

**Topic: Impacts of Digitalization On Consumer Satisfaction and Loyalty Within the Online
Pharmaceutical Sector in Germany**



Abstract

This research study focuses on exploring the impacts of digitalization on consumer satisfaction and loyalty within the online pharmaceutical sector in Germany. This study will close the knowledge gap of the identification of consumers' willingness to acquire the desired medical services via online platforms. The current literature has not specifically highlighted the impact of digitalization on consumer satisfaction and loyalty and this research will be exactly based on the identification of these aspects. The convenience sampling approach was chosen for the purposes of this study because, when compared to other sampling approaches, it appears to be a more appropriate sampling technique for the situation at hand. The data for this research has been collected from the target sample which is set around 50. The questions were asked from the participants in the form of a questionnaire. The questions involve different parts, demographic questions, questions related to consumer satisfaction and loyalty, and questions related to the preferences of the consumers. Moreover, one-to-one interview with the participants was also conducted and most of the participants were regular customers of the online pharmacies from different generations in Germany and some of them were online pharmacy officials in Germany. For the data analysis, a correlation model has been used to determine, analyze and predict future trends based on the data collected from the target population. The results of the data analysis reveal that digitalization has a significant impact on online pharmaceuticals in Germany. Also, all local pharmacies in Germany have effectively fulfilled and satisfied customers' demands by communicating directly with them through online connectivity. Pharmacies have implemented digitalized processes in order to ensure that operations run as smoothly as possible leading to acquiring customer satisfaction and loyalty.

Keywords: Digitalization, customer satisfaction, loyalty, online pharmacies, healthcare

Introduction

Digitalization refers to the inclusion of any digital media in the overall business model of the company. Customers evaluate the products or services based on their personal experiences. The use of different mobile technologies can support organizations in achieving different health objectives. The term mobile health or m-health has a considerable power to change the delivery of service across the globe. This is also true for the SMEs that provide different services as a pharmacy. A powerful combination should be developed including a majority of factors affecting the change in terms of new relationships between the pharmaceuticals and clients using the online mode. Different applications and technologies represent modern opportunities to add mobile health into the existing services. This will increase the quality of different services provided by the companies. The pharmacy services have matured as a clinical branch. There is a clear change from the product-oriented to the patient-oriented profession. The pharmacy industry received special protective measures making it one of the most regulated sectors in various countries. There are certain characteristics of a service that differentiate it from the products. Inseparability and perish-ability are two of the most important characteristics due to which the service provider and service provided will not be separated from each other (Lin & Guo, 2019). Digitalization will benefit the service providers because they can take the feedback of the customers immediately after providing the service. In the modern business world, customer satisfaction and loyalty are very important factors because businesses cannot afford to spend money and other resources on attaining new customers all the time. Digitalization may work two-way for the companies, decrease in costs and assuring customer satisfaction if used effectively.

The world is rapidly moving towards the adaptation of innovative measures to execute daily based operations. The introduction of technologically improved methods has provided mankind with great ease and convenience. The adaptation of digital methods to implement different processes has significantly increased during recent times and it is only because these tools can make things easier for people. The business operations and all the other relevant activities are now being executed with the utilization of innovative and digitalized methods ¹. Like the other fields and industries, the pharmaceutical industry has also experienced massive advancements due to the adaptation of dynamic techniques.

The term online pharmacy refers to the sale and purchase of medicines by utilizing online platforms. The people can place their orders while staying at their homes through a mobile application and can receive the desired goods at their homes ². On the other hand, physical pharmacies are conventional medical stores where the customers have to visit physically to get the required medicines ³. An online pharmacy can be considered as a prime example in this regard as it allows the customers to get all the desired products without physically moving to the market ⁴. People can buy their medicines online by using a mobile application or a website and the company will deliver the desired products at their place. This has provided the people with massive ease and convenience and due to this, they are attracted towards purchasing their medicines online. Germany has always been a country that is obsessed with technological advancements and the online mode of business has become tremendously popular within the country. The pharmaceutical industry has attained tremendous popularity due to the utilization of

¹ Venkat Ramaswamy and Kerimcan Ozcan, "Brand Value Co-Creation in a Digitalized World: An Integrative Framework and Research Implications," *International Journal of Research in Marketing* 33, no. 1 (2016): 93–106.

² Jeff Cain, "Online Social Networking Issues within Academia and Pharmacy Education," *American Journal of Pharmaceutical Education* 72, no. 1 (2008).

³ Andriago Antonio Lorenzoni et al., "E-Learning in Pharmacy Education: What Do We Know about It?," *Brazilian Journal of Pharmaceutical Sciences* 55 (2019).

innovative measures. However, it can have different kinds of impacts on consumer satisfaction and loyalty. This research proposal will describe the factors that are required to be explored to thoroughly comprehend the topic. Moreover, a thorough literature review and previously conducted studies will also be explored in this dissertation.

Problem Statement

The major issue is that there is no authentic study that analyzes the impact of digitalization on online pharmaceutical companies. Thus, the current study will cover the gap by analyzing digitalization' impact on consumer satisfaction within Germany's online pharmaceutical industry. The problem statement of the research is based on the identification of consumer's willingness to acquire the desired medical services via online platforms. Previous researches have not clearly highlighted the impact on digitalization of consumer satisfaction and loyalty and this research will be exactly based on the identification of these aspects.

Literature Review

The researchers have explored digitalization, online pharmacy in Germany, and consumer satisfaction by using different techniques. Considering the situation of Germany, it is quite evident that all three concepts have a firm interconnectedness among each other. The purpose of this research is also to explore these factors and to recognize the impact and importance of digitalization regarding the pharmaceutical industry. This section will discuss the work of different researchers based on the investigation and exploration of the above-mentioned concepts. Analyzing these studies can prove to be quite beneficial to get the required in-depth regarding the subject of the research.

⁴ G. Prashanti, S. Sravani, and Saleha Noorie, "A Review on Online Pharmacy," *IOSR Journal of Pharmacy and*

Digitalization

Digitalization is a term that refers to the utilization of online platforms to execute different operations. It has provided great ease and convenience to the people to perform their activities in double quick time as compared to the conventional means. Digitalization also brings numerous benefits for the people such as easier access to everything, brand recognition, interaction with other people, and more opportunities to generate income.

Nowadays, the success of an organization's operations is dependent on the success of its digital transformation. As mentioned by Rachinger and colleagues (2019), a strong emphasis is placed on the transformation of organizations away from traditional methods and toward more digital methods. Over the past several decades, they assert, technological advancements in global industries have resulted in new opportunities such as greater reactivity, greater flexibility, and greater product individualization for businesses. These technological advancements, they claim, have also brought about several challenges, such as rapid technological change, shifting customer preferences, increased complexities, and shifting legal requirements. In the words of Rachinger and colleagues (2019), digitalization is the use of digital opportunities in such a way that business activities are transformed and made more effective through the application of technology. According to them, digitalization is an important source of innovation as well as a source of competitive advantage, because more effective and efficient operations provide an organisation with a competitive advantage. The authors also point out that the greater the number of companies that transform their operations by introducing digital technologies, the more value is created. This is because digitalization is an external trigger to the use of digital technology for the enhanced value creation process, as Rachinger et al. (2019) point out (as opposed to internal triggers). Because it assists in the restructuring of economies, societies, and institutions, digital

transformation is critical to the future of humanity. With the combination of these digital tools, organizations have an abundance of opportunities that can be used to develop and introduce new and innovative products. As a result of the introduction of consumer-driven products, which is a result of the development of new products, customer satisfaction has increased in almost every industry.

Saputra & Hindriari (2021) developed some self-regulated actors for the digital transformation of a pre-digital organization. The study assessed the impact of individual digital skills, considered leadership as a group factor and culture and mindset as the organizational factors in the development of self-regulatory actors. The methodology was based on a cross-sectional study of 321 employees of a leading national company in the pharma sector in Indonesia. The self-regulating actors were found to be affected by the digital skills, leadership, and culture directly. The actors were found to be affected by the digital mindset indirectly. The culture change will affect the mindset of the top management to impact the digital skills.

The evolution of pharma practises as a result of digitalization has resulted in a significant improvement in both the quality and the number of services provided to the public. As reported by Cristofaro et al., (2020), digital technology has aided in quantifying the achievement of objectives to evaluate overall performance while also fostering excellence. According to Cristofaro et al. (2020), digitalization is a technical process capable of encoding various types of information and converting it from analogue to digital format, thereby assisting pharmacies in improving consumer satisfaction. It follows that digital technology is required to reap the greatest possible benefits from the system. Digital technology, in particular, provides solutions to clinical practises as well as pharmaceutical practises in the healthcare sector, as well as other industries. In addition, the increased use of digital technology in healthcare involves the adoption

of new and advanced modern information and communication technology, which aids in the improvement of various aspects of pharmaceutical research and development, among other things.


It has become possible to conduct pharmaceutical business online since the introduction of digitalization. Developing a growing number of digital platforms can result in significant benefits for digital platform regulators, who will be able to gain better control over and visualisation of the overall transactions as the number of digital platforms grows. As a result of every transaction, digitalization necessitates the control and monitoring of regulators, which has the potential to significantly increase transparency in the overall healthcare system. Utilizing technology and implementing tools across the pharmaceutical industry is critical to help raise the standards for betterment, growth, and development of healthcare delivery and services for the benefit of patients, and this is especially true in the pharmaceutical industry. With the advancement of technology, it is critical to ensure the legitimacy of online pharmacies by establishing regulations for them. Online pharmacies have played a significant role in making medications more readily available to people who require them quickly and easily, and they continue to play an important role. A wide range of medications is available for purchase at competitive prices on digital marketplaces.

Many facilities have been required to support the increased growth and development of the healthcare sector to ensure that healthcare is both affordable and readily available to those in need throughout the community. After conducting a thorough investigation into the experiences and attitudes of pharmacists, it was discovered that mobile communication holds tremendous potential for transforming both clinical and community healthcare interventions in the future. Digital transformation is currently in the process of being implemented. Businesses from a wide

range of industries are supplying the technology that will allow the businesses to change and improve the methods by which they service and operate their customers. The online pharmacies have been able to better concentrate its efforts as a result of the outbreak of the pandemic on determining how they can operate more efficiently. There are many different types of digitalization, and it can be influenced by how customers' records are managed, how services and products are offered, and how they provide immediate value to the users. It has the potential to make a significant difference in the effectiveness and efficiency with which a business operates, as well as the identification of relatively new sources of revenue generation. Online commerce, on the one hand, tends to provide mechanisms for revising business models, while also assisting in increasing responsiveness to customers and improving manufacturing processes on the other hand. Aside from that, there is no indication that the amount of data being processed by pharmaceutical companies will slow down shortly. Consequently, these organisations must act quickly in terms of developing internal core digital capabilities, while also making efforts to go beyond the traditional functions of information technology in all spheres of the business organisation. All local pharmacies want customers to be able to communicate directly with them through online connectivity. It is necessary to provide them with healthcare solutions that are more convenient for them to make their lives more convenient. No one wants to feel restricted because of physical proximity or business hours. Along with a variety of other benefits, the digitalization of pharmacy has the potential to generate additional revenue streams for the location, such as the sale of new products in the line, online sales, online exclusive services and products, providing personalised care, the ability to provide pharmaceutical service to customers through online platforms outside of traditional store hours in real-time, providing extensive value to the customer base, and positioning the pharmacy as a leader in the industry. Pharmacists can

significantly increase the efficiency with which they use technology to assist customers with their overall well-being and health-related needs as a result of the digitalization of pharmacy. A significant increase in the number of employees has the potential to catalyze significant business expansion.

Digitalization, according to Bloomberg, is the process by which numerous domains of social life are restructured around the use of digital media and communication infrastructures, rather than the use of traditional media and communication infrastructures (2018). He defines digitalization as the way people or operations interact with one another through the use of digital technology, which he defines as follows: He goes on to say that the organisations are engaged in a series of digitalization projects, which range from automating processes to retaining in-house employees who are proficient in the use of digital tools such as computers and other electronic devices. The term "digitalization" does not refer solely to the automation of processes, but rather to the consumer-driven strategic operations transformation that necessitates the hiring of cross-cutting organisational operational changes as well as the implementation of advanced digital technologies to transform organisational operations into more effective and efficient ways, according to Bloomberg (2018). Because of this digitalization, operations, processes, and roles that are critical to the operation of an organisation are digitalized as well, resulting in the digital transformation of both the organisation and its strategic plans and objectives.



Digitalization in Germany

The author Norbert Kersting (2019) has explored the impact of digitalization on Germany. According to the author, Germany is not very advanced in terms of digitalization as the core focus of the administration is on the development of infrastructures such as roads,

buildings, and electric grids⁵. There is always a firm interconnectedness between digitalization and the political situation of the country due to which most of the things are dependent on political stability. However, the situation regarding digitalization within the country is improving day by day. The country can now be considered as a favorable place for the implementation of digitalized procedures. The current pandemic forced many businesses towards digitalization. The main reason is that the customers were forced to stay at home and interact with others through digital applications. Businesses have to follow the customers by changing their marketing tools towards the digital platforms.

Digitalization is connected with the concepts of online pharmacy and consumer satisfaction. It has also provided the people with a way of executing the daily based operations effectively and by saving a lot of time. The pharmaceutical industry has also adopted digitalized technology to attain more consumer satisfaction by providing them with quick and efficient services. The next section will elaborate on consumer satisfaction and loyalty by thoroughly investigating the basic factors that are associated with this particular phenomenon.

