

How COVID-19 has Impacted Digital Transformation – From the Perspective of C-Suite Professionals

Dipl.-HTL-Ing. Helmut Schindlwick MBA MSc

Hasenhutgasse 11/1/7, Vienna, 1120, Austria

Email: Helmut@Schindlwick.com

Abstract

The present study is aimed at understanding how COVID-19 has impacted the digital transformation of businesses globally. The study considered numerous sub-aspects related to the digital transformation of businesses, including drivers to digital transformation, impact on people and society, and the impact of COVID-19. The research was based on the interpretivist paradigm using a qualitative research approach and interview method where data was collected from the C-suite category of selected businesses from Canada, India, Germany, Austria, and Switzerland. The study's results have identified COVID-19 as the most significant challenging factor for transforming businesses where lack of coherence among employees and inability of people to adapt to the technological interventions might demotivate them and cause disrupted operational activities of businesses. The study's results also suggested for businesses to focus on training and development of employees to capacitate them to adapt to the new normal working environment.

Keywords: COVID-19; Digital transformation; Big data, Artificial Intelligence, Cloud computing.

1. Introduction

The digital revolution's current era has witnessed numerous businesses pass through multiple stages of technological advancement, yielding radical change in their business models through the integration of the latest technological interventions, including big data analytics, artificial intelligence, and cloud computing [1]. This prevailing concept of digital transformation, which is generally referred to as DT and is deemed synonymous to digital adoption, refers to the transition of businesses from manual processes to the implementation of innovative [15] and current digital technology interventions in an enterprise [2].

* Corresponding author.

This digital transition of businesses not only results in fundamental change in the business model of an enterprise, but also transforms all the business functions and operations while providing support to the entire business structure [8]. Digital transformation aids businesses in attaining pre-defined goals and objectives while yielding product, functional, and operational excellence [2,3,12,13,14,15]. Furthermore, digital transformation has eased the process for businesses to cater to the continuously changing needs of customers while still delivering value to them [5,6]. Digitization is considered to be the backbone of survivability, sustainability, and competitive advantage of a business through innovation, efficient utilization of resources, and operational integration of various business aspects [2,3,4,8]. Literature has extensively discussed the association between digital transformation and economic development, entailing from technological integration of industrial production of the 19th century and digital revolution through inter-networking, which prevailed in the 20th century to be the emerging concept of connectivity between relationship economy and knowledge, which is still at an embryonic stage in the 21st century [3,8,15]. The current era has not only accentuated the information with a focus on effective management of information but has also considered protection and good governance of all the informational assets of the company, where digital technologies play a key role [1,10]. Furthermore, data management aspects of enterprises are, now, not confined to computer filing, folders, and database systems but have emerged and transformed in the form of business intelligence, big data, and cloud computing [3,5,12]. Although the concept of big data dates back to the 19th century, its efficacy and rapid implementation by businesses has become a key construct of success and competitiveness for the business in modern times. Big data has transformed data management strategies of businesses through managing large data volumes which are distinct and updated at a rapid pace. Likewise, analytics have not encapsulated to basic query or structural techniques of reporting but have emerged as the modern form of business intelligence, artificial intelligence, machine learning, and advanced business analytics [1,3,12,14,15]. Any innovation, entrepreneurial activity, or technology is not made disruptive by launching of new product or service. But unsatisfied needs of market segments, or certain demand conditions from potential new market segments, prevail and become the cause for disruption [16]. Not only this, but digital transformation has also evolved and expanded the user community through integrating people, organizations, systems, functions, and the internet of things, yielding more connected enterprises, mobile systems, and intelligence management as well as operational and functional integration ensuring the provision of highly value-oriented products and services to users globally [1,3,7].

1.1. Problem statement

Although digital technology and the transformation of businesses has extensively been discussed from distinct perspectives, its importance and vitality for businesses has been justified during the COVID-19 pandemic. Businesses, regardless of their size, nature, and industry belongingness, have undoubtedly agreed to the stance that COVID-19 has amplified the need for them to opt for new technologies and adhere to modern technological advancements at a rapid pace. Although businesses worldwide have been transforming their technological perspectives for more than two decades, the prevalence of the pandemic has increased the need to alter the nature of their operations and functionalities [2,4,5,7,9,14,15]. Building on this stance, it is also identified that COVID-19 is the latest and most integral driver of the digital transformation of businesses, fostering organizations' need to innovate their functional aspects [2]. It is further argued that the digital transition of businesses has become an essential construct for them to sustain the new normal working environment caused

by the pandemic [2, 10,12]. The literary analysis revealed that there is extensive research present that is related to the importance of digital transformation for businesses to attain competitive advantage, innovation, and to ensure survival in the market [3,8,15]; however, no study was conducted concerning the importance of digital adoption and digitized transformation of businesses through the lens of COVID-19, which was identified to be a key research gap, thus forming the basis of this study.

