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Factors Influencing the Use of the Internet of Things (IoT) to Enhance Customer Relations and Customer Experience

Ilknur Ozturk

Faculty of Economics, Administrative and Social Sciences, Nisantasi University, Istanbul, Turkey.

ARTICLE DETAILS	ABSTRACT
<p>Article History <i>Published Online:</i> June 2024</p> <hr/> <p>Keywords Internet of Things Customer Relation Relationship Marketing Customer Experience</p> <hr/> <p>JEL Codes: C61 C81 E21 M31 M37 O33</p> <hr/> <p>Corresponding Author <i>Email:</i> <i>ilknur.ozturk@nisantasi.edu.tr</i></p>	<p>Enhancing the customer relation has been considered critical cornerstone for successful organization and it plays a vital role in different business contexts and sectors. Further, it can improve the entity's status and profiles. With the respect of the Internet of Things (IoT), a new shift in the paradigm among different business fields is based on the premise of interconnected devices with customer relations. IoT supports and underpin the businesses in several ways and methods include improving public safety, transport, and healthcare through providing more reliability and accurate information to enhance communication and relations. In this paper, an aim to address the impact of the IoT implementation on enhancing customer relations. There are many key factors while implementing IoT such as cost-savings, self-configuration, robotics, and operations management. On other hand, a few negative aspects may influence the implementation of IoT, include privacy and security threats, interoperability, dependability, insufficient infrastructure, and less experienced IT experts. The industrial and business sectors may benefit from implementing IoT by addressing adoption-associated concerns about customer relations. The current paper pursues to develop a research framework to adopt effective customer relationships using IoT in the organizations. Also, the study proposed a framework to impact user experience using IOT which adds more light on a set of Factors that influencing customer experience.</p>

1. INTRODUCTION

The rapidly growing technology development of the Internet of Things (IoT) is linked with everything in today's world. With the growing technology adoption rate reach out 26 billion with massive revenues about \$300 billion in 2020 (Ahmed et al., 2017). Also, the commercial applications for IoT have been suggested to significantly influence the ways that the IoT will be developed in the future (Jaafreh et al., 2018). Moreover, with using IoT, any device could be connected and thus generate data. The current businesses recognize the potential role of the enormous amount of data to compete and utilize in many different aspects to attract both of existed and expected customers which lead to improve the services provided and enhance the communication channels (Lo and Campos, 2018; Raza et al., 2022).

The issue of customer relationship has taken much attention of the organization and indicate to customer care that can help the organizations to focus more on its customers by creating and maintaining long-term relationships based on factors can achieve this aim such as commitment, trust, and mutual value creation (Lo and Campos, 2018; Nuseir et al., 2023a). The relationships are intended to keep the customers are more delighted and satisfied with the company, thus; contribute to make them more loyal which is most important for the company's reputation and to attract new customers (Zia, 2022). Prioritize the customer relationships would also enable the companies to stand out in the market.

In general, IoT concerns with collects the data as well process insights. The collected data assists the organizations and business to better understand the priorities of their customers (Alshurideh et al., 2023; Anaam et al., 2023). Hence, the effective management of the companies can optimize the existing services or products and design new ones resulting the changes in the customers' needs (Amodu et al., 2019). Certainly, the Internet has doubtlessly transform the ways into the most things are done include the theory and practice of customers relations.

2. BENEFITS OF IOT IN CUSTOMER RELATIONSHIPS

Since the increasing importance of customer relationships, the discussion on the role can be played by IoT to enhance this relation also confirmed a significant role. In general, there are some benefits of IoT in the customer relationships for example:

- Improving customers' safety.
- Improving digital safety.
- Providing real-time data.
- Providing personalized communication.
- Improving time management.
- Improving services and products.
- Enhancing customers' journey and customer relations.
- Facilitating automation.