Digitalization in Health Care in Germany

For the growing demand for its products and services on the international market, the German pharmaceutical sector provides a complete range of high-quality products and services to fulfil the needs of its customers. Export revenues generated by German companies amounted to EUR 63.5 billion in 2016, according to official figures. Official figures show that today's pharmaceutical sector in Germany generates more than 66 percent of its entire yearly revenue from international markets. Between 2005 and 2016, the export figures of German pharmaceutical companies climbed at a rate of around 10% per year on average between 2005

⁵ Marianne Kneuer and Helen V. Milner, *Political Science and Digitalization – Global Perspectives* (Verlag Barbara Budrich, 2019).

and 2016. German pharmaceuticals are in high demand in the United States and other European countries, particularly in Germany. Advances in technology, such as digitalization and Sector 4.0, are also altering the pharmaceutical industry and the delivery of healthcare services.

Enhanced big data analysis is enabled by computer-based, high-throughput technology, which has the potential to dramatically improve the efficiency of research and development activities. This reduces the amount of time it takes for novel medications and diagnostics to make it from the lab to the market, which benefits patients. As German pharmaceutical companies become more conscious of emerging digital solutions, they are aggressively encouraging partnership with start-ups and small firms in the biotechnology, medical technology and information technologies sectors. Not only is it important to improve research and development, but it is also important to provide new drug applications, raise the effectiveness of therapy, and empower patients to play an active role in their own health-care. Dedicated hubs and accelerators for innovative IT-based healthcare solutions have been developed by the vast majority of leading German companies in order to enable the establishment of a platform for such solutions in Germany.

Additionally, digitalization in the pharmaceutical industry is characterized by the implementation of online and real-time monitoring in pharmaceutical manufacturing plants, the establishment of connected manufacturing processes, and the increasing automation of industrial value chains in the sector. Apart from having a long history of engineering and plant construction, Germany also has a wealth of knowledge and experience in pharmaceutical chemistry, making it the ideal location for integrating cost-effective, information technology-based innovation with traditional high-quality manufacturing techniques. Over the course of several decades of industrial development, a varied range of contract manufacturing service organizations (CMOs) have emerged in Germany as a result of this progress. This is especially

true in the case of the biopharmaceutical industry, which has experienced substantial expansion in the last several years.

Customer Satisfaction and Loyalty

Customer satisfaction and loyalty are some of the core issues that are associated with the business world⁶. The success of the companies is highly dependent on these factors and due to this, the management of the organizations must focus on improving the processes which can further help to enhance the relationship with the customers⁷. The business world is quite vigilant to adopt innovative measures based on online technology for the betterment of corporate operations. Considering the importance of the online mode of business, it is quite evident that the customers are equally important in this case as compared to the offline mode of operations. Shankar (2003) with his fellow researchers has investigated the impact on customer satisfaction and loyalty in the online environment. He used the simultaneous equation model to examine the relationship between satisfaction and loyalty for an online business. The results of the experiment demonstrated that the impact of customer satisfaction and loyalty for an online business is the same as it is for the offline mode of business. This thoroughly describes the importance of customer satisfaction for the success of a business regardless of the operational mode⁸. The study also depicted that there is a reciprocal relationship between loyalty and satisfaction and due to which both are equally important to be considered by the business organizations. The online platforms have to make sure that they are providing the customers with the desired quality of products and services due to which they will be attracted towards availing

⁶ Daniel E. Innis and Bernard J. La Londe, "Customer Service: The Key to Customer Satisfaction, Customer Loyalty, and Market Share," *Journal of Business Logistics* 15, no. 1 (1994): 1.

⁷ Thomas E. Hill, "Ideals of Human Excellence and Preserving Natural Environments," *Environmental Ethics* 5, no. 3 (1983): 211–24, <https://doi.org/enviroethics19835327>.

⁸ Venkatesh Shankar, Amy K. Smith, and Arvind Rangaswamy, "Customer Satisfaction and Loyalty in Online and Offline Environments," *International Journal of Research in Marketing* 20, no. 2 (2003): 153–75.

the services of the company. This can be further helpful in developing customers' loyalty and satisfaction. The utilization of digital technology has provided the pharmacies to execute operations more efficaciously and to accomplish the desired satisfaction from the consumer's end. The customers are provided with fast and efficient services without even moving to the market physically. There might be some of the trade associated with digitalized mode of operations as well that will be explored in this comprehensive research.

As organizations shift their focus away from traditional processes and toward more consumer-driven operations and sustainability, pharmaceutical companies are shifting their emphasis away from traditional processes and toward social innovations to remain competitive. Seele and Lock (2017) argue in their paper that, as a result of the increased emphasis placed on consumer-driven products and sustainability, digitalization has the potential to assist organisations in achieving sustainability while also increasing customer satisfaction. As a result of digital technologies, such as e-health services, organizations are better able to provide effective health care services, allowing customers to have more convenient access to high-quality health care services. According to Seele and Lock (2017), digital technology allows an organization to efficiently process data and analyze algorithms to increase the effectiveness and efficiency of business operations and operations management. Moreover, due to the increased effectiveness and efficiency of the organization, consumer satisfaction is increasing across all industries.

As the world progresses toward greater technological innovation, organizations are increasingly focusing on the pursuit of innovative ideas. Gobble (2018) argues that as technology has advanced, digitalization has grown in importance and significance, as well as accruing a wide range of different meanings. According to him, the transformational potential of digital

technology has become so widely recognized that the business consequences of those possibilities are now very much in the open as a result of this recognition. Organizations will need to restructure to survive into the next decade, or even the next year, to accommodate this reality, which will be difficult for some. To his way of thinking about digitalization, it does not alter organizations or their processes; rather, it stimulates the development of new organizational practices, which in turn contribute to the enhancement of fundamental organizational strategies. According to Gobble, the digitalization of operations is more about systems, systems of engagements, and systems of insight than it is about individual applications (2018). These systems and systems of engagements, by leveraging digital data and information, can improve the overall efficiency of their operational processes. Furthermore, he asserts that digitalization encompasses both transformation and innovation, both of which are aimed at increasing the efficiency and effectiveness of operations.

Traditionally, the products launched by the pharma companies have been restricted to the new drugs or medical devices. The major purpose of any campaign was to address the medical needs of the patients. Once the event was completed, companies measured customer satisfaction and loyalty. The companies focused too narrowly on the clinical value and they ignored a very powerful tool to assess the success namely customer experience. Customer satisfaction can be increased by going through the pain points that customers experience during their journey. The whole package offered by the companies revolves around the wants of customers. The entire experience of learning is included in this aspect.

Customers' satisfaction, according to some sources, is influenced significantly by the brand's image in direct proportion. Online pharmacies with a positive brand image can provide a satisfactory service to their customers through the availability of better service, more diverse

products, innovation in service and longer opening hours, the ease of transaction, and the employment of employees with high expertise. Online pharmacies with a positive brand image will receive a high level of customer preference because they are more likely to provide better service and have a more sophisticated system. Those who have a positive image in their mind and who are aligned with the image that they are attempting to achieve are more likely to shop at a store with that image. Customers are more likely to form an opinion about a store based on their interactions with it that is either negative or positive, depending on their interactions with it. The likelihood of customers purchasing from an online pharmacy increases when the pharmacy provides reasonable prices, high-quality services, a large selection of pharmaceutical products, and a responsive after-sale service. Maintaining a brand's image is extremely difficult, but it is possible with extensive teamwork and a strong commitment on the part of all parties involved. Achieving customer satisfaction is something that online pharmacies are capable of accomplishing by developing strategies to compete with chain pharmacies, local pharmacies, and national pharmacies by improving their sincerity or competency in serving the customers. The quality of the product, pricing structure, and the level of service provided all have a significant impact on overall customer satisfaction. Among other things, it can be caused by factors that customers have prioritised to assist them in obtaining satisfaction, such as a wide range of products and product availability. Customers' satisfaction with a product or service, the quality of the product or service, and brand loyalty are three of the most studied relationships in the field of medical research. High-quality products are more likely to be used by customers who place a high value on quality services and products, which have been discovered to fall within their domain (Adebisi & Lawal, 2017). Higher-quality products result in significantly greater customer satisfaction because they provide a better overall experience. To effectively identify

and address the needs of customers, the quality of healthcare services provided to them is critical. The customers are aware that their perception has been dedicated by the companies because they do not rely on other individuals to serve their customers, and this is a natural consequence of the direct link established between customer satisfaction, quality, and loyalty.

Online Pharmacy

As the emphasis on digitalization continues to intensify, every industry, including healthcare systems, is striving to achieve success through the implementation of digital technologies. In response to an increase in demand for effective services, the healthcare system is confronted with a variety of challenges, ranging from demographics to issues created by the pandemic. Specifically, according to Lapão (2019), the health care industry is implementing digital technologies because they are viewed as positive contributors to problem mitigation and contributing to the successful evolution of digital technology. He argues that the healthcare system is falling behind the digital revolution and that, to keep up, it must restructure using a variety of approaches, such as reorganizing processes and skill-mix strategies, in addition to technological innovations. A second point that he makes is that increased use of digital technology in the healthcare system has proven to be beneficial because it assists in the evaluation and treatment of real-world health. The full potential of e-health services must be realized to enhance its role in the care network and to support the activities involved in effective pharmaceutical management to reap the maximum benefits from it. In order to achieve effective pharmaceutical management, it is necessary to plan and manage pharmaceutical operations in an efficient manner. It demonstrates that digital technology not only improves the efficacy of pharmaceuticals but also has the potential to revolutionize the manufacturing process.

In recent years, the increased use of digital technology in the healthcare system has enabled pharmaceutical operations to become more effective and efficient, which has resulted in improved patient outcomes. According to Cobelli and Chiarini (2020), pharmacies around the world have transformed and have transitioned from selling products to treat illness to selling health solutions to help people live healthier lives. They describe this transformation as "a transition from selling products to treat illness to selling health solutions to help people live healthier lives." The pharmaceutical industry has faced numerous challenges around the world; however, with the introduction of digital technology, the pharmaceutical industry has transformed. The benefits of digital technologies for pharmaceutical practices are incalculably numerous and numerous. It is in the best interests of the pharmaceutical industry when pharmacies can participate in and maintain participation between the pharmacist and their customers. As stated by both of them, digitalization plays a significant role in the provision of immediate access to care as well as the facilitation of the transition to new healthcare delivery systems. They also investigated the characteristics of pharmacists who were the owners of small or medium enterprises in pharmacies. The attitude of these pharmacists was assessed towards the use of different mobile health applications. These applications can be used to improve the customer experience, satisfaction, and loyalty. The authors used a narrative enquiry technique along with an analysis of critical events. The experience of respondents was gathered and entered into different categories. The categories were based on how the respondents saw the new tools of technology. The study also assessed the factors that affected the adoption of technologies by pharmacists. The non-adoption or unclear adoption of technology was also explored in this study. The study identified four distinct aspects of reactions showing non-adoption or confused adoption by the pharmacists. Several interviews were conducted by the researchers to get

feedback on the different aspects of the mobile applications. A large majority of respondents said that they could not use the applications properly. They also identified that changing from the normal paper scenario to digital applications can be considered a critical event in this scenario.

Online Pharmacy in Germany

The online mode of business has become quite popular nowadays within the country mostly during the period of a pandemic where the businesses had to adopt this model to ensure the precautionary measures regarding the pandemic. The pharmaceutical sector has been of the most effective and revenue-generating sectors of the country. Schulenburg (1997) has explored the situation of the pharmaceutical industry within the country by comprehensively examining the different factors associated with the respective field. In 1993 a ceiling was developed to make sure that all the financial activities within the pharmaceutical industry are carried out with transparency and aptitude. However, the results of the study depicted that there might be some sort of opposition from the physicians in this regard and there is a possibility that the rate of patient referrals may increase ⁹. The study further suggested that a digitally efficient framework is required in this scenario that ensures the transparency of the procedures. Electronic health record system (EHR) is also used in most of the hospitals of the country which shows the inclination towards the adaptation of digital measures.

Online pharmacies worldwide have been very successful during the current age and the consumers are getting more interested in utilizing them for the sake of purchasing the desired goods and services. Alwon (2015) and his fellow researchers have also explored online pharmacies and their safe usage by consumers. The author has further explored the fact of whether the online pharmacies available on the websites are regulated or not. The consumers

⁹ J-Matthias Graf von der Schulenburg, "Management of Cost and Utilization of Pharmaceuticals in Germany," *Health Policy* 41 (1997): S45-53.

need to know whether they are getting their desired products from a patent source or they are getting provided with a sub-standard product. The study was based on the investigation and comparison of the regulated and non-regulated online pharmacies. The findings revealed that only a quarter or fewer websites from the total number were regulated and some of them were also providing important medicines such as Diazepam and Fluoxetine without even the prescription. Consumers must consider the importance of regulated logos and should opt for such online pharmacies that are regulated to avoid any inconvenience in this regard.

The world is moving towards the adaptation of innovative measures to carry out each process and online pharmacy is one of those innovations. It has been observed that during the last few years, people have become more vigilant towards the utilization of online pharmacies to purchase the desired medicines. Fittler and Vida (2018) have thoroughly explored the attitude of patients towards purchasing medicines by using online platforms. These attitudes can have a positive or negative influence on online medication mechanisms. However, this process has some risks associated with it as well because the actual size of the online pharmacy market is unknown and there is not any significant data available in this regard. Some work should be conducted in future to explore the importance of internet pharmacies and the attitudes of people towards purchasing health care products and medications on the internet.

As the importance of online pharmacies is increasing day by day so some researchers and educationists have decided to develop some effective and error-free frameworks in this regard to ensure the fact that the customers are provided with adequate ease and convenience. Rahman (2020) and his fellow researchers have carried out the research to identify the different aspects that are associated with the online pharmacy management system. The paper thoroughly discusses the design and implementation of an effective online pharmacy system and how it can

serve the consumers. The developed system provides a huge drug storage system along with the provision of rare drugs to the consumers. The framework will contribute towards making the online pharmacy mechanisms more reliable and effective due to which a lot of consumers will be attracted towards its utilization.