1.2. The rationale of the study

The present study is aimed at understanding how COVID-19 has impacted the digital transformation of businesses on a global scale. The study considered numerous sub-aspects related to the digital transformation of businesses that includes drivers to digital transformation, impact on people and society, and the COVID-19 pandemic. The research was based on the interpretivist paradigm using a qualitative research approach where data was collected from the C-suite category of selected businesses from Canada, India, Germany, Austria, and Switzerland.

1.3. Research objectives

The research was based on the following research objectives:

- To explore the key drivers and pitfalls of digital transformation for businesses.
- To understand how COVID-19 has impacted digital transformation from the perspective of C-suite category professionals.
- To bridge the identified gap in the literature and contribute to the initial research related to digital transformation through the lens of COVID-19 while streamlining the research pathway for future research.

1.4. Research questions

Based on the study's rationale and subjected research objectives, the following research questions were designed for this study. The research entailed one primary research question represented by GRQ, followed by specific sub-questions, represented by SRQ1(a-c) related to the topic.

Generic Research Question (GRQ): How has the COVID-19 pandemic impacted the digital transformation of businesses globally?

- **SRQ1a:** What is the inclination of businesses towards opting specific digital technologies?
- **SRQ 1b:** What are the key drivers and pitfalls of digital transformation?
- **SRQ 1c:** How has COVID-19 impacted the digital transformation of businesses?

2. Materials and Methods

Methodology refers to the tools and techniques used to conduct research and find a solution to the posited research problem. Development of research philosophy, structure, and approach for data collection and analysis is one of the key challenging steps. Considering the vitality of materials and methods selected for the efficacy of research, Saunders and his colleagues (2012) put forth a structured and multi-levelled approach to research consisting of six steps leading to coherent development and appropriate research methodology. The present study opted for this approach to develop the methodological direction of the study, details of which are discussed in the following sections.

2.1. Research philosophy

Guba and Lincoln (1994) defined research philosophy as a process of developing knowledge through opting one or multiple worldviews. The research philosophy is generally divided into three categories which include positivism, interpretivism, and pragmatism. Collins (2018) defined positivism as an empirical, discrete, abstract, and logical philosophy consisting of observable and regular events which are logically supported. On the contrary, interpretivist philosophy is subjective, which entails behavioural aspects, language, shared meaning, and social constructs. Pragmatism is the third research philosophy, combining both a positivist and interpretivist research approach in order to integrate the use of a distinct combination of logical and behavioural aspects. The present study aimed to explore how COVID-19 has impacted the digital transformation of businesses. Since the research considered the perspective of the C-suite category of selected businesses worldwide and was therefore descriptive, the subjective nature of the study identified the interpretivist paradigm as the most appropriate research philosophy.

2.2. Research approaches

Literature has identified two types of research approaches: deductive and inductive approach, which depends on the nature of research. Deductive approach refers to testing the existing theories, whereas inductive philosophy refers to the development of new theory. According to Wiles and his colleagues (2011), the deductive approach is deemed appropriate for research concerned about testing and evaluating a particular phenomenon compared to the expected reality as identified in a previous study or studies. Since it involves developing and testing hypotheses, it is generally considered the best suited with the positivist research philosophy. On the contrary, according to Bryman and Bell (2018), the inductive research approach is concerned about identifying patterns in the data. Hence, the data is not evaluated based on any pre-existing frameworks, from which results in new theories being generated. Therefore, considering the approach's subjective nature, the inductive approach is considered to be associated with the interpretivist paradigm. The present study was primarily based on understanding the impact of COVID-19 on the digital transformation of businesses from the perspective of the C-suite category of selected companies from different countries. The study considered several behavioural aspects and personal experiences of the interviewees, including real-time business practices. Therefore, considering the subjective nature of research and the interpretivist paradigm, the inductive research approach has been utilized in this study.

