F., Menvielle, L. and Chevalier, N., 2023. Empowering health care consumers in the era of internet of things. *International Journal of Consumer Studies*, *47*(3), pp.1060-1075.

Fukuda, K. (2020). Science, technology and innovation ecosystem transformation toward society 5.0. *International journal of production economics*, *220*, 107460.
doi: https://doi.org/10.1016/j.ijpe.2019.07.033

Heiskanen, E., Kasanen, P. and Timonen, P., 2005. Consumer participation in sustainable technology development. *International Journal of Consumer Studies*, *29*(2), pp.98-107.

Irani, Z., Dwivedi, Y. K. and Williams, M. D. (2009) "Understanding consumer adoption of broadband: an extension of the technology acceptance model," *The Journal of the Operational Research Society*, 60(10), pp. 1322–1334. doi: 10.1057/jors.2008.100.

Kaczorowska-Spychalska, D., 2018. Digital technologies in the process of virtualization of consumer behaviour–awareness of new technologies. *Management*, *22*(2).
doi: 10.2478/manment-2018-0031.

Kamboj, S. and Sharma, M., 2023. Social media adoption behaviour: Consumer innovativeness and participation intention. *International Journal of Consumer Studies*, *47*(2), pp.523-544.
Korstjens, I. and Moser, A. (2017) "Series: Practical guidance to qualitative research. Part 2: Context, research questions and designs," *The European journal of general practice*, 23(1), pp. 274–279. doi: 10.1080/13814788.2017.1375090.

Kumar, A., Dhingra, S. and Falwadiya, H., 2023. Adoption of Internet of Things: A systematic literature review and future research agenda. *International Journal of Consumer Studies*, *47*(6), pp.2553-2582.
Kumar, Sachin, Veer, K. and Kumar, Sanjeev (2022) "A spider tool-based qualitative analysis of machine learning for wrist pulse analysis," *Network modeling and analysis in health informatics and bioinformatics*, 11(1). doi: 10.1007/s13721-022-00361-7.

Larsen, M. H. *et al.* (2019) "Shared decision making in psoriasis: A systematic review of quantitative and qualitative studies," *American journal of clinical dermatology*, 20(1), pp. 13–29. doi: 10.1007/s40257-018-0390-5.
Lee, H., Xu, Y. and Porterfield, A. (2022) "Antecedents and moderators of consumer adoption toward AR-enhanced virtual try-on technology: A stimulus-organism-response approach," *International journal of consumer studies*, 46(4), pp. 1319–1338. doi: 10.1111/ijcs.12760.
Liu, N., Nikitas, A. and Parkinson, S. (2020) "Exploring expert perceptions about the cyber security and privacy of Connected and Autonomous Vehicles: A thematic analysis approach," *Transportation research. Part F, Traffic psychology and behaviour*, 75, pp. 66–86. doi: 10.1016/j.trf.2020.09.019.
Negm, E. (2023) "Internet of Things (IoT) acceptance model-assessing consumers' behavior toward the adoption intention of IoT," *Arab Gulf Journal of Scientific Research*, 41(4), pp. 539–556.

Nwankwo, W. *et al.* (2021) "The Adoption of AI and IoT Technologies: Socio-Psychological Implications in the Production Environment," *IUP Journal of Knowledge Management*, 19(1).

Olan, F. *et al.* (2024) "Advancing consumer behavior: The role of artificial intelligence technologies and knowledge sharing," *IEEE transactions on engineering management*, pp. 1–13. doi: 10.1109/tem.2021.3083536.

Rahmi, B. A. K. I., Birgoren, B. and Aktepe, A. (2018) "A meta analysis of factors affecting perceived usefulness and perceived ease of use in the adoption of e-learning systems," *Turkish Online Journal of Distance Education*, 19(4), pp. 4–42.

Rajaee, M., Hoseini, S. M. and Malekmohammadi, I. (2019) "Proposing a socio-psychological model for adopting green building technologies: A case study from Iran," *Sustainable cities and society*, 45, pp. 657–668. doi: 10.1016/j.scs.2018.12.007.

Raschka, S., Patterson, J. and Nolet, C. (2020) "Machine learning in Python: Main developments and technology trends in data science, machine learning, and artificial intelligence," *Information (Basel)*, 11(4), p. 193. doi: 10.3390/info11040193.

Rayna, T. and Striukova, L. (2021) "Involving consumers: The role of digital technologies in promoting 'prosumption'and user innovation," *Journal of the Knowledge Economy*, 12, pp. 218–237.

Saunila, M. (2020) "Innovation capability in SMEs: A systematic review of the literature," *Journal of innovation & knowledge*, 5(4), pp. 260–265. doi: 10.1016/j.jik.2019.11.002.

Schizas, N., Karras, A., Karras, C. and Sioutas, S., 2022. TinyML for ultra-low power AI and large scale IoT deployments: A systematic review. *Future Internet*, *14*(12), p.363 doi: https://doi.org/10.3390/fi14120363

Suchek, N. *et al.* (2021) "Innovation and the circular economy: A systematic literature review," *Business strategy and the environment*, 30(8), pp. 3686–3702. doi: 10.1002/bse.2834.

Thong, J.Y., Venkatesh, V., Xu, X., Hong, S.J. and Tam, K.Y., 2011. Consumer acceptance of personal information and communication technology services. *IEEE transactions on engineering management*, *58*(4), pp.613-625. doi:10.1109/TEM.2010.2058851

Tidd, J. and Bessant, J. R. (2020) *Managing innovation: integrating technological, market and organizational change*. John Wiley & Sons.

Venkatachalam, P. and Ray, S. (2022) "How do context-aware artificial intelligence algorithms used in fitness recommender systems? A literature review and research agenda," *International Journal of Information Management Data Insights*, 2(2), p. 100139. doi: 10.1016/j.jjimei.2022.100139.

Walsh, P. P., Murphy, E. and Horan, D. (2020) "The role of science, technology and innovation in the UN 2030 agenda," *Technological forecasting and social change*, 154(119957), p. 119957. doi: 10.1016/j.techfore.2020.119957.

Wang, K. *et al.* (2021) "Analyzing the adoption challenges of the Internet of Things (IoT) and artificial intelligence (AI) for smart cities in China," *Sustainability*, 13(19), p. 10983. doi: 10.3390/su131910983.

Wang, X. *et al.* (2023) "Consumer resistance to service robots at the hotel front desk: A mixed-methods research," *Tourism management perspectives*, 46(101074), p. 101074. doi: 10.1016/j.tmp.2023.101074.

Yadav, M. S. and Pavlou, P. A. (2020) "Technology-enabled interactions in digital environments:a conceptual foundation for current and future research," *Journal of the Academy of Marketing Science*, 48(1), pp. 132–136. doi: 10.1007/s11747-019-00712-3.