Another step towards modifying the online pharmacy frameworks is the enhancements in the online pharmacy management system. Rony (2020) and his fellows have worked on the development of an effective and proficient online pharmacy framework that can prove to be quite beneficial for people to get the desired healthcare products without even physically visiting the market. It is a fact that online pharmacies have become popular nowadays but as previously discussed there is some sort of risks associated with the process too. Purchasing medicines from non-regulated online pharmacies can sometimes prove to be detrimental for the patients as there is a chance that they can be provided with low-quality products. Rony and his team have developed a system that provides safe, secure and verified platforms that help to differentiate between contacts and provide valid medicines. Furthermore, the work can also be helpful to reduce the amount of imitated drugs within the market and the criminals would not have any such opportunity to capitalize in this regard.

BAJPAI (2021) has also made some significant contributions in this regard as he has worked on the development of an application that can be used to avail medicine from all over the overworld with the help of a single click. The user can submit a request for medication through the website along with the option to purchase medication through the internet. Medicine is delivered to consumers by the associate store that is the most convenient for their location. To place an order for medication, the consumers must first obtain a prescription from their doctor. Users can search for medications and other useful information on the internet based on the

prescription they receive from their doctor. This application provides information on how to consume the medicine properly regularly. A user login is required for access to this application by the customer. In addition, the administration has access to all expired medication information, as well as all client order information, among other information. A major objective is to reduce the amount of time and effort that customers expend during the process of purchasing medicine. This work has contributed majorly towards the betterment of online pharmacy mechanisms and due to this, the vendors have been able to attain the desired satisfaction from the consumer' end.

Trada (2021) and fellows have thoroughly explored the significance of online pharmacy and the benefits it can provide to consumers. It has taken the Internet twenty years to establish itself as the preferred method of purchasing goods and services on the internet. Consumers across the globe can purchase medicine directly from companies through an online pharmacy, which lowers the cost of medicine by removing the need for a middleman to act as a go-between between the company and its customers. Aside from that, purchasing medications over the internet is also an option. Online pharmacies, even though they provide numerous advantages, are associated with some safety concerns when used outside of the traditional supply chain. These are the risks that have also been discussed previously in this literature review and the major risks come when the consumers do not know whether they are purchasing the goods from a regulated source or a non-regulated source. Some studies should be conducted to explore the methods that can be utilized by the people to ensure the fact that they are purchasing their medicines from a patent source.

Considering the importance of online pharmacies and effective management frameworks, it is quite evident that some more work has been done in this regard and the development of web applications is also one of the core advancements. Patil and More (2019) have worked on such an application that can help consumers to purchase their desired medicines conveniently. These

days, there are a plethora of web-based applications for online medication shopping to choose from on the market. Consumers have become able to order prescription drugs that are not considered necessary to be purchased with a prescription as a result of the existence of these websites, however. It is possible to order non-prescription medications such as narcotics, and other non-prescription medications online as a result of the availability of this shopping application. As a first step toward resolving this issue, both the authors have included some authenticated online pharmacies to sell medications. To reduce risk while simultaneously increasing benefits, Patil and fellows have implemented a three-tiered approach for online medicine shopping that is described below. When placing an order for medications, the consumer will first upload a prescription for the medications that they require. This prescription will then be reviewed by registered doctors on the site in the second stage, and only those prescriptions that have been approved will be able to proceed to stage two of the ordering process. In addition to reducing the chances of illegal sales, it will also protect consumers from the side effects of self-medication by preventing them from becoming addicted. The framework developed by Patil will contribute massively towards the success of the online pharmacy and the consumers will also be able to develop a trust regarding the online purchasing of medicines and other relevant goods.

The pandemic has impacted the world in numerous ways. All the conventional processes have been modified all together and the people have found it difficult to cope with the changes and modifications they have to experience in the processes. As the movements were restricted due to the lockdown in different areas, the process of purchasing goods and services was also changed drastically. Like all the other goods and services, the purchase of medicines was also quite a challenging task for the consumers as it was not easy for them to purchase the desired

medicines and the health care services conveniently during the pandemic. Pharmacy services are critical to the public's health in this pandemic situation, and they play an important role in this. In China, where the covid-19 outbreak began, recent data on consumer behaviour and habits have revealed that the country has implemented some safe and preventive measures during the lockdown and social distancing period, which had resulted in an unavoidable uptick in eCommerce activity. Electronic pharmacies (e-pharmacies) are becoming increasingly popular because medications can be ordered with a single click and conveniently delivered to the customer's doorstep. Although this practice has benefits, there are risks associated with it, including drug misuse and self-medication, which is particularly true for drugs. Furthermore, the authors have examined the fundamental issues and challenges associated with the online pharmacy, as well as how it can be beneficial to both society and the pharmaceutical industry in the event of a pandemic outbreak.

Pharmaceutical Industry in Germany

- Celesio Pharmacy

Celesio is a well-known global commerce, logistics, and services organization that specializes in the pharmaceutical and healthcare industries, among others. In order to ensure that patients receive the best possible treatment and assistance on a proactive and preventative basis, the company's objective is to provide the best possible care and assistance by offering the best possible care and assistance. This multinational corporation with operations in 27 countries employs a total of more than 46,000 employees in various locations throughout the world. Celesio, according to the firm, serves more than two million consumers every day through its network of more than 2,200 owned pharmacies and 4,500 partner and brand partner pharmacies in addition to operating more than 2,200 owned pharmacies. A total of up to 130,000

medications are delivered by Celesio to around 65,000 pharmacies and hospitals through a network of approximately 140 branches, for a total of up to 130,000 drugs being supplied through its network. 10 The organizational structure of the corporation is separated into three main segments, as shown below.

- Pharmacy solutions
- Patient and consumer solutions
- Manufacturer's solutions

Those working in the pharmacy solutions industry are involved in the wholesale distribution of pharmaceutical products. Over 130 wholesale facilities serve more than 65,000 pharmacies on a daily basis, and the company employs more than 2,000 people. Pharmacies and the pharmaceutical business benefit from the wide range of items available in this area. With the support of its subsidiary organizations, it conducts its pharmaceutical wholesale business in twelve European nations as well as in Brazil. Through its wholly owned subsidiary Rudolf Spiegel Versand, the department is also involved in the pharmacy fittings and equipment industry. It also owns a company that is dedicated to the development and promotion of pharmacy websites, in addition to its other endeavors. The patient and consumer solutions section, according to the corporation, is active in the pharmaceutical distribution sector, among other things. More than 550,000 consumers are served on a daily basis by the company's approximately 2,300 retail pharmacies, which are spread across seven countries. The Lloyds Pharmacy brand is owned and administered by the division in the United Kingdom, where it has a total of 1,700 retail pharmacies under its ownership and management.

- Movianto Group

Since 2004, the Movianto Group, a completely owned subsidiary of Celesio, has dedicated itself to being the preferred contract logistics service provider to the pharmaceutical,

biotechnology, and health-care industries. The company has evolved through a combination of acquisitions and organic expansion to provide outsourcing services throughout the supply chain, including warehousing, shipping, cold chain logistics, as well as re-packaging and re-labeling of items. In addition to a pan-European network, a full range of healthcare logistics services, in-depth knowledge of the local markets, and high quality standards, Movianto provides a number of other benefits to its international clients. It has been a remarkable five years for the Movianto Group, which has seen substantial expansion. An administration team of more than 1,800 healthcare experts is responsible for overseeing more than 275,000 pallet locations dispersed across a network of wholly owned companies in 11 different countries within the European Union. They provide a broad range of cutting-edge logistics and distribution services, including the storage and transportation of goods, for the pharmaceutical industry and beyond, as well as other industries. Currently, the Movianto Group has offices in a number of countries, including Belgium, the Czech Republic, Slovakia, Denmark, France, Germany, the Netherlands, Portugal, and Spain, amongst others. With the establishment of a network of distribution centers throughout Europe, Movianto was able to construct local and regional warehouses as well as a Central European Warehouse (CEW) from which to replenish the other sites. Movianto provides a comprehensive range of services to customers ranging from manufacturers to consumers and patients, among others. Products that require special handling or storage can be handled and stored properly by Movianto, which is capable of meeting all applicable national standards. Aside from that, they are able to retain proper custody and control of the goods due to the broad scope of their activities, which alleviates any issues or liabilities that producers may have.

- SANICARE

In the words of the corporation, it is one of the most important internet pharmacies in Germany today. BS-Apotheken OHG chose to implement the prudsys Engine into their online pharmacy as part of their commitment to offering targeted, customized guidance. This decision also provided them with the opportunity to bring the linked newsletter to fruition. BS-Apotheken OHG sets a high value on providing excellent customer service, and this is a major priority for the company. To provide clients with a more delightful shopping experience, it should be possible for them to benefit from personalized recommendations both in the online shop and through the company's newsletter. When intelligent personalization solutions are implemented, it is reasonable to anticipate an increase in customer happiness as well as an increase in revenue from referral sources. To ensure that customized content is relevant to and accepted by the target audience, BS-Apotheken OHG has set a high standard for itself (the customer). prudsys Real-time Engine has been selected by the Bad Laser-based organization as the most appropriate solution for their requirements. Choosing goods from the prudsys RDE is based on your unique requirements, resulting in an exquisitely precise fit that is simple to maintain. Real-time algorithms, which are both clever and efficient, make it possible to accomplish this by continuously examining client behavior and reacting in real-time to any changes that take place. Companies such as SANICARE, which offers customized product recommendations on different sections of its online shop, give customers personalized shopping experiences tailored to their needs. Prudsys RDE has published a study explaining how it is always trying to improve the quality of its ideas by learning from the click behaviors of its customers in real-time, as the company describes in the paper. As a result of the partnership, the expertise developed via the use of the customization software in the online shop is shared with the partner pharmacies, who can capitalize on this newfound information. It is feasible for them to include this technology

into their online business to participate in the process of online networking. Current fashion trends and best-sellers can be promoted effectively with this strategy, and it is particularly useful in the fashion industry. As soon as a SANICARE email is opened, the prudsys RDE instantly generates a unique piece of material for every individual receiver. Among these features are the following: when a SANICARE email is opened, the prudsys RDE automatically generates unique content for each receiver. As a result of this approach, the inventory and client requirements are always up to date and proper. As a result of the adoption of the RDE from Prudsys for SANICARE, Aliva, and Medicare customers, a targeted and personalized customer approach will be provided in the online shop for these firms' customers. The company also uses the RDE to discover current trends and makes this information available to their partner pharmacies so that they may continue to market their products to their customers as well as to customers of their partners' customers.

Critical Evaluation of the Literature Review

Digitization is the incorporation of any digital media into the overall business model of a company. Customers rate the products or services based on their own experiences with the products or services. Different mobile technologies can assist organizations in achieving their various health objectives through the use of different mobile technologies. In the context of mobile health, the term can be considered m-health, and it has the potential to significantly alter the way services are delivered around the world. This is also true for small and medium-sized enterprises that provide a variety of services, such as a pharmacy. There should be an effective combination developed that includes the majority of the factors affecting the change in terms of new relationships between the company and its customers.

This section has gone into great detail about the concept of digitalization, as well as the implications of digitalization on consumer satisfaction and customer loyalty. Furthermore, this

section contains a thorough overview of the current state of the online pharmaceutical industry. When it efficiently comes to research, the findings of this section may prove to be quite useful.

The impact of digitalization has been tremendous in almost every field of life and like all the other fields of life, the pharmaceutical industry is also subjected to the adaptation of the digitalized measures for the effective execution of the operations. The trends of consumers and how they react to the adaptation of digitalization have also been explored in this literature review section. After exploring consumer behaviour and the online pharmacy in Germany, some of the generic aspects regarding online pharmacy have also been investigated based on consumer behaviour and the importance of online pharmacies across the world. All the research works that have been explored were quite comprehensive and have provided an exclusive in-depth insight into the subject of the research. However, there was some sort of gaps observed in the research as there was not much evidence available regarding the attitudes of the consumers towards online purchasing and the availability of regulated pharmacies on the internet. The consumers of Germany are the most difficult ones to handle as they always want a thorough description of the products and services. So, the uncertainty of regulated firms available online may impact consumer behaviour in Germany. It is a kind of gap that needs to be filled in the future. The research will utilize all these findings to make sure that all the gaps in the previously conducted studies are covered effectively.

The term digitalization refers to the adoption of any digital media into a company's overall business strategy. Customers give ratings to products and services based on their own personal experiences with such products and services. The application of various mobile technologies can assist organizations in achieving a variety of health-related objectives. The term "mobile health," often known as "m-health," refers to a concept that has the potential to change

the way services are given all over the world. This is especially true for small and medium-sized enterprises (SMEs) that provide a variety of services, such as a pharmacy. The majority of the pieces that are responsible for the transformation in terms of new interactions between the organization and its customers should be brought together to make a potent combination. Various applications and technological advancements provide new opportunities for incorporating mobile health into existing services. The quality of the various services provided by the firms will improve as a result of this. Pharmacy services have advanced in their role as a clinical sector. A significant transition has occurred from a profession that was mostly focused on products to one that is primarily focused on patients. In various nations, the business has been exposed to a variety of specific safeguards, resulting in it being considered one of the most severely regulated industries in existence. It is possible to tell the difference between a service and a product by specific characteristics. The qualities of the product and the services are two of the most important considerations in this regard (Noor, 2008). As a result, there will be no distinction between the service provider and the service supplied. It is in the interest of service providers to digitize their operations since they would be able to collect consumer feedback immediately after providing the service. Customers' pleasure and loyalty are important concerns in today's business world because firms cannot afford to spend money or other resources on gaining new customers all of the time, as is the case in many other industries. If effectively implemented, digitization can be beneficial to organizations in two ways: it may save expenses while simultaneously increasing customer satisfaction.