2.3. Methodological choice

Methodological choice refers to the selection of modes of data collection (Hitchcock and Hughes, 2002). Cohen and his colleagues (2018) described the methodological choice as one of the key steps depending on the study's ontological nature and research philosophy. There are three possible methodological choices for the research: a quantitative approach, a qualitative approach, or a mixed methods approach, selection of which depends on the nature of the study, research philosophy, and the selected approach. The present study was based on an interpretivist paradigm, followed by an inductive approach where the present study was the first of its kind. It provided a basis for future research and developed an understanding of the impact of COVID-19 on the digital transformation of businesses globally. Therefore, a qualitative research approach was selected as the most appropriate methodological intervention for data collection.

2.4. Research strategy

Research strategy refers to the action plan of a researcher employed to carry out the research. Different research strategies can be utilized, including action research, surveys, experimental research, systematic literature review, and grounded theory. Experimental strategy refers to the process of conducting experiments and recording the results in order to develop an understanding about a mechanism; however, this research strategy is limited to a few factors and is thus generally used in scientific research where an evaluation and judgmental process is involved between the experimental results and the expected outcome. Action approach is considered one of the best approaches is facilitating reflection on a particular research problem. Hence, it is a systematic process where an assessment of practice and experiential learning is being made. The case study utilizes another widely adopted strategy that is concerned about a single business unit of study; however, it has a specific scope and context. Grounded theory is another effective research strategy that is generally associated with the qualitative research approach where induction of a theory occurs in adherence to the identified data patterns identified as a pre-condition of the research. The survey is another common research strategy that supports quantitative analysis where hypothesis testing and evaluation are involved. A literature review is another research strategy that involves reviewing and analyzing the archived data extracted from previous research. Hence, the identified patterns are summarized to formulate results of the study. Considering the research gap, the rationale of the study, and the research's subjective nature, grounded theory is the most appropriate research strategy for this study. Data were collected by conducting interviews with 12 C-suite category professionals of the selected businesses in certain countries. Since the existing research concerning the impact of COVID-19 on digital transformation is at the embryonic stage, the selection of grounded theory and interviews seems the most appropriate in attaining the desired research objectives.

2.5. Time horizon

Considering the time horizon, there are two possibilities which include cross-sectional data and longitudinal data. Cross-sectional data collection refers to collecting the data once at a fixed point in time. On the contrary, longitudinal data collection is a prolonged process where data are collected in different intervals for comparison of results. The present study opted for cross-sectional data collection where data were collected at one point in

time. Recorded interviews with the C-suite officials of the selected businesses were conducted one time in order to understand the pre-defined research question.

2.6. *Data collection techniques and analysis procedures*

This study opted for primary data collection as twelve structured interviews were conducted with selected business professionals who belonged to the C-suite category, including those holding CIO, CEO, and CFO positions. They had their operational experience recorded through an interview after consenting to the study. Purposive sampling determined the selection of interview participants. The interviews combined both face-to-face and video-conferencing methods, depending on the availability of interviewees. A research proposal followed by their volunteer participation's consent form was emailed to the prospective participants to further aid in data collection. The interview questions were divided into four categories which included a general ice-breaking question about the organization, the participant's profile, and their current position in the company. Next, inquiry of the inclination of their business towards digital transformation followed by three questions related to drivers and pitfalls of digital transformation, and finally a question about how COVID-19 influenced digital adoption and transformation. The categorization of interview questions is further presented in the following table:

Table 1

Category	Questions
Ice-breaking discussion	• Can you tell me more about your organization (what industry are you in, what is your core business)? • Tell me about yourself and your current position
Inclination of businesses	• Which disruptive technology has impacted your organization?
Drivers and pitfalls	• What are the major drivers of digital transformation? • What is the impact of digital transformation and disruptive technologies on people and society? • What are the major pitfalls for digital transformation?
COVID-19 and Digital transformation	• Do you think COVID-19 has impacted the process of digital transformation? If so, have you experienced it?

The data was analyzed through opting thematic analysis by Braun and Clarke (2006), a multi-stepped model facilitating the identification of data patterns from the qualitative data. Following the thematic analysis, the data was initially transcribed, coded, categorized based on similarities and differences based on which two key themes emerged subject to the research objectives.