In addition, IoT is seen as intentionally built to manage and shape many aspects of businesses like customer knowledge and customer behaviors. Having the capacity to automatically collect and transfer data from many different forms of interaction by using sensors, smart gadgets can help the organizations and businesses in effective prediction of the number of customers' needs, improve products and brands, reduce the number of defects in this aspect. They can also offer user interfaces that help in collecting important feedback and survey about the level of commitment and satisfaction of business products or service. IoT also used to enhance the customers' communications and increase the healthy interactions by capturing their emotions, delivering right products that meet their expectation, enhancing product service, and configuring new promotional strategies and commercial decision-making (Riggins and Wamba, 2015; Marek and Woźniczka, 2017). IoT also reflects a thought could improve the customers' experiences by generate new and systematic solutions to comprehend and influence customers' behaviors (Gubbi et al., 2013; Pei et al., 2020; Porter and Heppelmann, 2014).

Table (1) Lists the opportunities for refining customer knowledge through the application of IoT technologies.

IoT prospects	Descriptions
IoT develops the stream of customers' behaviors data.	An in-depth knowledge of consumers' purchasing, utilizing, and use habits and patterns may be obtained by collecting and analyzing the data delivered by smart devices.
IoT provides customer's behavior in its natural context.	A better understanding of customers' purchasing related-behaviors, by analyzing their decisions, habits and purchasing styles patterns that might gain through collect and analyze important data.
IoT contributes to high manufacturing the products.	The ability to monitor product performance and keep informed about the factors that can improve customer satisfaction and to keep surviving the business by collecting and analyzing data offered by IoT.
IoT allows building strong relationships with customers to provide them with special services	In order to improve the strong ties and bonds between customers and a brand or business, the modern companies use the smart devices to offer specially designed services to them.
IoT allows keeping customers updated.	Consumers' perceptions of waiting time can be enhanced and the volume of received complaints and inquiries also decreased when the customers receive accurate data on the status of delivering the product to their smart devices.
IoT helps improving service processes.	In order to reduce waiting time at busy businesses like stores, airports, entertainment, etc., data from wearable connected phones like watches or bracelets may be used.
IoT upsurges the accuracy of advertising as well as sales promotions.	The data collected from the smart device allows the replace of standardised adverts and tailor the information to the customers' needs and desires and develop the sales volumes, payments methods, clients commitment and experience, customer loyalty, etc.

The adoption of the IoT could lead to higher availability of products that tailored to specific customers' needs and expectations. The product that meets the needs of a specific market, particularly if it matches the ideology of the people will result in positive experiences for them. The examples that capture aspects such as ease, innovation, and co-sharing are well portrayed in IoT systems like Autolib, Zipcar, and CityBee where they can address the customers' demands who don't want to own a car but value co-sharing (Astill et al., 2020). The traditional idea of product ownership is rapidly being superseded by the as-a-service model, especially among the company customers. In this approach, the supplier delivers a service to a client who only wages for the time the device is actually used and the level of communication effectiveness (Ali et al., 2021).

Additionally, IoT provides an amazing chance for companies to provide real-time device information, solution and data services (Lee & Lee, 2015), as it is efficient for automating business and manufacturing processes, as well as remotely controlling the key operations, conserving resources, and optimizing supply chains. Furthermore, it also provides highly relevant offers at the right time, more satisfying in-store experiences, rapid and seamless issue resolution, and more compelling choices to propel customer loyalty.

3. PROBLEM STATEMENT AND RESEARCH CONTRIBUTION

Customer Relationship Management (CRM) can be seen as a set of practices, methods, and technology (Chen & Popovich, 2003) which usually has a major role in all business sectors that adopt to manage and analyze customer interactions and information across the organizations' life cycle. The businesses focus on CRM are continuously facing the challenge of frequently changing among the customer demands, and IoT is required to accommodate these changes (Zare & Honarvar, 2021). IoT device makers and users confront substantial issues regarding IoT data collection and management although the recent expansion of the IoT sector. These challenges vary and include customers' data security, data privacy, data volume, and data complexity. Since new tools emerge gradually, develop new products and merge old ones that requires money and time.