Research Approach

There are different research approaches that can be used by the researchers in order to carry out the research effectively and the most prominent approaches are the quantitative and

qualitative approaches. The purpose and significance of qualitative research is to give context for the subject matter under investigation. It is possible to produce results that are robust and significant in their foundation when quantitative and qualitative research methodologies are used together. Collaboration between quantitative and qualitative researchers results in the acquisition of more specific information, which may aid in the clarification of the problem or scenario at the heart of the research project ¹⁰. The distinction between qualitative and quantitative approaches is unambiguous: qualitative methods capture the 'implicit system or perspective,' whereas quantitative methods record just the 'explicit system or perspective,' as the term indicates.

The research methodology serves as a blueprint for the researchers, facilitating in the formulation of research questions and objectives or goals. This roadmap plan also makes it easier to analyse the insights gleaned from the data obtained during the research. According to the study, methodology refers to the map or sphere, while method refers to the actions that help individuals get from one point to another. Methodology is defined as the framework for carrying out research in accordance with a particular paradigm or viewpoint. It includes the prescription of essential sets of beliefs that aid in the decision-making process when choosing one set of research methodologies from a variety of options. This chapter describes the research concept, technique, and population, as well as the sampling strategy, data collection instrument, and statistical software used to extract the results.

Qualitative Research Problem

In general, a qualitative research problem is defined as a form of exploratory study that is conducted by a researcher in order for gaining a comprehensive understanding of the existing problem as well as the motivations, situation, and perspectives of those who are interested in the

¹⁰ Fang-Yi Lo, Andrea Rey-Martí, and Dolores Botella-Carrubi, "Research Methods in Business: Quantitative and Qualitative Comparative Analysis," *Journal of Business Research* 115 (July 1, 2020): 221–24,

topic under examination. Further definitions for qualitative research difficulties include identifying a subject issue for a study and conducting an examination into that particular problem or condition as a result of gaining greater understanding into it. Qualitative research has several advantages, including the ability to provide insights into a topic as well as the development of concepts or hypotheses for future quantitative studies.

Qualitative research methods are implicit in nature because they rely on behavior of human for acquiring info or data about a specific theme; on the other hand, quantitative research methods are explicit in nature as the researcher is required to ask a series of questions in order to obtain information or data. The difference in technique depicts that the data for conducting qualitative research by a researcher will be obtained through observation of human behavior or storytelling, whereas a researcher using quantitative research methods will gather data through the use of statistics or numerical data collection methods (Farrokhi & Mahmoudi-Hamidabad, 2012). When it comes to qualitative research, the focus is more on discrepancies in quality than it is on disparities in quantity of data collected. Quality rather than quantity is more important in qualitative research methods, which typically involve fewer participants compared to methods of quantitative research that are dependent upon an extensive base of participants for data collection because they place a greater emphasis on the quantity rather than the quality of data collected. In terms of research methodology, both qualitative and quantitative methods have their own set of advantages and limitations.

Compared to quantitative research methods, which are concerned with using generalizations obtained through statistical analysis of data as the central idea behind the study, qualitative research methods are concerned with selecting a sample of a relevant segment of the target population for conducting a research. This is a significant advantage of qualitative research

methods. Because qualitative data is generally used for exploratory reasons and is subject to many interpretations, it is particularly vulnerable to claims of bias and personal subjectivity. While quantitative research methods are advantageous in that they allow for a more in-depth study of the data obtained, the downside is that they restrict the consumer of the data or information from making an informed decision based on the data or information that has been acquired. And, because quantitative research methods do not contain the underlying or deeper insights that are necessary for a much larger data set, the consumer of information gathered through quantitative research methods may make inaccurate decisions and reach wrong conclusions. Quantitative researchers use quantitative research methods to assess phenomena, problems, and situations, whereas qualitative researchers use qualitative research methods that are more concerned with offering an interpretation of the phenomena, problem, and situation under consideration.

Quantitative research has several fundamental flaws, one of which being the difficulty to detach emotions from the subject in order to avoid biases, however this has its advantages in hard scientific academic areas such as astronomy. In the realm of human behavior, however, because emotion is the major focus of investigation, quantitative research approaches may be limited in the amount of data they can collect and interpret. Emotion is a major component of qualitative research methodologies, which is significant for studying human behavior and behavior patterns. Consequently, qualitative research methods are more effective in terms of producing more in-depth and solid data than quantitative research approaches. One of the advantages of qualitative research is that it integrates an element of emotion into the process.

The qualitative and quantitative research methods will be used in this study. The participants will be provided with a questionnaire based on standardized questions and their

answers will be utilized by the researchers to examine the digitalization and its impact comprehensively. This will be a mixed research methodology where a total of 50 participants will be involved in the research process. The information will be gathered at different pharmacies where the marketing managers and the loyal customers of the target pharmacies will be the main target segment of the research. The major variables will be the expectation of the people regarding online pharmacy, their preferences, their satisfaction and loyalty.

Research Features

Trustworthiness is one of the major features of a high-quality research. This research is carried by considering all the necessary aspects that can make the research process credible. The participants will be informed regarding the process and if they agree to participate only then their input will be considered. Moreover, the results are recorded by using electronic gadgets so that the information remains secure. There are different ethical aspects that are considered during the research process. The identity of the participants is kept confidential and only those participants are selected who agreed to participate in the process willingly. Moreover, work of other researchers is also not utilized without their consent and all the important information of the research is only shared with the concerned persons.

Research design

The objective of the study, the researcher's strategy, how or where it is carried out, data evaluation, time frame, and so on are all part of the research design. The intricacy of research design is dependent on the type of study under investigation and the hypothesis that was generated for validation. Some research approaches necessitate the gathering of primary or direct data, while others entail the gathering of secondary data. However, certain designs require the use of both primary and secondary data. Considering the various or distinct forms of data

collecting for various designs, it is vital for the researcher to make a precise choice of research designs because it determines the overall plan or strategy of the study that the researcher will pursue.

The methodologies or approaches that will be used in the specific study are referred to as research design. It gives adequate or enough information to carry out the research. The threshold or initial points for constructing a study design are research questions and objectives, as they are equipped with information about the model that the researcher is pursuing for evaluation ¹¹. The researcher is responsible for selecting appropriate study designs. It also simplifies the validation of hypotheses. Furthermore, several variables at a single point in time can be managed effectively.

The extraction of assumptions from a preceding theory is referred to as the deductive approach. This method is useful in the advancement of knowledge by implying hypotheses from existing theories. Theories that have been validated are regarded rational, while theories that have not been validated are eliminated. This method contributes to increasing the level of knowledge by inferring hypotheses from existing ideas. Theories that have been validated are regarded rational, while theories that have not been validated are eliminated. The deductive method will be employed in this investigation as the hypotheses have been developed based on the existing literature.

Conceptual Framework

Independent Variable Dependent Variable



¹¹ Lo, Rey-Martí, and Botella-Carrubi.

Customer happiness and loyalty in the online pharmaceutical industry in the German market are the key emphasis of this conceptual framework, which is based on research conducted in the field. Digitization, as the name implies, is the process of integrating any digital media into a company's overall business strategy and operations. The ratings that customers give to items and services are based on their personal experiences with the products and services in question. Organizations can achieve their various health objectives through the use of a range of different mobile technologies, which can be accessed and used by employees via their mobile devices (Banda, 2009). In the context of the phrase, mobile health is referred to as m-health, and it has the potential to drastically revolutionize the way services are offered all across the world, including in developing countries. Additionally, this is true for small and medium-sized businesses that provide a varied range of services like pharmacies. Ideally, all of the elements that influence the shift in terms of new interactions between an organization and its clients should be included in an unified strategy that is well-coordinated and effective. Consequently, digitalization has had a significant impact on virtually every element of human life. Pharmaceutical companies, like all other businesses, have been compelled to implement digitalized systems in order to ensure that operations are carried out as quickly and efficiently as possible. The customer behavior patterns and how they respond to digitalization modifications were also examined in this component of the literature study. As part of this research, the researchers looked into customer behavior and the online pharmacy industry in Germany. Several general characteristics of online pharmacy were researched as a result of this investigation, taking into consideration consumer behavior as well as the global significance of online pharmacies. Everything that was reviewed was fairly extensive and provided an in-depth look at the research topic that could not be found anyplace else.

In addition, there were some gaps in the research since there was insufficient information available about consumer views toward online purchasing and the availability of licensed pharmacies on the internet, both of which were crucial elements in the study. Customers in Germany are the most difficult to deal with because they want a detailed description of the items and services that are being supplied. Consequently, the scarcity of regulated enterprises available online in Germany may have an impact on consumer behavior in the country, as previously stated. Essentially, it signifies some sort of void that will need to be filled at some point in the near future. Everything that has been learned will be included into the research to ensure that all of the holes found in prior studies are completely filled in future studies

Research aim

The purpose of conducting this research is to estimate the impact of digitalization on consumer satisfaction and loyalty in the online pharmaceutical industry of Germany.

Main Research Question

How can the online mode of operations impact customers' behaviour, loyalty, and satisfaction in the pharmaceutical industry?

Research Sub Questions

1. What kind of communication exists between the online pharmacy stakeholders and the customers?
2. Are the customers satisfied with the utilization of online tools to place an order of their required medicines belonging to different genders and age groups?
3. How many customers are comfortable with the online mode of payments?
4. What are the factors that determine the preferences of customers to shift towards online pharmacies?

Research Objectives

The core objective of this study is to explore the impact of digitalization on the relationship between customers and online pharmaceuticals and to suggest new methods if any kind of improvements are required. Moreover, the core objectives of the research are:

1. To study the impact of Digitalization on consumer' satisfaction in the online pharmaceutical industry in Germany.
2. To analyze consumer awareness regarding the online pharmaceuticals in Germany.
3. To explore consumer preferences about online pharmacy in the Germany.
4. To estimate consumer's loyalty and satisfaction with online pharmacy in Germany.
5. To determine the aspects that can influence consumer's selection for online pharmacy.
6. To recommend the aspects that can influence consumer's selection for online pharmacy.

Research Methodology

When it comes to data collection methods, it is the study project in question that determines which procedures will be utilized to assist with the job and which processes will be employed to assist with the data gathering in order to complete the project. It will be necessary to measure variables and test previously stated theories and hypotheses in order to complete the research if it is determined that quantitative information is required. A research technique is defined as the process of finding the outcome of an issue in question that is related with a specific subject or material, which is referred to as a research problem, according to the most precise description. The process through which researchers find or discover a solution to a certain study issue that they are interested in examining is known as the application of research technique.

More specifically, in this context, a methodology is a method that was used in the search for a solution to the study topic that was being considered. When conducting research, researchers typically strive to investigate the subject issue in a methodical manner and using a variety of methodologies in order to find all conceivable solutions until a conclusion has been reached throughout the research phase. It will be impossible to come up with a viable result or conclusion in this circumstance, for example, if the research team does not approach the subject in a systematic manner. The vast majority of problems that researchers encounter can be fully avoided by adopting the most appropriate research approach for the subject at hand, which is even more important in today's age of information overload because of the abundance of information available.

A research methodology can relate to both the theoretical and methodological examination of the processes that were used in a research study as well as the actual procedures that were carried out during the investigation. According to this interpretation, the definition encompasses the theoretical exploration of the various techniques and concepts linked with a specific subject of knowledge. Some of the parts of a typical model include, among other things, a theoretical model, a paradigm, and stages, as well as qualitative and quantitative methodologies, among others. Various research methodologies can be used to demonstrate the influence of digitalization on consumer happiness and loyalty in the online pharmacy sector in Germany, depending on the goals of the study. To ensure that the most relevant data, conclusions, and conclusion are delivered, it is vital that the most appropriate approach for this research be identified and implemented.

Types of Research Methodologies

Currently, the two most commonly used types of methodology in research are those that are based on qualitative procedures and those that are based on quantitative techniques. Qualitative procedures are the most commonly used type of methodology in research. In quantitative research, the goal is to quantify a large number of diverse items in order to better understand them. Examples of questions to consider include how many people should participate, how much time should be spent participating, and how long should be spent participating. The difference between qualitative and quantitative approaches is that qualitative approaches are concerned with recognizing patterns in data collected from a larger population of things, whereas quantitative methods are concerned with measuring data and drawing generalizations from a sample of things drawn from a larger population of things. A range of quantitative approaches are employed in order to determine the prevalence of distinct points of view and viewpoints in a specific sample or in aggregated data sets. A qualitative technique's goal when dealing with high-quality information, according to the researcher, is to gain an understanding of the fundamental reasons and motives that motivate individuals to act, as well as to establish a general understanding of how different people perceive the world and their experiences in it. Aside from providing insight into the problem environment, they may also provide suggestions and hypotheses for additional inquiry.

Quantitative Approach

The quantitative research techniques refer to the numerical representation and management of data that is used to describe and explain the phenomena represented by the observations. This is also referred to as quantitative data analysis or quantitative data representation. While quantitative research is concerned with using empirical processes and formulating findings, qualitative research is concerned with generating hypotheses. A descriptive

statement about what actually occurs in the real world, as opposed to a statement about what should occur in the real world in this context, is referred to as an empirical claim in scientific literature. Another component of quantitative research that is used in the field is the empirical evaluation of a policy or program. When it comes to policy or program evaluation, empirical evaluation is a type of assessment that aims to determine the extent to which a policy or program complies with or fails to comply with a given norm or standard. Empirical evaluation can be used to determine the extent to which a policy or program complies with or fails to comply with a given norm or standard. There are many different forms of quantitative research and procedures available, including experimental research, causal-comparative research, correlational research, and survey research, to name a few examples.