3. **Results and analysis**

The study followed a thematic analysis by Braun and Clarke (2006) as a data analysis intervention, one of the simplest and extensively implemented analytical tools for qualitative research. The thematic analysis consists of six steps: data familiarization, coding, theme generation, review, naming themes, and reporting. Twelve interviews were conducted with C-suite category professionals of the selected businesses. For data analysis,

familiarization of data was the first step. All the recorded interviews were transcribed and reviewed multiple times to ensure the correction of data and the recorded responses unbiasedness. As a second step, the transcriptions were coded using their first name in order to distinguish the research participants. As all participants signed the GDPR consent to use their personal data and to release the interview content publicly, below are their details to express gratitude at participating in this research.

Table 2

First/Second Name	LinkedIn Profile
Daniel Lambert	https://www.linkedin.com/in/daniellambert1962/
Thiagarajan Venkatramani	https://www.linkedin.com/in/thiagarajanvenkatramani/
Almudena Rodriguez	https://www.linkedin.com/in/almrodrpardo/
Jürgen Horak	https://www.linkedin.com/in/juergenhorak/
Chantal Paquin	https://www.linkedin.com/in/chantal-paquin-b2153213/
Peter Bergmann	https://www.linkedin.com/in/peter-bergmann-180b4215/
Matthias Traugott	https://www.linkedin.com/in/mathias-traugott-a0368160/
Thomas Pränger	https://www.linkedin.com/in/thomas-pr%C3%A4nger-40a1705/
Lars Wentorp	https://www.linkedin.com/in/larswentorp/
Martin Hager	https://www.linkedin.com/in/hagermartin/
Fernando Scheps	https://www.linkedin.com/in/fscheps/
Christoph Pirringer	https://www.linkedin.com/in/christophpirringer/

Following the third step, the coding was further analyzed for similarities and differences based on which two key themes emerged. The two themes were reviewed and labelled as the inclination of businesses towards digital transformation, and drivers and pitfalls, which were discussed while considering the impact of COVID-19 and digital transformation as a fourth and fifth step. Reporting was the last step of data analysis, which included writing up the results to attain answers to the research questions.

3.1. Theme 1 – Inclination of businesses towards digital transformation – Pre and post-Corona

The first theme of the study was related to understanding how businesses were inclined towards digital adoption and transformation. The study's results evidenced that although a large number of businesses were opting for digitized solutions, the prevalence of COVID-19 increased the pace of digital adoption and therefore authenticated the vitality of the digital transformation of businesses considering their industrial competitiveness and sustainability in the market. All participants demonstrated a positive response agreeing with their business's stance towards opting for new technological interventions and facilitating digital transformation." AI and ML also used as part of the transformation as part of the publishing process," said Thiagarajan Venkatramani. Besides that, cloud computing was identified as one of the critical digital transformation interventions being implemented by a large number of businesses. According to Matthias Traugott, "Cloud is a key enabler today, everywhere, every time online. 5G and 4G, AI, Smart City and smart living [can] also be

seen as drivers impacting the organization and industry." Considering the inclination of businesses towards digital transformation, with a focus on cloud computing, Lars Wentorp stated that "[We're] using cloud solutions, e.g., ServiceNow, Office 365, and Hybrid data centre. [We] innovated with 5G in 2017-2019, prototypes with Edge Computing, also thinking about IoT. Prototyping ...a digital twin of the Port of Hamburg and virtual augmented reality. Currently in evaluation [is] a 'Drone Control Center.'" A similar stance was recorded by Martin Hager revealing that they were "Using cloud solutions to make their customer[s] more efficient and reliable. Replacing analogue fax machines, GSM modems, and SMS services with a digital cloud solution." In addition to that, Mr. Hager also mentioned a number of digital transformation tools and techniques, evidencing an increased interest of businesses towards AI, cloud computing, and IoT. It was also determined that digital transformation might not necessarily take place all at once on a large scale, but it may instead comprise of small transitional steps leading to a more significant transformation of businesses. Considering the impact of the COVID-19 pandemic on the digital transformation of businesses, the research participants identified digital transformation as an evolution of business, revealing that the transformation is not confined to merely technical change, and includes altering thought patterns and business structures. One of the research participants exemplified Tesla Motors and other German car manufacturers, revealing that they managed to integrate multiple systems; however, the transformation impacted the business technically and influenced the company's culture and industrial orientation. In the words of Thomas Pränger: "The transformation [is] more [akin to] evolution than disruption, [I see] Tesla Motors not as disruptive. German car manufacture has to [be integrated] with 30-40 systems. As a cloud provider, he tries to disrupt bigger software players, [as] to change old market players with new ones is disruptive. The impact depends on company culture and the type of industry. [For example] in the Nov 2019 Cloud exchange server, replacing old on-site infrastructure was a huge advantage [when dealing with COVID-19] a couple of months later." Another research participant highlighted that although COVID-19 had accelerated the inclination of businesses towards opting for digitized solutions, there is a need for the training and development of employees in order to capacitate them to master the new technological interventions. The research participants also connected this rapid transformation of businesses with employee's motivation, revealing that employees need to be trained and motivated to keep pace with the new technology, ensuring that they adapt to the new working environment to avoid a negative impact on the productivity. Considering this, Christoph Pirringer recorded that "COVID-19 restrictions are demanding [a] responsible way of considering on-site training. We [had] a very self-directed team before COVID-19, so they have worked from home beforehand from time to time, but doing this 100% of the time has its dynamics. We are very intrinsic[ally] motivated, so there was no need to implement special structures to maintain productivity." Although it is essential to adapt to the new environment to fulfil the customer need, it is not an easy task to plan upfront, as Jürgen Horak pointed out that "Prediction years ahead is not feasible, e.g., COVID-19, the environment is changing continuously very fast [and] it is important to focus on self-organized teams. Agility needs to be embraced and understood. Minimum Viable Products [are] key to ensure meet[ing] the customer/consumer need."