The industrial and business revolutions give rise to the needs of data/information collection and transformation between different places over the webs. The lack of consideration the growing effect of the information technology make it also possible to give focus on the effect of innovative technologies in the networks field and Internet stand out obviously as the fastest with trustworthy mode in data communication (Vemuri et al., 2022). Moreover, the literature still with limited works with the internet that has been turned omnipresent and its impact all business aspects to create unquestionable spaces in business. The studies through bowse the journey of internet from micro networks to macro ones have been rampant form the global networks. The concept of IoT is coined to elaborate the network connection between different objects, but in the physical world the incessant ways across the internet and data transfer and collect in IoT landscapes need further investigation.

4. Proposed framework to impact user experience using IoT.

IoT enables the different businesses with opportunities could enhance customer relationships by improving their various experiences (Hossain et al., 2021). It can accurately identify whenever maintenance is needed, creates better products, sends a personal message, and much more. E-commerce businesses for example might benefit from the IoT and increase their sales (Ahlemeyer-Stubbe & Müller, 2020). As shown in figure 1 the proposed framework for customer experience is dependent on seven factors: usefulness, ease of use, social influence, cost, IT knowledge, trust, and privacy and security.

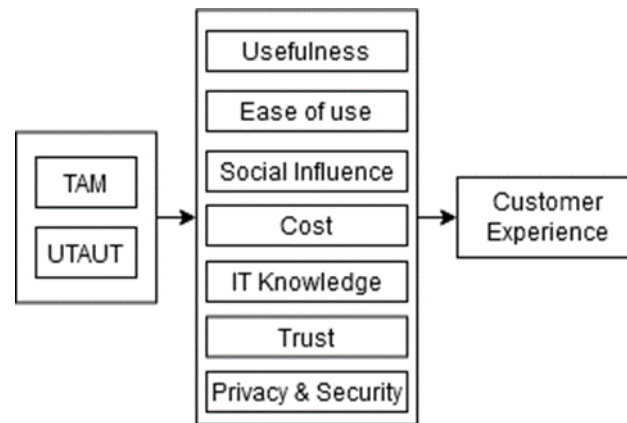


Figure 1: Proposed framework of customer experience.

4.1 Usefulness and customer experience

It is perceived that usefulness in the Technology Acceptance Model (TAM) is comparable to the productivity prospects in the Unified Theory of Acceptance and Use of Technology (UTAUT), and the service quality is acquired from technologies that may develop the customers' perceived usefulness. In the context of IoT, the factor of perceived usefulness implies that the users would find IoT services useful since it enables them to enhance the overall efficiency in daily situations (Bello & Zeadally, 2019). One of the most essential elements for the development of IoT services is the usefulness of the technology, which is a key indicator of the intentions to use its service.

4.2 Ease of use and customer experience.

It has been noted that perceived flexibility of use has a big impact on what consumers say about the use of IoT services. The simplicity of the use is among the most important parts, thus it makes perfect sense that the ease of use will have a big impact on how customers feel (Abdel-Basset et al., 2019; Pelet et al., 2021). It is clear that the positive customer experience is a key goal, and in some cases it is a driving force (Alshurideh et al., 2024). As well it is interesting of the companies to hear to their customers and incorporate their own expertise, plan, implement and measure the results to extend the successful outcomes to other customers (Al Kurdi et al., 2023; Nuseir et al., 2023b).

4.3 Social influence and customer experience

A person's perception of how important it is for other people to believe they should use modern technologies is known as social pressure (Fulk et al., 1990). The impact of social pressure on IoT service acquisition has a significant impact on how consumers feel, think or believe about using IoT services (Hsu et al., 2016). Social influence indicates the subgroups of e-commerce that use online and social media to support the social communication and users input, hence assist in the sales and purchases of a service or product.

4.4 Cost and customer experience

Cost can be described as the amount that consumers must pay to utilize a service. One of the primary aspects of decision-making is cost (Narawish et al., 2021), which is unique to each person. Cost has a big impact on whether IoT services are accepted (Arfi et al., 2021). In a similar manner, it has been shown that the cost of IoT services is one of the biggest worries for clients. The critical costs of IoT services further associated with expensive human interactions, and the procedures look time-consuming and need experts that may face another cost.

4.5 IT knowledge and customer experience

The capacity of users to work with the Internet and its apps, including IoT services, is referred to as IT expertise. Customers must be aware of the information being employed and how it may be used and used successfully in order to embrace a new technology (Newby et al. 2014), which reduces their worry.