Quantitative Survey Research

A measurement strategy must be employed in order to obtain information from respondents as part of a measurement operation. The fact that it is a flexible methodology means that it may be used to gather both qualitative and quantitative information about the way questions are structured and processed. In order to provide a response to the research question that was given at the outset of the process, it is critical to remember that this technique is utilized to collect primary data from a diverse range of sources. The material for survey findings is gathered from a diverse range of sources, including organizations, individuals of the community, and corporations. Using survey instruments is one of the most important types of measurement to consider when conducting applied social research, and it is one of the most time-consuming. Before conducting a study, the researcher must first choose who he or she wishes to survey, how to select the audience, how to conduct the survey, how to ask the questions, and how to organize the tasks in order to be most efficient in their efforts. It is necessary to take a number of factors

into account in order to apply this method efficiently. These factors include population, whether or not the population can be counted, language challenges, and geographical limits. As a consequence of this method, we may acquire information from German pharmaceutical companies, which we can then use to investigate the impact of customer loyalty and happiness as a result of digitalization, which is precisely what we are seeking to uncover with our research topic.

Secondary Data Collection and Analysis

It is the primary focus of this method's work on a specific subject to conduct a review of current knowledge on that issue. In order to achieve its objectives, this strategy relies on the modification of statistical data, which is a vital component of the strategy's quantitative framework. Neither primary data nor control over the data gathered can be obtained using this technique because the researcher is unable to gain primary data directly from the source and because he is unable to retain control over the data collected. It is possible for a researcher to gain new insight into his or her subject matter when data is evaluated and presented differently. As a result of the fact that this approach primarily provides secondary data, it can be utilized as a starting point for additional research or study in order to get a more comprehensive understanding and knowledge of a specific topic or subject area in general. When conducting research, primary data is collected; however, secondary data is acquired to assist in the analysis of the results and the interpretation of the results.

When performing this type of research, a number of factors must be taken into consideration, including official statistics as well as other data. Researchers should think about specific issues and problems that need to be addressed, and then look for acceptable information that covers those topics and difficulties, according to their findings. As a side note, after

acquiring the materials, the researchers evaluate them and conduct an analysis, after which they classify the information into categories that are relevant to the research question. These technologies are widely used to generate maps and other graphical output in addition to giving data tables and statistical reports. The researchers will be able to obtain secondary information about the performance of the German pharmaceutical market in previous periods when the trend of technology was not as widely adopted as it is now as a result of the usage of this method, which will assist us in answering our research question.

Statistical Analysis

To know how to examine and correlate different sets of data, the term "correlation analysis" can be used. Correlation analysis is a mathematical approach that involves cross-examining data to do so. This is accomplished through the use of descriptive statistics, which are based on numerical results of samples, and inferential statistics (which are based on data from representative samples of the population), which are based on data from representative samples of the population. Descriptive statistics are based on numerical results of samples, while inferential statistics are based on data from representative samples of the population. When comparing two samples, descriptive statistics are based on numerical results, whereas inferential statistics are based on data from representative samples of the entire population. In order to make data useful for decision-making reasons, statisticians summarize and assess it; this, in turn, is more explicitly what statistical analysis is all about; this, in turn, is more explicitly what statistical analysis is about. As a contrast to descriptive statistics, which is useful when condensing a large amount of information into a smaller amount of information, inferential statistics is used when developing a link between two or more variables in order to make an inference about the entire collection of data or to predict the outcome of the entire collection of

data. According to the definition, inferential statistics are a subset of statistics that are used to make conclusions or predictions about the full collection of data. But it is recommended that this method be used only when the researcher has a clear understanding of the reasons for putting the strategy in question into effect in the first place. When doing statistical tests, the researcher must be familiar with how to interpret the results and incorporate them into the rest of his or her research endeavor if he or she is to arrive at useful conclusions. This method must be used with care since it involves a number of factors that must be considered. These factors include variables, inferences, confidence intervals, and statistical significance, among other things. When determining whether or not there is a relationship between digitalization and the impact of customer loyalty in Germany's online retail sector, statistical analysis can be used to determine whether or not changes in digital technology have an impact on the performance of the pharmacy market in our research question.

Qualitative Approach

They are meant to evaluate social dimensions in order to generate ideas and thoughts that will be used to feed the research process in the future, in order to produce rich and detailed data in the future. They are, however, unable to provide an estimate of the number of people who feel or believe in a particular way. They can only supply information on the emotions and thoughts of others. Several other types of qualitative research methods are available, which will be discussed in the upcoming sections of the paper.

Survey/ Questionnaire

It is intended that participants provide both quantitative and qualitative information about themselves as part of this study, which is conducted using a questionnaire-based research technique. When collecting many forms of information from a large number of respondents, this

technique should be employed because it produces more reliable results. The researcher must take into account a variety of criteria in order to obtain qualitative data that is rich and detailed, including the sample population, sampling process and format, questions to ask, and the administration of the procedure, among other things. The following are some of the elements to consider when making a decision: Conducted over the phone, via the internet, via email, via postal mail or in person are all possible methods of conducting these surveys. In order to answer our study question, we must gather information from the managers of publicly listed firms or from investors in stock markets. As long as the information obtained is reliable, we can utilize the information obtained through this technique to solve our study question. Several fundamental variables will be explored and investigated in order to carry out this research. These variables include digitalization, digitalization in Germany, customer satisfaction and loyalty, online pharmacy and online pharmacy in Germany. The definitions of these five variables are given below:

Digitalization

Digitalization is a concept that refers to the use of internet platforms to carry out a variety of functions, including shopping. Because of its ease and convenience, it has enabled people to complete their chores in half the time it would have taken them if they had used more traditional methods of accomplishing them. A variety of benefits accrue to people as a result of digitalization, including easier access to everything, increased brand recognition, social connection, and increased economic potential, among other things. According to studies, digitalization is a critical source of innovation as well as a source of competitive advantage, because more effective and efficient operations give an organization a competitive advantage over its competitors. Also revealed are the findings that the greater the number of organizations

that use digital technologies to alter their operations, the greater the amount of value that is created. Due to the fact that digitalization is an external catalyst for increased use of digital technologies in the value creation process, the reason for this is that digitalization is an external catalyst for increased usage of digital technologies.

Digitalization in Germany

Germany is not technologically advanced in terms of digitalization because the government's primary focus is on infrastructure development, such as roads, buildings, and electricity grids, rather than on information technology. As well as identity theft and fraud, there were some privacy risks associated with the internet that needed to be addressed. There is always a significant link between digitalization and a country's political state, which means that the majority of things are dependent on political stability in order to function properly. The situation in the country, however, is gradually improving in terms of digitalization as time goes on. The country is now recognized as a favorable place for the implementation of digitalized procedures, according to industry experts. The principles of online pharmacy and consumer satisfaction are intertwined with the concept of digitization. It has also offered people with a means of efficiently carrying out daily duties while also saving a large amount of time, which has been extremely beneficial. Pharmaceutical companies, like other industries, have adopted digital technologies to provide clients with faster and more efficient service. This section will explain consumer satisfaction and loyalty by diving into the key components that contribute to the occurrence of these emotions and behaviors.

Customer Satisfaction and Loyalty

Loyalty and satisfaction among customers are two of the most essential issues in the corporate world. Because these attributes are so important to a company's success, management

must focus on improving processes that will aid in the improvement of customer interactions. When it comes to implementing novel solutions based on web technologies to improve corporate operations, the business world is understandably cautious. A given that the importance of online methods of doing business, it is clear that the clients are just as important as the online mode of doing business in this context. When it comes to providing clients with the desired level of quality in products and services, online platforms must make certain that they do so in order for them to be drawn into using the company's services. In addition, it can contribute in the development of consumer loyalty and overall pleasure. Utilizing digital technology has enabled pharmacies to conduct their operations more efficiently while maintaining the high level of client satisfaction that is required. It is not necessary for customers to physically visit the market in order to receive timely and effective service. As part of this comprehensive study, it is possible that some trade will be associated with digitalized modes of operation, which will be investigated.

Online Pharmacy

Because of the growing importance placed on digitization, every company, including healthcare systems, seeks to achieve success through the application of digital technology to improve their operations. This is particularly true in the case of healthcare systems. A range of challenges, ranging from demographics to multimorbidity, are being faced by the healthcare system in response to an increase in demand for efficient care. It is believed that digital technologies will be useful in problem mitigation and the effective evolution of digital technology, which is why health-care companies are putting them in place. As part of its efforts to stay up with the digital revolution, the healthcare system must restructure, adopting a variety of strategies such as process restructuring and skill-mix efforts, in addition to technical

advancements. The increasing use of digital technology in the healthcare system has the additional benefit of facilitating the evaluation and treatment of real-world health concerns, which represents a substantial improvement over earlier generations. In order to improve their position within the care network and to support the measures required for good pharmaceutical management, e-health services must be employed to their maximum potential. If successful pharmaceutical management is to be achieved, it is necessary to plan and manage pharmaceutical activities effectively and efficiently.

Online pharmacy in Germany

The popularity of doing business online has surged in recent years in this country. Recently, this manner of conducting business has gained prominence, particularly during pandemics, when businesses were compelled to adopt this model in order to ensure pandemic preparedness and survival. According to recent studies, the pharmaceutical business is one of the most efficient and profitable in the country. According to the findings of the study, under this context, a technologically efficient framework is required to ensure procedural openness and accountability. The electronic health record system (EHR) is also in use in the vast majority of hospitals across the country, indicating a growing trend toward the use of digital measurements. Over the past few years, online pharmacies have grown in popularity, and people are becoming increasingly interested in using them to obtain the goods and services they seek.

The Best Methodology

Research is currently being conducted to better understand the effects of digitalization on consumer loyalty and happiness in the German pharmaceutical business, which is being investigated as part of the present research project in question. It is hoped that the findings of this study would provide a more accurate portrayal of consumer behavior in the pharmaceutical

business in Germany. Thus, in research inquiries, both quantitative and qualitative approaches may be employed, depending on the situation. Given that the desired outcome is mostly theoretical in nature rather than numerical in nature, qualitative research methods are the most appropriate way of investigation. The ability to respond to user data in a timely manner throughout the course of the session is made possible by its adaptability, which is one of the primary benefits of using this technology. Due to the fact that this method produces theoretical results, the researcher will be able to identify trends in the data and draw specific conclusions as a result of putting it into practice. This approach also makes it feasible to gather exact information that would otherwise be hard to obtain through other means. Instead, this technique allows for the acquisition of first-hand information that is more useful than information obtained from other sources, which is something that must be taken into consideration more seriously. Aside from that, this technique will enable the researcher to identify a big number of appropriate sources for the issue and to compare and contrast those sources. Consequently, more thorough findings and conclusions will be reached.

Population

In this study, the market managers who work in pharmacies in Germany as well as customers of the target pharmacies will be included as participants. Since knowing their perspectives about the linkages between digitization and consumer loyalty and happiness on online pharmacy will assist in making practical recommendations in this respect, the respondents to the survey will be those participants who have decision-making power.

Sample Size

The sample size is set around 50.

Data Collection and Analysis

The participants will be asked the questions in the form of a questionnaire and they will have to write their comprehensive answers against each question. The questions involve different parts, demographic questions, questions related to consumer satisfaction and loyalty, and questions related to the preferences of the consumers. Moreover, one-one interviews with the participants will also be conducted and most of the participants will be regular customers of the online pharmacies from different generations and some of them will be online pharmacy officials. This will be quite helpful in obtaining the desired information regarding the topic. The study will be descriptive as it will be describing the impact of one variable on the other.

Research Hypotheses

<p><i>H₁₀: Digitization does not have a significant impact on customer's satisfaction.</i></p> <p><i>H_{1A}: Digitization has a significant impact on customer's satisfaction.</i></p>
<p><i>H₂₀: Digitization does not have a significant impact on customer's loyalty.</i></p> <p><i>H_{2A}: Digitization has a significant impact on customer's loyalty.</i></p>
<p><i>H₃₀: Digitization does not have a positive effect on the sales of online pharmaceutical industry in Germany.</i></p> <p><i>H₃₁: Digitization has a positive effect on the sales of online pharmaceutical industry in Germany.</i></p>
<p><i>H₄₀: Customers do not prefer online buying of medicines in Germany.</i></p> <p><i>H₄₁: Customers prefer online buying of medicines in Germany.</i></p>

Sampling Method

The convenience sampling approach was chosen for the purposes of this study because, when compared to other sampling approaches, it appears to be a more appropriate sampling technique for the situation at hand (Stratton, 2021). When conducting market research, researchers employ

a sampling strategy in which the majority of their data comes from a precisely available pool of respondents who have taken the time to participate in the sampling operation. Convenience sampling is the most often used approach because it is technologically advanced, cost-effective, and simple to execute, making it the most popular. As in this research, correspondents are readily available and willing to participate in the research as active members of the research sample in cases when this is appropriate. As a result of using this sampling technique, the company hopes to enhance sales by targeting the right sample (marketing managers of pharmacies in Germany) as well as customers who make online purchases from these pharmacies. Convenience sampling is used by corporations in order to gain an understanding of how their profile is perceived in the marketplace (Farrokhi & Mahmoudi-Hamidabad, 2012). Using the information acquired from potential customers, we may better identify critical challenges or track the response to a newly launched product. If the situation necessitates it, it may be the only option accessible to the individual. Despite this, there is still a danger that the randomly selected population does not perfectly correspond to the sample of interest, causing results to be modified.