3.2. Theme 2 – Key drivers and pitfalls – Pre and Post Corona

The second theme that emerged from the interview data was concerned about the drivers and major pitfalls of digital transformation on the businesses where a number of factors, including COVID-19, were identified as the

key influencers. Considering the key drivers of digital transformation, research participants identified customers and their changing demands as a critical influencer urging the businesses to adapt to the changing trends and therefore implement the latest technological interventions in order to deliver value to the market. According to Daniel Lambert, "It's mainly about customers and in public area citizens where you have strict budget restriction. Doing business transformation based on Customer Journey maps." The second key aspect identified to be the key determinant leading to digital transformation was competition followed by business continuity and cost efficiency as primary associated factors. "The biggest driver is cost reduction," said Thomas Pränger. This stance was further reflected in the statement of Thiagarajan Venkatramani, who recorded that "...Incremental change is important, not a big-gang approach. Two major drivers are business continuity and cost reduction." In addition to that, research participants mentioned COVID-19 as one of the most impactful influencers for the businesses to accelerate their transformational processes while urging the rest of the businesses to consider digital solutions to stay competitive and sustainable the market. In the words of Martin Hager, "COVID is currently the biggest driver as a customer cannot access their fax machines and local infrastructure; the other driver is improving costs and lowering general process costs. Reduction of the rate for customer complaints." Considering COVID-19, research participants also revealed that the pandemic pushed direct involvement and influence of governmental authorities into the businesses forcing them to implement alternative solutions and opt for digitized tools to continue their operations. According to Christoph Pirringer, "After government COVID decision[s], we had to switch immediately to enhance the curriculum right away. Due to COVID-19, we have been forced to switch to an online teaching methodology. To pressure points, first on the security of some of the online tools (e.g., Zoom) and second the switch to different technology, e.g., Discord." Within the context of COVID-19 and digital transformation, the participants were convinced of the efficacy of digital transformation facilitating virtual working environments. Considering this, another stance that was quite evident from the research results was developing coherence of people to work from home, adding to both employee's and manager's existing operational struggles. According to Lars Wentorp: "Back in 2016 the IT department decided only to roll out Laptops; Office 365 [had] been rolled out back in 2018. In 2019 people don't like their new environment, but in March 2020 they had to admit that it was the right choice to go with a modern workplace. HPA needed to ramp-up VPN licenses from 250 to 1.500 to get people connected to their data centres. Other divisions struggled more in terms of processes, e.g., how to print out a contract and get it signed by multiple people. Employee[s] improvised and suddenly a lot of processes could be done in a less bureaucratic way. Field service is still struggling in delivering their services, not possible to deliver them from home; it is not digitizable." Besides all these influences, people and societal aspects were identified to be another vital driver of a business's successful digital transformation. Research participants exemplified numerous stances both pre- and post-pandemic revealing that digital transformation required integration of technology with people and society. "Every manager should be a leader. To drive successful transformation," said Almuned Rodriguez. A similar stance was recorded by another participant who discussed the importance of integrating people and society for digital transformation with an exclusive focus of the prevailing pandemic. According to Fernando Scheps, "You have to make the business as part of your transformation journey. Otherwise, you have already lost. Considering the different cultures is important, as the adoption might be in different ways. Bringing people together when they are all working from home needs some creative [thinking] for an organization to solve. Futurology, one solution could be like the game *Second Life* to engage with employees in virtual spaces." Training of people was