Certainly, the adequate effective knowledge of IT improve the customer experience through smoothly with lower flaws while using technologies (Chakravorti, 2011).

4.6 Trust and customer experience

Trust can be understood as a person's perception of the competence and integrity of an organization delivering the service (Kim et al., 2006; Kramer & Lewicki, 2010). One essential element that affects how customers feel about embracing IoT services is their level of trust in those services (AlHogail, 2018). Furthermore, a key element in the uptake of IoT services is trust. Trust factor can also expand the intentions of customers to involve within reliable electronic payment methods for instance and give them a confidence with this aspect.

4.7 Security, privacy and customer experience

The extent to which someone considers using a specific program will be risk-free is alluded to as their security level (Alzubaidi et al., 2023). While the possible control loss of personal data is how privacy is characterized (Acquisti & Grossklags, 2004). Customers' priority and concerns emerged when introduce new technology without focus on facets related to privacy and security, which this has a big impact on how fast technology. The users should feel comfortable while interacting with information systems and apps to enhance their usage and adoption. Furthermore, the factors of security and privacy influence the intention to send personal details for IoT services.

5. PROPOSED RECOMMENDATIONS AND DISCUSSION

The companies all across the globe are focusing more on the IoT, not as of the excitement, but because it can create tremendous development potential (Alshurideh, 2014). The wireless sensors and connections change the world of goods into a whole new world of services. IoT redefines how the companies undertake their main operations and activities and change the consumers' perceptions and behaviors. Imagine networked cars, home automation, and local marketing. IoT is about the always-on, interconnected, and everywhere consumer experience; it does not concern "things."

IoT presents businesses with a virtually unknown opportunity to continually involve customers in real-time and create value through their product lifetimes, although with certain challenges. With the help of linked devices and services, the companies can rapidly see how their goods are being used. This enables them to swiftly classify and solve matters, collect data to drive enhancements, and increase the sales by proposing relevant facilities and enticing in-app commercial investment. There are a few recommendations for businesses to enhance the customer experience by using IoT, as shown in Table (2).

Table (2) Recommendations to enhance customer experience.

Recommendations	
Highly relevant offers at the right time.	IoT raises targeted advertising to a new level when predictive analytics increase the efficiency of the campaign. By monitoring usage in real time and understanding how, when, or where customers use their products, linked services and products enable businesses to better match the customer's requirements and interests at a specified instant.
More satisfying in-store experiences	Retailers are becoming more prosperous as a result of enabling the customer access to IoT connection. The businesses can collect and analyze data on customer buying styles and behaviors, performance metrics, and shops to increase the sales.
Rapid and seamless issue resolution.	By two-way communication among clients and the company, linked services provide new, quick methods for resolving and avoid problems. With real-time insight into device activity, the companies can keep an eye on efficiency and spot issues as they arise, sometimes even before customers notice. Further, the wireless link facilitates quick and economical software and product updates.
More compelling choices to customer loyalty.	Customers' expectations and desires have been changed as IoT develops with limitless potential. Consequently, the business technology offers solutions to more issues and needs will be the real winners in the connected services and products market.

The critical analysis in this research work is based on analyzing and addressing both of Pros and Cons of customer relation. Table 3 presents how IoT has can potentially directly affect the value generated of the companies, in addition, to directly increasing sales volume and profitability. The perceived value of the product is increased by offering customers highly customized services and recommendations based

on the data gathered from them. Moreover, social media has provided customers with a strong voice and new ways to communicate and interact with companies (Al Kurdi, 2024). While the IoT has made people's lives easier and wiser since its inception, its drawbacks can't be ignored. Some of these pros and cons in the applications of IoT in customer relation are shown in table (3):

Table (3) Pros and Cons on customer relation

Pros	Cons
Easy Access.	Complexity.
Wireless technologies turn cities into smart cities.	Compatibility.
Save Money.	Lesser Employment
Business Benefits.	Technology Takes Control of Life.
Increased Productivity.	Technology Addiction.