It is concluded that the key subjects discussed in the chapter on research technique are the target population, the research design, the hypotheses, the sampling procedure, and the variables used in the research. To explore the impact of digitalization on customer loyalty and happiness in the online pharmacy sector in Germany, we have picked five important characteristics that will be investigated in greater detail. Five major test variables, including digitalization, digitalization in Germany, customer happiness and loyalty, online pharmacy, and online pharmacy in Germany, serve as the foundation for the development of the study hypotheses. Additionally, the convenience sampling approach is being employed to collect data for this study since it appears to be more appropriate and relevant in this particular scenario for data collection, according to

the findings (Farrokhi & Mahmoudi-Hamidabad, 2012). An additional sample of 50 respondents has been selected from among marketing managers and customers of German pharmacies, and they will be polled as part of the research process. In the form of a questionnaire, the above-mentioned questions will be presented to the participants, and they will be required to complete the questionnaire by writing their complete responses to each question on the questionnaire. As a result of this, individual interviews with participants will be carried out, with the vast majority of participants being frequent customers of online pharmacies from a variety of generations, and just a small number of participants being representatives from online pharmacies. In the form of a questionnaire, the above-mentioned questions will be presented to the participants, and they will be required to complete the questionnaire by writing their complete responses to each question on the questionnaire. As a result of this, individual interviews with participants will be carried out, with the vast majority of participants being frequent customers of online pharmacies from a variety of generations, and just a small number of participants being representatives from online pharmacies. This will be incredibly valuable in gathering the information required for this deductive research study, which will be conducted using a convenience sampling strategy to obtain the information needed. The results obtained from the research will also be quite beneficial for the future researchers to further investigate the role of digitalization in shaping the corporate dynamics of the country and how the online pharmacies can take advantage from the digitalized mode of operations. Furthermore, an in-depth understanding of consumer behavior is also described in this research will help the business organizations to develop their strategies accordingly.

The consumer attitude and perception have evolved over time. This research compares the past and the current online shopping behaviors of different customers, primarily in the

pharmaceutical sector of Germany, accompanied by the presence of numerous variables. Some of these variables, such as digitization, i.e., updated digital technology, have recently been introduced, which have a substantial impact on customer behavior towards shopping. This digital platform seems convenient for several customers in terms of time and cost savings. Therefore, the record of previous trends differs from the current trends. Hence this hypothetical study has been designed in order to investigate and explore customer satisfaction and loyalty, along with the effect of customer conduct towards digitization. Moreover, it will also analyze the era of changes in shopping trends. For this purpose, variables are being taken from the present work of researchers¹². A sample has been taken in order to study the variables and test the hypotheses. Therefore, it is a hypothetical study where the analysis of the data assists in recognizing the relationship among the variables. Correlation is used as the statistical test for checking the association among the variable, for example, if people are motivated to shop online, then it will naturally result in their loyalty if the products and services are according to their expectations. This example shows the positive association between digitization and customer loyalty.

Purpose of research

The purpose of this research is to determine the possible variables upon which consumer satisfaction and loyalty towards digitization depend. Furthermore, evaluating the identified variables and comparing them to identify which variable bears the most significance in the present time is also a core feature of this research. Every possible variable was studied and evaluated individually. Hence, this research falls under the category of descriptive research because the study of the relationship between variables for consumer satisfaction and

¹² E Ndambala, Theresia Dominic, and Dev Jani, "Relationship Marketing and Customer Loyalty: Evidence from Tanzanian Pharmaceutical Supply Chain" (The 1st African Conference on Supply Chain & Operations Management (ACSCOM ...), 2018).

loyalty in percentages and the trend in digitization concerning the addition or subtraction of particular variables took place ¹³.

Types of investigation

In this article, all the variables used are clearly defined and have an association among them, which means that the first stage is connected with the second stage and the second one is connected with the third stage. In the third stage, the researchers worked on the relationship among the variables and their effect on each other. These variables include:

- Customer preference
- Loyalty
- Convenience
- Trust in online shopping

The extent of research interference

Since the study was conducted on present data with different percentages, no significant disturbance or alteration in the environment or placement of a new variable or an entity in the field and an artificial environment has been created; therefore, the researcher has minimum interference.

Study setting

Since the level of interference lies under minimum interference hence, the study of digitization drives for customers arises primarily in the pharmaceutical sector in Germany.

¹³ Prabhaker Mishra et al., "Selection of Appropriate Statistical Methods for Data Analysis," *Annals of Cardiac Anaesthesia* 22, no. 3 (2019): 297.

Unit of analysis

As the author declares shopping to be individual behavior, the research demonstrates how each individual acknowledges digitization concerning the TAM (Technology Acceptance Model).

Time horizon

The cross-sectional method is being carried out in this article because it can provide a thorough analysis of the topic. This article explores the reasons that cause people to prefer online shopping and the factors that drive them to do so, especially in terms of purchasing medicines.

The data for this research has been collected from the target sample, which is set around 50. The sample includes market managers who work in pharmacies in Germany. The questions were asked from the participants in the form of a questionnaire and they composed their comprehensive answers against each question. The questions cover various categories, such as demographic questions, questions related to consumer satisfaction and loyalty, and questions related to the preferences of the consumers. Moreover, one-to-one interviews with the participants were also conducted. Most of the participants were regular customers of the online pharmacies, along with different online pharmacy officials in Germany. This proved quite helpful in obtaining the desired information regarding this research topic. The study is descriptive as it describes the impact of one variable on the other.

Data Analysis Approach

For data analysis of this research, a correlation model has been used to determine, analyze and predict future trends based on the data collected from the target population. Correlation is one of the valuable statistical tools widely used in research analysis. Correlation depicts the strength of an association among two variables, i.e., dependent and independent

variables. It is numerically expressed using the values of correlation coefficient ranging between -1.0 and 1.0¹⁴. As far as perfect positive correlation is concerned, it brings exactly 1 value of the correlation coefficient. It is a precise implication of direction and movement of 2 variables, such as movement of one variable either down or up is followed by another variable in the same direction. On the other hand, a perfect negative correlation demonstrates the movement of two variables in opposite directions. Also, in the case of zero correlation, no linear association exists among variables at all. In the current scenario, out of 6 variables, 5 dependent variables within hypotheses, including customer satisfaction, customer loyalty, customer's preference, and sales revenue, as well as customer convenience, moved in a positive direction similar to the independent variable, i.e., digitization¹⁵. Hence, it is indicated from the values of the correlation coefficient that digitization has a positive impact on these dependent variables. Contrarily, the sixth dependent variable, i.e., the store-oriented customer is negatively correlated to digitization as both move in opposite directions.

So, correlation describes the extent to which coordination of variables is directed with each other. The Pearson coefficient of correlation and simple linear regression are crucial statistical tools for the analysis of the linear relation of statistical variables with each other. Nevertheless, both of these methods differ to some extent in nature. As far as the Pearson coefficient is concerned, it primarily measures the direction and strength of the linear relationship among two variables, excluding the causality assumption. Hence, correlation is reflected through the Pearson coefficient rather than causation¹⁶. On the other hand, basic linear regression is a way to determine the linear association between an explanatory variable and a

¹⁴ Patrick Schober, Christa Boer, and Lothar A Schwarte, "Correlation Coefficients: Appropriate Use and Interpretation," *Anesthesia & Analgesia* 126, no. 5 (2018): 1763–68.

¹⁵ Mishra et al., "Selection of Appropriate Statistical Methods for Data Analysis."

¹⁶ Schober, Boer, and Schwarte, "Correlation Coefficients: Appropriate Use and Interpretation."

response variable through a statistical model. Both correlation and regression models are used for making predictions about future trends.

Research Hypotheses

<p>H₁₀: Digitization does not have a significant impact on customer's satisfaction.</p> <p>H_{1A}: Digitization has a significant impact on customer's satisfaction.</p>
<p>H₂₀: Digitization is not convenient for a customer.</p> <p>H_{2A}: Digitization is convenient for a customer.</p>
<p>H₃₀: Digitization does not have a significant impact on store oriented customers.</p> <p>H_{3A}: Digitization has a significant impact on store oriented customers.</p>
<p>H₄₀: Digitization does not have a significant impact on customers' loyalty.</p> <p>H_{4A}: Digitization has a significant impact on customer's loyalty.</p>
<p>H₅₀: Digitization does not have a positive effect on the sales of the online pharmaceutical industry in Germany.</p> <p>H₅₁: Digitization has a positive effect on the sales of the online pharmaceutical industry in Germany.</p>
<p>H₆₀: Customers do not prefer online buying of medicines in Germany.</p> <p>H₆₁: Customers prefer online buying of medicines in Germany.</p>

Data Analysis

Table 1: Correlation between customer satisfaction and digitization

		Digitization	Customer Satisfaction
Digitization	Pearson Correlation	1	.593**
	Significant. (2-tailed)		.000
	N	50	50
Customer Satisfaction	Pearson Correlation	.593**	1
	Significant. (2-tailed)	.000	
	N	50	50

** . (2-tailed) coefficient of Correlation is significant at the 0.01 level.

Table 2: Correlation between convenient customers and digitization

		Digitization	Convenient Customer
Digitization	Pearson Correlation	1	.344*
	Significant. (2-tailed)		.014
	N	50	50
Convenient Customer	Pearson Correlation	.344*	1
	Significant. (2-tailed)	.014	
	N	50	50

** . (2-tailed) coefficient of Correlation is significant at the 0.01 level.

Table 3: Correlation between store-oriented customers and digitization

		Digitization	Store Oriented Customer
Digitization	Pearson Correlation	1	-.398**
	Significant. (2-tailed)		.004
	N	50	50
Store Oriented Customer	Pearson Correlation	-.398**	1
	Significant. (2-tailed)	.004	
	N	50	50

** . (2-tailed) coefficient of Correlation is significant at the 0.01 level.

Table 4: Correlation between customer loyalty and digitization

		Digitization	Customer loyalty
Digitization	Pearson Correlation	1	.885**
	Significant. (2-tailed)		.005
	N	50	50
Customer loyalty	Pearson Correlation	.885**	1
	Significant. (2-tailed)	.005	
	N	50	50

** . (2-tailed) coefficient of Correlation is significant at the 0.01 level.

Table 5: Correlation between sales revenue and digitization

		Digitization	Sales revenue
Digitization	Pearson Correlation	1	.91
	Significant. (2-tailed)		.429
	N	50	50
Sales revenue	Pearson Correlation	.91	1
	Significant. (2-tailed)	.429	
	N	50	50

** . (2-tailed) coefficient of Correlation is significant at the 0.01 level.

Table 6: Correlation between customer preference and digitization

		Digitization	Customer Preference
Digitization	Pearson Correlation	1	.612**
	Significant. (2-tailed)		.000
	N	50	50
Customer Preference	Pearson Correlation	.612**	1
	Significant. (2-tailed)	.000	
	N	50	50

** . (2-tailed) coefficient of Correlation is significant at the 0.01 level.

Results

Interpretation of Table # 01

The table shows the correlation between customer satisfaction and digitization. The result shows that correlation is 0.593 at 0% error chances, so the hypothesis is accepted as the result is 59.3% true. Hence correlation is strong.

The following tables contain findings of different types of customers that are inclined towards online buying in the pharmaceutical sector of Germany.

Interpretation of Table # 02

The table shows the correlation between convenient customers and digitization. The result shows that correlation is 0.344 at 1.4% error chances, so the hypothesis is not accepted as the result is 34.4%. Hence correlation is weak.

Interpretation of Table # 03

The table shows the correlation between store-oriented customers and digitization. The result shows that correlation is -0.398 at 0.4% error chances, so the hypothesis is not accepted as the result is negative -39.8%. Hence correlation is weak.

Interpretation of Table # 04

The table shows the correlation between customer loyalty and digitization. The result shows that correlation is 0.885 at 0.5% error chances, so the hypothesis is accepted as the result is 38.5%. Hence correlation is quite strong.

Interpretation of Table # 05

The table shows the correlation between sales revenue and digitization. The result shows that correlation is 0.91 at 4.29% error chances, so the hypothesis is accepted as the result is positive 91%. Hence correlation is extremely strong.

Interpretation of Table # 06

The table shows the correlation between customer preference and digitization. The result shows that correlation is 0.612 at 0% error chances, so the hypothesis is accepted as the result is 61.2% true. Hence correlation is strong.

Discussion of results

The research methods followed were adopted to study all the variables that enhance customers' inclination towards digitization and its influence on customer loyalty and satisfaction. According to the findings of the research, a positive relationship between digitization and customer loyalty is observed. It is evident from the research that 61% of individuals are loyal and satisfied with the online purchasing of medicines within Germany¹⁷. The key reason for a positive correlation between customer preference and digitization is the innovative technological advancement in the healthcare sector of Germany that has transformed the mindset of customers. Mobile health could now be integrated into existing services equipped with a variety of apps and technical improvements. As a result, the quality of the various healthcare services provided by the pharmacies will improve in the context of Germany. The profession has now shifted its focus to patients because earlier, it was more focused on products; it has further depicted a huge shift in the trend. The pharmaceutical sector is exposed to an array of distinct safeguards in various states that lead to being regarded as one of the most strictly regulated sectors in the world. Satisfaction and loyalty of customers are essential considerations in contemporary business as firms could not afford to spend money and other resources on acquiring new customers all the

¹⁷ Ritu Agarwal et al., "Research Commentary—The Digital Transformation of Healthcare: Current Status and the Road Ahead," *Information Systems Research* 21, no. 4 (2010): 796–809.

time. Organizations can benefit customers from digitalization in multiple ways, such as it can save costs while also enhancing customer satisfaction ¹⁸.