identified as an integrated aspect associated to categorizing people as a key driver; authenticating that knowledgeable and well-trained people have the capacity to adapt to the changing trends that prove to be a positive contributor for the success of businesses in the market. This stance was revealed in the statement of Lars Wentorp, who stated "They [people] are at the starting point of becoming a learning organization. Employees have a lot of freedom to make their own decisions and failures. Open-minded leadership here to support employees, building an open culture allowing to co-create free minds to make free decisions." The next sub-aspect of the second theme of this research was the pitfalls of digital transformation. Research participants primarily identified three key aspects that caused a challenging environment for the businesses and decreased their digital transformation pace. These three aspects included lack of initial planning, inefficient governance, and the COVID-19 pandemic. Considering initial planning as a significantly challenging aspect for digital transformation, Chantal Paquin recorded that "One thing that the organization does not understand what they are buying [or] where they want to go. Step back in regard to funding because initial planning was not realistic." Considering that initial planning was an important and challenging aspect for the businesses, results of the study also stressed upon ensuring that all the planned decisions and strategies of a business regarding digital transformation yield value for the customers. Keeping in view this notion, Lars Wentorp stated that "It is important to start with a prototype and let the business decide, do not push a solution into your business functions; every new solution needs to provide value to the business." Besides that, COVID-19 was identified as a significant factor by Thiagarajan Venkatramani, revealing that "COVID-19 had an impact in terms of project delivery; the SAAS approach made the communication easier. For the senior management and the execution to the customer, the impact is much bigger." In addition to that, considering the lack of efficient governance was a potential pitfall for the businesses, Fernando Scheps recorded that: "For digital transformation to become a success, it means to improve processes with technology; they were not [governed] efficiently. You have to make the business [a] part of your transformation journey. Otherwise, you have already lost. Most important is to ensure solid governance is in place, and every leader is an endorser and promoter. [It is] especially important that everyone understands why the transformation is important and what the benefits [will be]."

4. Discussion

The present study aimed at understanding how COVID-19 impacted the digital transformation of businesses globally. The study considered numerous sub-aspects related to the digital transformation of businesses, which included the inclination of businesses towards digital adoption and transformation, followed by drivers to digital transformation, its pitfalls considering COVID-19, and the impact of the pandemic on people and society. The research was based on the interpretivist paradigm using a qualitative research approach where data was collected through conducting twelve recorded interviews with a C-suite category of professionals of selected businesses from Canada, India, Germany, Austria, and Switzerland. Thematic analysis by Braun and Clarke (2016) acted as a data analysis intervention, following which, the recorded interviews were transcribed yielding two key themes in adherence to the research objectives and research questions. The first theme that emerged from the study results was the inclination of businesses towards digital transformation before and during the prevalence of COVID-19. Results of the study highlighted the fact that although a large number of businesses were opting for digitized solutions before the occurrence of the pandemic, the prevalence of COVID-19 increased the pace of digital adoption and subsequently authenticated the validity of digital transformation of businesses when

considering their industrial competitiveness and sustainability in the market. Cloud computing, artificial intelligence, and machine learning were identified to be the critical transformational constructs. In addition to that, considering the impact of COVID-19, the concept of digital transformation was categorized as an evolution of businesses revealing that the transformation is not confined to merely technical change, but also includes altering the thought patterns and business structures, while ensuring the training and development of employees to capacitate them to master new technological interventions. The second theme which emerged from the study highlighted key drivers and pitfalls of digital transformation through the lens of COVID-19. The influence of customers, changing industrial trends, cost efficiency, and competition were identified as the generic drivers, whereas COVID-19 was identified as the primary influencer, leaving a direct impact on production capacity, operational efficacy, success, and the competitive advantage of a business to a great extent. Although the participants were convinced on the effectiveness of digital transformation facilitating virtual working environments, another stance that was quite evident from the research results was that developing the coherence of people to work from home added to the existing operational struggles of both employees and managers. In addition to that, the study results confirmed that digital transformation required the integration of technology with people and society.