IoT supports all business cycles, from monitoring processing steps to monitoring the products, by giving businesses real-time access to consumer activities. For instance, sensors and monitoring chips enable the customers to track the shipment and delivery of items. Thus; the businesses should carefully consider the number of essential advantages provided by utilizing IoT devices. The IoT devices have greater likelihood of attracting new customers and enlist their involvement within further interaction if it is enjoyable to use. IoT service providers must conduct marketing campaigns to improve consumers' knowledge and enhance the competences with IoT usage. As a result, it is possible to improve users' sense of planned behaviors and supportive conditions.

Smart technological devices are one of the most important applications that depend on the IoT. Using digital technologies and smart design aim to achieve a kind of sustainability that serves current and future generations. This is why this issue need developed businesses infrastructure, smart industries and systems. By using the IoT and the Internet of Everything, customer relations among the organizations allow for communications monitoring, achieving sustainability of resources management, making greater performance more efficient, and facilitating future decision-making based on accurate information.

6. CONCLUSION, LIMITATIONS AND FUTURE DIRECTIONS

IoT-based customer relationship management aims to increase customer contentment, commitment, and trustworthiness. The most well-known businesses in the fashion, automotive, retail, or industrial sectors prioritize delivering positive customer relationships all over a variety of platforms. As the companies implement IoT, every customer engagement with a computer or smartphone goes digital, enable them to learn specific and in-depth data regarding consumer behavior and give consumers the greatest possible experience. The IoT streamlines data collecting and analysis on consumer behavior and preferences, allowing for more precise modeling between a firm and a customer expecting their next purchase choice. Consumer research, product and service design, maintenance and repair, personalized service, promotional tactics, and relationship management are all needed for the IoT to be utilized successfully as a tool that can facilitate the managing of the customer experience process. The IoT continued growth will alter how human-object relations are viewed and understood, as well as provide new options for advertising and the design of user experiences.

It can also conclude that customer relation management based on the quality of information is considered one of the competitive advantages of all organizations if it is used in its full and correct sense, as it is through customer relation management systems that a database can be organized that facilitates the search and retrieval process and the dissemination of experience and knowledge among all employees about customers.

Smart devices that provide useful information and data are quite significant. The poor connectivity causes a concern whenever IoT sensors are expected to monitor operational data and deliver feedback. Future technological advancements must be addressed while developing IoT applications. Although many IoT devices are inactive, it might be challenging for users to be aware that their personal information is being gathered. The devices in public places can routinely gather information, and it is sometimes necessary for consumers to opt out if they do not want their information collected. To add

more, the IoT might be the next industrial revolution, with networks physical gadgets replacing skills and operations. In today's knowledge based economy, the IoT has the potential to transform businesses and society by increase the transparency, optimize the manufacturing processes, and lower the operational expenses.