Moreover, the deductive method has been employed in this investigation as the hypotheses have been developed based on the existing literature.

Conceptual Framework

Independent Variable**Dependent Variable**



This conceptual framework, which is based on field research, emphasizes customer satisfaction and loyalty in the online pharmacy industry in Germany. The process of incorporating any digital medium into a company's overall business strategy and operations generates high revenue for the pharmaceuticals in Germany. Reviews of customers about commodities and services are based on their own experiences with the items and services in the research question. Firms can utilize a variety of mobile technologies to achieve their health objectives, which can be accessed and used by personnel through their mobile devices.

¹⁸ Jessica Kowalczyk, "The Evolvement of Online Consumer Behavior: The ROPO and Reverse ROPO Effect in Poland and Germany," *Central European Management Journal* 26, no. 3 (2018): 14–29.

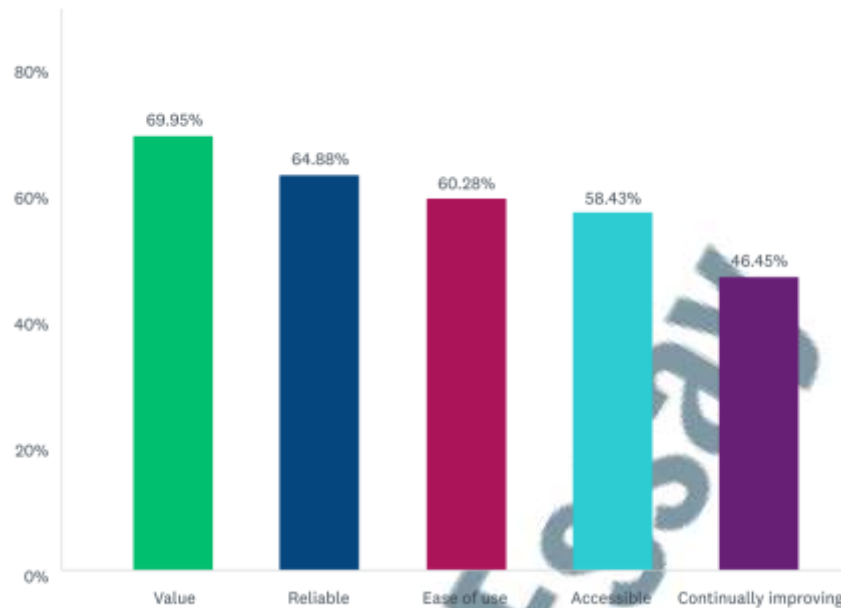


Figure 1: Degree of Customer Satisfaction due to Digitization

Figure 1 above shows the degree of customer satisfaction due to digitization in the pharma sector of Germany. It illustrates an overall increasing trend in value, reliability, accessibility, ease of use, and continuous improvement in digital operations. An online pharmacy is quite convenient for the customers as it allows the customers to get all the desired products without physically moving to the medical store. People can order medicines online through a smartphone app or a website, and the company will deliver the items to their location. This has offered individuals a heck of a lot of simplicity and convenience, and because of it, they are more inclined to buy their medicines online. Germany is a country with several technical breakthroughs where online businesses have seen an increase in popularity. The pharmaceutical sector has grown in prominence as a result of its innovative approaches. The trend of digitization in the pharma sector has massively evolved after the outbreak of COVID-19, due to which the

companies are more vigilant towards adapting digital measures ¹⁹. It has resulted in increasing online sales for the pharmacies, along with achieving customer satisfaction. It has also provided the people with a way of executing the daily based operations effectively and in a time-efficient manner. The pharmaceutical industry has also adopted digitalized technology to attain more consumer satisfaction by providing them with quick and efficient services.

Figure 1 is a clear depiction that Germany has become a suitable place for the implementation of digitalized procedures. The growth in online pharmacies is strongly reliant on factors such as customer satisfaction and loyalty, thus healthcare executives must focus on improving processes that will help them strengthen their relationships with customers. The corporate world is crucially concerned with incorporating innovative measures based on digital technology to boost business operations. Considering the importance of the online system of the company, it needs to be evident that customers are just as vital in the online mode as they are in the offline mode. Hence, the impact of customer satisfaction and loyalty in the online mode of business has been explored in this study. Customer satisfaction and loyalty play a prominent role in escalating the online sales revenue of the digital pharmacies in the country, which, in return, leads to boosting the overall profitability of the businesses ²⁰. This succinctly highlights the value of customer satisfaction for a company's success in the long term.

The study also revealed that loyalty and contentment have a reciprocal relationship and that both are equally vital for companies to focus on. The online platforms must ensure that they are giving customers the desired quality of products and services for them to be enticed to use the company's services. Apart from achieving customer satisfaction and loyalty, this can also be

¹⁹ Aamer Baig et al., "The COVID-19 Recovery Will Be Digital: A Plan for the First 90 Days," *McKinsey Digital* 14 (2020).

²⁰ Agarwal et al., "Research Commentary—The Digital Transformation of Healthcare: Current Status and the Road Ahead."

useful in attracting potential customers to expand the online mode of business operations. The use of digital technology has allowed pharmacies to run their operations more efficiently and achieve the desired level of customer satisfaction. Customers receive prompt and efficient service without having to physically visit the market. There might be some of the trade associated with digitalized mode of operations, which will be explored in this comprehensive research.

Conclusion

Therefore, based on the results of the data analysis, it is concluded that consumer satisfaction and loyalty within the online pharmaceutical sector in Germany. E-commerce ecosystems have widened up extensively especially because of amplification by Covid-19. So, online pharmacies are rapidly growing in the European states including Germany. Despite emphasizing customer loyalty and satisfaction, interviewees also share their views regarding the improvement of transparency and traceability in the online pharmaceutical sector of Germany. The online transactions within pharmacies' operations seem to be more flexible and transparent for customers as well as operators if they are provided with relevant info and records (Zaharia, 2019). The step towards digital prescriptions made it convenient for customers to verify the validity of prescriptions and obtain info related to the appropriateness of usage of the medicine.

Additionally, customers can evaluate compliance with vital regulations in healthcare using details mentioned on the corporate website of the pharmacies. There has been a massive evolution from a professional that was primarily engaged in products to one that is now entirely focused on people. Online businesses in Germany have been subjected to several special precautions, making it one of the most heavily regulated industries in the world. Two of the most essential considerations in this regard are the product and service quality. Consequently, no

distinction will be made between the service supplied and the product offered. Service providers will benefit from digitizing their operations since they will be able to receive customer feedback immediately after providing the service.

Both the quantitative and qualitative research approaches were used in this study. The research participants were provided with a questionnaire based on standardized questions and their answers were recorded to determine the impact of digitalization on customer satisfaction and loyalty in the online pharmacy sector in Germany. Besides, in this mixed research methodology, a total of 50 participants were involved in the process. The data was collected from various pharmacies where the marketing managers, as well as the loyal customers of the target pharmacies, were the key target segment of the research. The main variables were the expectation of the individuals related to online pharmacy, their preferences, their satisfaction, and loyalty.

The results reveal that online shopping saves time as well as financial resources for the shoppers; hence, more than 70 percent of individuals in Germany prefer to purchase medicines through online platforms. The trend of digitalization has not only brought convenience for the customers rather also for regulators. The traceability of online transactions will enable detailed identification including expiry dates and batch number of medicines, which can lead to a likelihood of tracking forgery prescriptions and result in a prompt recall of medicines to demonstrate negative reactions of drugs. Germany has established itself as a perfect setting for implementing digitalized procedures primarily in the online pharmaceutical sector. Customer satisfaction and loyalty are important factors in the growth of online pharmacies; consequently, healthcare organizations should focus on enhancing the digital processes that would assist them to build their customer relationships. Satisfaction and loyalty of customers play a key role to

intensify the sales of digital pharmacies across Germany, which results in enhancing overall profitability. This clearly sums up the value of customer contentment for the long-term success of the business. Moreover, it is explored that customer satisfaction and loyalty have a reciprocal association as both of them are mutually essential for online pharmacies to focus on. This can be effective in engaging potential customers to increase the online mode of business operations, in addition to achieving customer satisfaction and loyalty. Pharmacies have been able to ensure the smooth running of their operations and reach the appropriate degree of customer satisfaction because of the massive usage of digital technology. Without having to physically visit the market, customers obtain rapid and efficient service.

The increasing tendency of online sale of medicines using the digital platform demonstrates a vital disruption to the German pharmacy market across Europe. The digital pharmacy has been flourished since the initial online consumer sales in the early 2000s. The current worth of the global digital pharmacy market is approximately 81.5 billion US dollars, and this figure is expected to escalate to 245 billion US dollars by the next five years i.e. 2027. The high-income states such as Germany are highly inclined towards e-pharmacy as more customers find it suitable to shop online. For instance, the aggregate share of Germany in the e-commerce European market is about 9.4 billion US dollars with a compound growth rate of 15% per annum (Zaharia, 2019). There exists an array of reasons that highlight the preference of customers for utilizing online pharmacies. The main reasons are 24/7 accessibility, product availability, convenience, time-saving, transparency in price, customer privacy, and so on.

Also, for housebound and disabled patients who find it hard to access a pharmacy store or are not store-oriented customers, the option of online buying of medicines is quite obvious. Consumers can order medicines online through the use of a smartphone app or a website, and the

pharmacy would deliver them to their address. This has provided people with a considerable measure of ease and simplicity, and as a result, they are more likely to purchase their medications online. Germany has been deeply fascinated by technological advances, and internet commerce has expanded in prevalence. Thus, based on the advanced digital marketing strategies, the pharmaceutical industry in Germany has gained in popularity. Different ethical standards were considered during the process of research. The participants' identity was not disclosed and info obtained was merely used for the research purposes. Further, the work of other researchers is also not employed without their consent and all the significant info of the research is only shared with the authorized persons.

Recommendations

This study has some research gaps that must be adhered to in future research. The sample size of the study is partially small which has restricted the scope of research. As the sample of this study had been selected using a random sampling technique, it is not obvious to claim that the data collected from the target sample is adequate concerning their views about digitalization. Further, the extent of analyzing the behavior and perception of sellers has not been considered in this research. So, this study merely focused on determining the behavior of customers' perception and satisfaction towards online buying of medicines. Thus, future research can incorporate the behavior of e-pharmacy sellers towards digitalization. The analysis of sellers' attitudes about establishing customer satisfaction as well as customer loyalty is limited in the scope of current research particularly in the online pharmaceutical sector of Germany for avoiding pointless details and explanations.

Covid-19 is a window of opportunity for the e-pharmacy industry in Germany to expand its operations countrywide. In this way, online pharmacies can prioritize the public health

consciousness as well as boost their sales revenue. As the core objective of this study is to explore the impact of digitalization on the relationship between customers and online pharmaceuticals and to suggest new methods if any kind of improvements are required; thus, businesses functioning in the e-pharmacy sector of Germany should concentrate on developing 'Customer relationship Management' program along with identification of appropriate database. It would enhance the validity and reliability of the data analysis of future research.

CRM Program

Moreover, future research can comprehensively focus on the impact of digitalization on e-pharmacies revenue and customer loyalty. Online pharmacies should design CRM (customer relationship management software) that is developed to assist firms to improve their relationships with their existing and potential customers. CRMs provide options to offer segmentation and campaign management features to target specific customers according to the demographic and psychographic categories. It is essential for online pharmacies to use specific features for targeting the right target audience to enhance their sales (Dewicka et al., 2019). However, it is also used to improve the products and services according to the interests and demands of the customers. Many offline medical stores developed their CRM program to target the right audience and obtain their feedback about the services offered. They have segmented a list of CRM systems that excel at market segmentation.

However, they have an opportunity to get more options to improve the online marketing campaigns and customer-business relationships. The interaction and development of a relationship with customers will help e-pharmacies develop their CRM strategies and flourish the German e-pharmacy sector. CRM strategy includes the collection of customer data, processing the information extracted from the data, analyzing the history of consumer interactions and

relations to improve services, and developing healthy and improved relationships with the customers to enhance the sales and generate more revenue. It is mandatory for online medical stores to develop a proper CRM strategy to be managed the information regarding customer segmentation and marketing campaigns. Otherwise, it would be difficult to keep track of all the interactions business has with its client. However, the development of a healthy relationship with customers leads to increased sales, more revenue, and an improved brand image of the company. So, online pharmacies in Germany should particularly use the SAP CRM applications that have been integrated on-premises customer relationship management software manufactured by SAP SE which focuses on the requirements marketing, sales, and supply chain management. This tool can be implemented for selective marketing, exact business partners need to be defined to ensure customer-oriented spreading. This can be attained by identifying a target market that shares specific attributes due to adapting the marketing activities respectively. Attributes are one of the most significant factors that are described business partners or products to be used as criteria during the segmentation process. Attributes that are created in CRM can be combined by attribute sets.

Further, online pharmacies can use master data extracted from the SAP warehouse to achieve a high number of sales through processing the data and extraction of knowledge. However, usually, CRM program includes several programs that are used to improve relationships of customers such as loyalty program, initialed action among consumer service workforces and the customer. It also offers the feature to modify the product to match the precise requirements of the customers. When the needs and the demands of customers are fulfilled, enhances their satisfaction level. Therefore, businesses in the e-pharmacy sector should gain

customer loyalty and customer retention by considering and prioritizing their needs and demands.

SAP CRM is quite useful for online medical stores worldwide for centralizing, optimizing, and streamlining communication as the business can acquire comprehensive knowledge about its target customers that lead to strengthening relationships with them. SAP CRM enables firms to break down their market segment data by criteria to easily focus on the lists. In this way, the sales and marketing team can organize several customer marketing campaigns to analyze the sales process as well as a lead pool. Despite being a crucial asset to explore and nurture the potential customers of a particular segment such as physicians and patients, SAP CRM is even a substantial tool for pharmacies to retain their existing customers.