5. Conclusion

COVID-19 has, undoubtedly, had a significant impact on the digital transformation of businesses. Despite an increasing interest of businesses towards implementing digital technologies into several business units, the prevalence of COVID-19 has changed the working environment's dynamic, mandating digital transformation as a contributor to the success, competitive advantage, and sustainability of businesses. The study results have also identified COVID-19 as the most significant challenging factor for the transformation of businesses where lack of coherence among employees and people's inability to adapt to the technological interventions might demotivate them and cause disrupted operational activities. The study's results also suggested the benefits of focusing on the training and development of employees to capacitate them to adapt to the new normal working environment.

References

- [1]. Wolan, M. (2020). Next Generation Digital Transformation. Springer Books.
- [2]. Evans, C. (2020). The coronavirus crisis and the technology sector. *Business Economics*, 55(4), 253-266.
- [3]. Berman, S. J. (2012). Digital transformation: opportunities to create new business models. *Strategy & Leadership*.
- [4]. Fletcher, G., & Griffiths, M. (2020). Digital transformation during a lockdown. *International Journal of Information Management*, 55, 102185.
- [5]. Chawla, A., & Ro, S. (2020). Coronavirus (COVID-19)–Is blockchain a true savior in this pandemic crisis. Available at SSRN 3655337.
- [6]. Casalino, N., Żuchowski, I., Labrinos, N., Munoz Nieto, Á. L., & Martín, J. A. (2019). Digital Strategies and Organizational Performances of SMEs in the Age of Coronavirus: Balancing Digital

Transformation with An Effective Business Resilience. Queen Mary School of Law Legal Studies Research Paper Forthcoming.

- [7]. Iida, J. (2020). Digital transformation vs COVID-19: The case of Japan. *Digital Law Journal*, 1(2), 8-16.
- [8]. Schwertner, K. (2017). Digital transformation of business. *Trakia Journal of Sciences*, 15(1), 388-393.
- [9]. Said, B., Hajar, E., & Amine, S. (2020). The COVID-19 outbreak: a catalyst for digitization in African countries. *Journal of the Egyptian Public Health Association*, 95(1).
- [10]. Li, F. (2020). Leading digital transformation: three emerging approaches for managing the transition. *International Journal of Operations & Production Management*.
- [11]. Alashhab, Z. R., Anbar, M., Singh, M. M., Leau, Y. B., Al-Sai, Z. A., & Alhayja'a, S. A. (2020). Impact of coronavirus pandemic crisis on technologies and cloud computing applications. *Journal of Electronic Science and Technology*, 100059.
- [12]. Zhang, J., & Hon, H. W. (2020). Towards responsible digital transformation. *California Management Review*, 62(3).
- [13]. Fu, X. (2020). Digital transformation of global value chains and sustainable post-pandemic recovery. *Transnational Corporations Journal*, 27(2).
- [14]. Nachit, H., & Belhacen, L. (2020). Digital Transformation in Times of COVID-19 Pandemic: The Case of Morocco. Available at SSRN 3645084.
- [15]. Matt, C., Hess, T., & Benlian, A. (2015). Digital transformation strategies. *Business & Information Systems Engineering*, 57(5), 339-343.
- [16]. Schindlwick H. Digital transformation frameworks - applicable for disruptive technologies? *American Scientific Research Journal of Engineering, Technology, and Sciences (ASJRETS)*. 2021;75(No 1).
- [17]. Saunders M, Thornhill A, Lewis P. Research methods for business students. 6th ed. ed. Pearson; 2012.
- [18]. Guba EG, Lincoln YS. Competing paradigms in qualitative research. *Handbook of qualitative research*. 1994;2(163-194):105.
- [19]. Collins H. Creative research: The theory and practice of research for the creative industries. Bloomsbury Publishing; 2018
- [20]. Wiles R, Crow G, Pain H. Innovation in qualitative research methods: A narrative review. *Qualitative research*. 2011;11(5):587-604.
- [21]. Bell E, Bryman A, Harley B. Business research methods. Oxford university press; 2018
- [22]. Hitchcock G, Hughes D. Research and the teacher: A qualitative introduction to school-based research. Routledge; 2002.
- [23]. Cohen L, Manion L, Morrison K. Research methods in education. 8th ed. Routledge; 2018.
- [24]. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative research in psychology*. 2006;3(2):77-101.