References

- Abdel-Basset, M., Mohamed, M., Chang, V., & Smarandache, F. (2019). IoT and its impact on the electronics market: A powerful decision support system for helping customers in choosing the best product. *Symmetry*, 11(5), 1-21.
- Ahlemeyer-Stubbe, A., & Müller, A. (2020). How to leverage internet of things data to generate benefits for sales and marketing. *Applied Marketing Analytics*, 5(3), 233-242.
- Ahmed, E., Yaqoob, I., Hashem, I. A. T., Khan, I., Ahmed, A. I. A., Imran, M., & Vasilakos, A. V. (2017). The role of big data analytics in Internet of Things. *Computer Networks*, 129, 459-471.
- Acquisti, A., & Grossklags, J. (2004). Privacy attitudes and privacy behavior: Losses, gains, and hyperbolic discounting. In *Economics of information security* (pp. 165-178). Boston, MA: Springer US.
- AlHogail, A. (2018). Improving IoT technology adoption through improving consumer trust. *Technologies*, 6(3), 1-17.
- Ali, N., Ahmed, A., Anum, L., Ghazal, T.M., Abbas, S., Khan, M.A., Alzoubi, H.M., Ahmad, M., (2021). Modelling supply chain information collaboration empowered with machine learning technique. *Intelligent Automation & Soft Computing*, 29(3), 243-257.
- Al Kurdi, B. (2024). Social Media Addiction: Youths' Perspectives, *International Journal of Management and Marketing Intelligence*, 1(1), 1-10.
- Al Kurdi, B., Alzoubi, H., Alshurideh, M., Alquqa, E., & Hamadneh, S. (2023). Impact of supply chain 4.0 and supply chain risk on organizational performance: An empirical evidence from the UAE food manufacturing industry. *Uncertain Supply Chain Management*, 11(1), 111-118.
- Alshurideh, M. T., Al Kurdi, B., Saleh, S., Massoud, K., & Osama, A. (2023). IoT Applications in Business and Marketing During the Coronavirus Pandemic. In *The Effect of Information Technology on Business and Marketing Intelligence Systems* (pp. 2541-2551). Cham: Springer International Publishing.
- Alshurideh, M. (2024). Utilize Internet of Things (IOTs) on Customer Relationship Marketing (CRM): An Empirical Study, *International Journal of Management and Marketing Intelligence*, 1(1), 11-19.
- Alshurideh, M., Kurdi, B., Al-Gasaymeh, A., Abuhashesh, M., Jdaitawi, A., Alzoubi, H., ... & Alquqa, E. (2024). How metaverse can enhance customer awareness, interest, engagement and experience: A practical study. *International Journal of Data and Network Science*, 8(3), 1907-1914.
- Alzubaidi, L., Al-Sabaawi, A., Bai, J., Dukhan, A., Alkenani, A. H., Al-Asadi, A., ... & Gu, Y. (2023). Towards Risk - Free Trustworthy Artificial Intelligence: Significance and Requirements. *International Journal of Intelligent Systems*, 2023(1), 1-41.
- Amodu, L., Omojola, O., Okorie, N., Adeyeye, B., & Adesina, E. (2019). Potentials of Internet of Things for effective public relations activities: Are professionals ready?. *Cogent Business & Management*, 6(1), 1-15.
- Anaam, E., Hasan, M. K., Ghazal, T. M., Haw, S. C., Alzoubi, H. M., & Alshurideh, M. T. (2023, February). How private blockchain technology secure iot data record. In *2023 IEEE 2nd International Conference on AI in Cybersecurity (ICAIC)* (pp. 1-6). IEEE.
- Arfi, W. B., Nasr, I. B., Khvatova, T., & Zaied, Y. B. (2021). Understanding acceptance of eHealthcare by IoT natives and IoT immigrants: An integrated model of UTAUT, perceived risk, and financial cost. *Technological Forecasting and Social Change*, 163, 120437.
- Astill, J., Dara, R. A., Fraser, E. D., Roberts, B., & Sharif, S. (2020). Smart poultry management: Smart sensors, big data, and the internet of things. *Computers and Electronics in Agriculture*, 170, 1-8.