SAP CRM incorporates two vital incentives such as engagement and data capture to boost healthier relationships with customers. The engagement will be enhanced through recurring, triggered, and scheduled communications across various platforms. Nevertheless, this is specifically an outbound marketing based extensively on transactional data. The loyalty earned employing profitable behavior builds a robust bond between a consumer and a brand. The loyalty program offers the significant ability to create sustainable two-way relationships and influence customer engagement.

Hence, SAP CRM is a hurdle-free data capture tool for online pharmacies in Germany as the captured data informs CRM initiatives, the value proposition, and the communications experienced by customers to drive sophisticated customer engagement. Another CRM incentive involves data capture that enables an enriched understanding of the interests of customers. This captured info is beneficial for gaining preliminary insight into preferences along with initial emotional drivers. With CRM, businesses in e-pharmacy can determine what drives customers'

interest, action, and intent to engage and acquire. They can also personalize particularly to drive spending using such data.

Besides, the SAP CRM program uses Nimble and Zoho media tools to attract customers within a particular market segment such as psychographic segment and behavioral segment. Nimble social customer relationship management functions in tandem with the MS (Microsoft) family. It includes the integration of Foursquare, Twitter, Google+, and AngelList. Nimble automatically identifies and connects the customers' social accounts and incorporates their social data to enhance the details of contact within the SAP CRM. Nimble has numerous smart search functions to sort contacts by connectivity status. Similarly, Zoho is another crucial medium that businesses use in the SAP CRM program for attracting an extensive audience base of target customers. Zoho is linked to Twitter, Google+, and Facebook; however, Zoho CRM is also integrated with other platforms of the workplace such as Zapier, Zendesk, and Slack. This app enables users to sift over venues of social media to manually extract potential customers' data and store their contact details into the basic platform. Zoho has an automated function that focuses on lead acquisition and identifies premium leads exhibiting specific characteristics like demographics, tastes, and preferences. Hence, SAP CRM is highly a crucial tool for the e-pharmacy sector to acquire the target customers by maintaining loyalty and retention.

Database

Additionally, to enhance the efficiency of digital operations, online pharmacies in Germany should use appropriate market variables to increase their sales and profitability. Once the variables will be identified required for the data collection about customers, e-pharmacies can select the most accurate database used to store the data collected through the research methodologies and marketing campaigns. First of all, they need to select the most appropriate

database to store the data records and process the information for further decision-making purposes. The choice of several methods of data collection for segmentation marketing will depend on the variables to be measured and the sources and resources that are available. However, the most appropriate way of storing the data records like gender, age, retention rate, etc. are often best collected through the registration system. But, highly dynamic variables such as interests, attitudes, and opinions of consumers can be obtained through daily records such as long sheets. Moreover, the methodologies can vary depending on the type of data records for the customer segmentation. For example, for age and gender, the data can be collected from logbooks while the small-scale data can be collected through interviews or questionnaires from the hospitals and healthcare centers. The sources of the data collection are the most significant factors for the choice and the design of methods.

However, there must be a separate database table for the customer's segmentation data records to process and analyze the situation to take decisions in the future. Every table has to be linked with each other through primary key and foreign key. As the trend of digitalization is growing exponentially in healthcare such as in Germany; hence, it requires reliable database software to store its data and information such as SQL. However, due to the rapid growth of online operations, it is important to develop a secure and reliable database to store and process information effectively to be able to manage their data efficiently. Mostly the segmentation is performed on the basis of demographic and psychological data of the customers. Marketers use various methodologies and software to attract and target their customers based on these criteria such as email marketing, coupon mail, and promo code marketing strategies that can be processed with the information stored in the database about the targeted customers. Tables should be created for the data records to develop a relational database model. Moreover, the

relational database model lets you store any set of data recorded through reliable resources. The data regarding the geolocation can be stored in two pieces as longitude and latitude. Online pharmacies should create a table in the database which has to contain at least three columns such as Id, a unique identifier, longitude, and latitude of the location. Similarly, they should create tables for the other variables as well such as age, income, and gender. Secondly, an advanced SQL template can also be developed that will calculate the point on the basis of the coordinates of the radius that will help find the users within a certain radius to effectively carry out marketing campaigns to attract more customers.

Certain future directions need to be considered within this research study. As far as products and services are considered, many customers claim that online purchasing of medicines does not adequately satisfy their needs as there exists a chance of price and quality manipulation. So, this kind of risk could be mitigated by offering high-quality pharmaceutical products at competitive prices. The online pharmacies should provide an option of a product exchange or refund at the e-store to boost the morale of the buyers (Bock et al., 2016). Additionally, the occurrence of the proper transaction is another risk perception that needs to be encountered in future research studies. Sometimes, the process of product delivery seems quite inefficient that tests the patience of the buyer. So, to avoid delays in the delivery process of medicines, it is recommended that digital pharmacies in Germany should enter into contracts with a broad list of contact with delivery services providers in the county. In this way, e-pharmacy can deliver products to the purchasers without delays in orders and hence, can retain a large base of customers. Also, the intention of online buying behavior could be significantly influenced by system security. Issues regarding ethical and legal concerns, data encryption, security risks appear highly ambiguous. The personal data theft risk, as well as financial risk, could be

mitigated through designing confidential and secure soft-wares that should be updated regularly. Similarly, the security keys should be changed to ensure utmost security and avoid such kinds of threats.

Moreover, digital pharmacies should engage in the implementation of blockchain solutions that will enhance the overall efficiency of the digitalization process. Blockchain solutions are quite effective in offering various medicines with a specific code of identification. It could be tracked at any stage of the ordering and distribution chain that range from in-house procurement to end-user along with tamper-proof encryption advanced technologies.

Limitations

Following are the limitations and delimitations of the research;

- Our sample was considerably small as a result of which the horizon of study is limited.
- Since our sample was selected through simple random sampling, we cannot determine whether the information provided by these individuals is genuine regarding their impression of digitization. However, a comprehensive data is collected that is enough to analyze the problem effectively.
- In this research, we were only able to study the consumer's point of view whereas the other side of the business, that is, the sellers' perceptions, was left out.
- The discussion of business attitudes concerning creating customer loyalty and customer satisfaction is restricted in our research to avoid unnecessary elaboration and detail.

Future Directions

Product or Services

Individuals are concerned that online products or services will not meet their needs. This risk can be minimized and eliminated by providing optimum quality, quantity, and price for the

available products or services. Moreover, this can also be catered to by providing the options of refund or exchange at the e-store.

Delivery

The other risk perception is about the proper transaction. The delivery sometimes tests a purchaser's patience; therefore, it is suggested that online markets should have a wide contact list with delivery companies in the cities or countries where the store claims to provide the services so that the delay in orders does not occur.

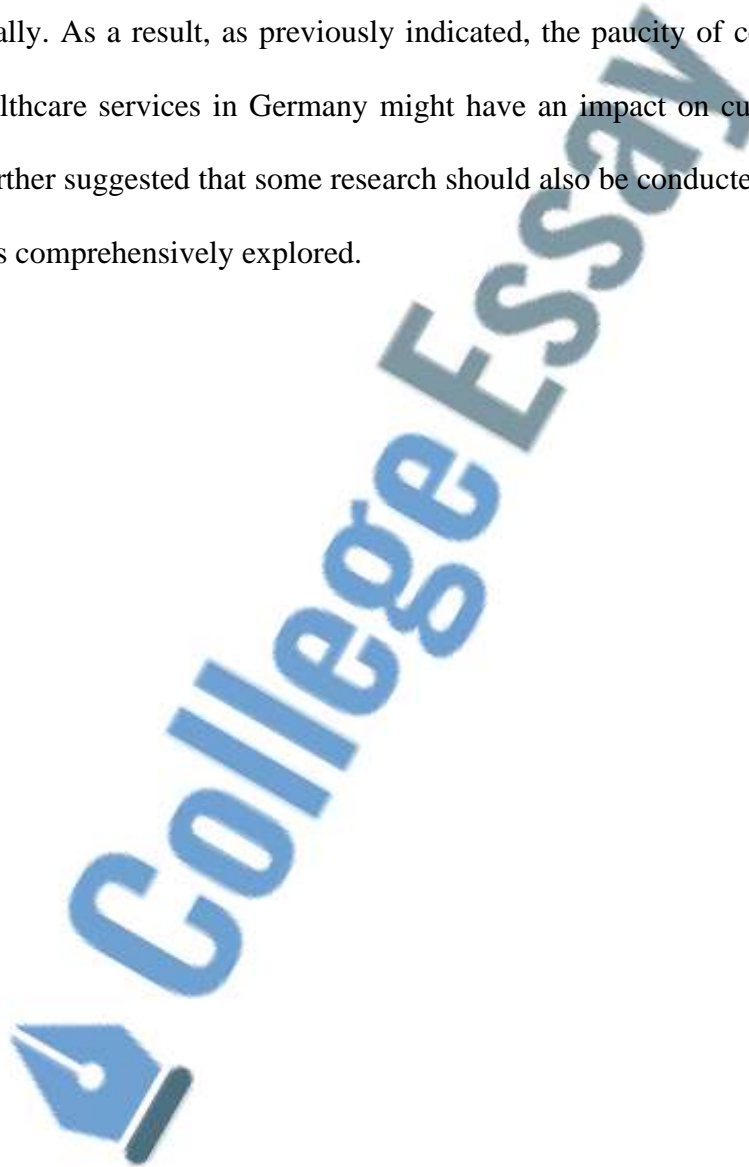
Security

System security can influence shopping intention. Concerns related to data encryption, legal and ethical issues, as well as security risks, are not much clear. The financial risk and risk of personal information theft can be minimized by creating safe software, which are to be updated and the passwords changed regularly to provide maximum security and keep up with such threats.

Summary

The results of the analysis demonstrate that digitalization has had a profound impact on almost every aspect of individual life. Pharmaceuticals, like all other organizations, have implemented digitalized processes in order to ensure that operations run as smoothly as possible, leading to customer satisfaction and loyalty. The responses of the target sample reveal positive patterns of customer behavior and their crucial preference towards changes in technological advancement in healthcare. This research investigated customer behavior and the online pharmacy sector in Germany as part of the research objectives. For the analysis of the selected variables, some basic features of online pharmacies were explored. Furthermore, consumer satisfaction, as well as the global significance of digital pharmacies, was also investigated.

However, there were certain gaps in the research due to the unavailability of sufficient data on consumer attitude toward digitization in pharma and the provision of registered pharmacies on the internet, both of which were important aspects of the study ²¹. Shoppers in Germany are by far the most difficult to handle as they demand a full description of the products and services being offered digitally. As a result, as previously indicated, the paucity of certified pharmacies offering online healthcare services in Germany might have an impact on customer behavior in the country. It is further suggested that some research should also be conducted in future to make sure that the topic is comprehensively explored.



²¹ Baig et al., "The COVID-19 Recovery Will Be Digital: A Plan for the First 90 Days."



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Appendix
Questionnaire

Part I, Digitalization and E-pharmacy

Price Setting

1. Please Define the importance level you assign to the following orientations when buying from e-pharmacies:

	Very High	High	Medium	Moderate	None
Convenience					
Quality					
Customer Satisfaction					

2. Which method do you resort to when buying online?
 - competition-oriented pricing
 - Convenience
 - Quality

- customer value analysis
 - other (Please describe)
-

3. Do you systematically measure the value perceived by the customers in order to set your demand?
- Yes
 - No

If yes, which method do you use?

- top management evaluations
 - measurement of the importance of the product/service attributes
 - conjoint analysis
 - other (Please describe)
-

Price strategies

1. Do you resort to quality discrimination in digitalization?
 - Yes
 - No
 2. The main discrimination criteria you use are?
 - customers
 - Product/service destination
 - territorial areas
 - timing and financial conditions
 - other (Please describe)
-

3. Do you resort to price bundling and price unbundling in offline medical store?

	Always	Often	Quite often	Rarely	Never
Price bundling					
Price Unbundling					

4. When buying a medicine, do you prefer a skimming or penetration strategy?
- Skimming
 - Penetration

Part II : Defining and managing the price on the internet

- Have you recently adopted to a specific online pricing strategy on the web?
 - Yes
 - No

If not,

- you are going to adopt in the short run
- you will adopt in the long run
- you are not going to adopt it

If you answered yes, please go to the next questions.

If you answered no, please go to the end of this questionnaire.

- Do you adopt a different price strategy on the internet in comparison with the one you use in traditional environment?
 - Yes
 - No

If yes, which are the main differences:

- lower price
 - the opportunity to increase dynamic pricing
 - the opportunity to set the price on the basis of the customer perceived value
 - different prices for different clusters of customers
 - other (Please describe)
-

- Please define the level of importance you attribute to the following orientations when buying online:

	Very High	High	Medium	Moderate	None
Loyalty					
Competition orientation					
Customer orientation-willingness to pay					

- On the internet, when launching a new product/service, do you prefer a skimming or penetration strategy?
 - Skimming
 - Penetration

5. Do you perceive that digitalization allows your first to increase the customer perceived value?
- Yes
 - No
6. Which of the following e-pricing mechanism do you adopt?
- Negotiations
 - auctions
 - reverse auctions
 - digital marketplaces
 - set prices
 - other (Please describe)
-

Part III: Your point of view on the Internet Pricing:

Which is your perception about the importance of customer loyalty in online pharmacies?:

Which is your perception about the importance of quality orientation in e-pharmacy?

Which is your perception about the importance of customer orientation-willingness to pay in online purchasing of medicines?