- Bello, O., & Zeadally, S. (2019). Toward efficient smartification of the Internet of Things (IoT) services. *Future Generation Computer Systems*, 92, 663-673.
- Chakravorti, S. (2011). Managing organizational culture change and knowledge to enhance customer experiences: analysis and framework. *Journal of Strategic Marketing*, 19(02), 123-151.
- Chen, I. J., & Popovich, K. (2003). Understanding customer relationship management (CRM): People, process and technology. *Business process management journal*, 9(5), 672-688.
- Fulk, J., Schmitz, J., & Steinfield, C. W. (1990). A social influence model of technology use. *Organizations and communication technology*, 117(1), 116-140.
- Gubbi, J., Buyya, R., Marusic, S., & Palaniswami, M. (2013). Internet of Things (IoT): A vision, architectural elements, and future directions. *Future generation computer systems*, 29(7), 1645-1660.
- Jaafreh, A. B. (2018). The effect factors in the adoption of Internet of Things (IoT) technology in the SME in KSA: An empirical study. *International Review of Management and Business Research*, 7(1), 135-148.
- Hossain, M. S., Chisty, N. M. A., Hargrove, D. L., & Amin, R. (2021). Role of Internet of Things (IoT) in retail business and enabling smart retailing experiences. *Asian Business Review*, 11(2), 75-80.
- Hsu, C. L., & Lin, J. C. C. (2016). An empirical examination of consumer adoption of Internet of Things services: Network externalities and concern for information privacy perspectives. *Computers in human behavior*, 62, 516-527.
- Kim, P. H., Dirks, K. T., Cooper, C. D., & Ferrin, D. L. (2006). When more blame is better than less: The implications of internal vs. external attributions for the repair of trust after a competence-vs. integrity-based trust violation. *Organizational behavior and human decision processes*, 99(1), 49-65.
- Kramer, R. M., & Lewicki, R. J. (2010). Repairing and enhancing trust: Approaches to reducing organizational trust deficits. *The Academy of Management Annals*, 4(1), 245-277.
- Lee, I., & Lee, K. (2015). The Internet of Things (IoT): Applications, investments, and challenges for enterprises. *Business horizons*, 58(4), 431-440.
- Lo, F. Y., & Campos, N. (2018). Blending Internet-of-Things (IoT) solutions into relationship marketing strategies. *Tehnological Forecasting and Social Change*, 137, 10-18.
- Marek, L., & Woźniczka, J. (2017). The Internet of Things as a customer experience tool. *Jagiellonian Journal of Management*, 3(Numer 3), 163-176.
- Narawish, C., Sharma, D. K., Rajest, S. S., & Regin, R. (2021). Importance of cost efficiency in critical aspect of influences the decision-making process in banks. *Turkish Journal of Physiotherapy and Rehabilitation*, 32(3), 47184-47212.
- Newby, M., H. Nguyen, T., & S. Waring, T. (2014). Understanding customer relationship management technology adoption in small and medium-sized enterprises: An empirical study in the USA. *Journal of Enterprise Information Management*, 27(5), 541-560.
- Nuseir, M. T., Aljumah, A. I., Urabi, S., Alshurideh, M., & Al Kurdi, B. (2023a). The Impacts of Social Media on Managing Customer Relationships with Brands in the UK. In *The Effect of Information Technology on Business and Marketing Intelligence Systems* (pp. 65-88). Cham: Springer International Publishing.
- Nuseir, M. T., El Refae, G. A., Aljumah, A., Alshurideh, M., Urabi, S., & Kurdi, B. A. (2023b). Digital marketing strategies and the impact on customer experience: A systematic review. *The Effect of Information Technology on Business and Marketing Intelligence Systems*, 21-44.
- Pei, X. L., Guo, J. N., Wu, T. J., Zhou, W. X., & Yeh, S. P. (2020). Does the effect of customer experience on customer satisfaction create a sustainable competitive advantage? A comparative study of different shopping situations. *Sustainability*, 12(18), 1 - 19.

Pelet, J. É., Lick, E., & Taieb, B. (2021). The internet of things in upscale hotels: its impact on guests' sensory experiences and behavior. *International Journal of Contemporary Hospitality Management*, 33(11), 4035-4056.

Porter, M. E., & Heppelmann, J. E. (2014). How smart, connected products are transforming competition. *Harvard Business Review*, 92(11), 64-88.

Raza, H., Amjad, M., & Muneer, S. (2022). IoT based cyber-physical system in automobile devices with dew computing architecture. *Journal of NCBAE*, 1(1), 24–29.

Riggins, F. J., & Wamba, S. F. (2015, January). Research directions on the adoption, usage, and impact of the internet of things through the use of big data analytics. In 2015 48th Hawaii international conference on system sciences (pp. 1531-1540). IEEE.1540–1531 .

Vemuri, V. P., Naik, V. R., Chaudhary, V., RameshBabu, K., & Mengstie, M. (2022). Analyzing the use of internet of things (IoT) in artificial intelligence and its impact on business environment. *Materials Today: Proceedings*, 51, 2194-2197.

Zare, M., & Honarvar, A. R. (2021). Internet services: Customer relationship management (CRM) using Internet of Things (IoT). *Journal of Management Information and Decision Sciences*, 24(3), 1-24.

Zia, G. (2022). Evaluation of Customer Satisfaction Based On Food Quality By Using Fuzzy Inference System. *Journal of NCBAE*, 1(1), 30–38.