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The Integration of Automated Business Models and the Participants within the Workforce in Implementing Digital Transformation

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Abstract— **As technologies are constantly evolving, businesses are seeking out different methods they could use to leverage their competitive advantage; however, there's often the downside of innovation posing the risk of human replacement. Technological advances tend to decrease the need for additional human labour because autonomous systems can perform tasks without human intervention. This potentially threatens the job security of participants in the workforce. To help adopt the research concept of Automating Business Models, they'll require buy-in from the workforce population. Acquiring the adoption of automated business models from the workforce will be essential for the business to facilitate Digital Transformation within their organisation, which is the context of this study. This study uses scoping review methods to analyse the existing literature to support and identify the key themes that impact digital transformation. The key themes identified are used to assist in the integration of automated business models with the Participants within the Workforce to facilitate Digital Transformation through several jobs, job quality, social protection, wages and income, social dialogue, and industrial relations. Technology is used to help automate business models to help innovate firms, business development is essential to compete with competitors and bring value to customers, industry life cycles explain the need to transform before firms become displaced digitally, firms should always aim to keep stakeholders satisfied to create value, and economic growth is necessary for the improvement of society's standard of living.**

Keywords—*Digital Workforce, Business Automation, Digital Transformation, AI Workforce, Digital Workforce*

I. INTRODUCTION

Digital disruptions arise when shifts in fundamental expectations and behaviour in the market caused by advancements in digital capabilities, processes, and assets occur [1]. The turbulence created within an industry induced by a firm using innovative digital technologies creates a depreciation of the perceived value of existing mainstream approaches and technologies [2]. When confronted by disruption, businesses can choose any of the following: to avoid the change and deny its existence, or analyse by waiting to see what will happen next, or take a more active stance and attack the disruption, or decide to opt for an alternative market opportunity, or partner with potential allies to draw solidarity in numbers, or acquire a company which already has the digital technologies required to survive the disruption [1]. Digital disruptions create an urgency for businesses to transform their current business models and are a widespread concern for management across multiple firms within competitive industries [3]. The majority of companies across various industries are aware of the digital disruptions which exist, but not enough are using their digital technologies to respond appropriately to these changes [4]. Digital transformation helps businesses adapt to these changes efficiently. Examples of such automated business models are business cases such as Uber, Airbnb, Amazon leverages services, etc. These types of automated business models require less human involvement and have been a threat to ordinary business models.

II. RELATED WORKS

Digital Transformation (Dx) is a phenomenon that involves radical changes within society and across industries through the use of digital technologies [5]. At an organizational level, Dx allows firms to competitively use digital technologies to innovate their existing business models and to strategically operate more efficiently in the market [5]. Digital technologies affect how business models work, how technologies will be strategically utilized, and how to evaluate the quality of existing products, services, and processes [1]. Dx is successfully implemented when its transformative capabilities affect the core of the business, the allocation of its resources, the rearrangement of the business processes and structures, changes within leadership, and the adoption of a digital culture amongst its workforce [3]. This process can be achieved by adding digital technology to existing products and services to innovate new digital solutions [6]. Emerging technological themes that inform which digital technologies businesses can make use of include artificial intelligence, augmented reality, blockchain, drones, the Internet of Things, robotics, virtual reality, and 3D printing [7]. These Dx trends can be converged with automation to create intelligent information systems with the capability of performing autonomous decision-making [7].

Automation can be defined as the minimization of the necessary amount of human labour required for a job through the application of technology, with the primary objective to emulate the maximum physical and intellectual human capacity possible at a constant rate to improve productivity through increased accuracy and consistency [8]. Before the fourth industrial revolution (4IR), manufacturing firms were known to predominantly make use of automation within their business models as it helped them increase productivity by lowering production costs, producing higher product quality, reducing the number of occupational accidents at work, and

creating less waste from operating machinery [9]. Today, the standard automation tools used within the manufacturing industry are sensors, programmable devices, and industrial robots [10]. Prominent manufacturing companies tend to implement automation elements at a more advanced level than medium and smaller-sized companies [10]. As the benefits derived from automation began to gain broader recognition within the role of humans and human interfaces, other industries such as Healthcare, Transportation, Security, Construction, Agriculture, and Energy started taking an interest in these technologies as well [11]. Automation promotes efficiency across multiple industries and is expected to grow globally by 9.6 per cent, at a compounded annual growth rate [8].

Automation is one of the Dx tools used to streamline processes to improve the overall time and labour costs incurred within a firm [10]. Pursuing automation and efficiency benefits can help businesses move towards digitalization, which is the primary trend affecting modern firm-level innovation [12]. The degree of automation required within a business model will depend on the complexity of tasks, types of decision rules, the sophistication of technology required, the technology available, and the required human intervention needed within the workflow [13]. As the required degree of automation increases, less human intervention is needed to perform a task [8]. The degrees of automation can be categorized as controlled systems, supervised systems, automatic systems and, autonomous systems, listed in order from the lowest required degree of automation to the highest [8]. The degree of automation required by a firm largely depends on its existing business model and the amount of automation required to optimize its efficiency.

Business models can be defined as a company's fundamental strategy for profitably in conducting business and is characterized by its value proposition, functional architecture, and value architecture [14]. Firms have come to learn that sustainability is not necessarily determined by the quality of goods or services they are able to produce, but rather by the quality of digitalization they are able to implement within their business model [15]. Firms are incentivized to constantly improve their business models as it enables them to reshape and pioneer industries, which presents extraordinary growth opportunities [16]. To gain a competitive advantage, firms are incorporating their business models within their strategic planning, as evidence has shown that this allows them to be more resilient and survive competitive environments [17]. Circumstances that could be strategic for firms to change their business models could include responding to digital disruptions; capitalizing on an untapped cutting-edge technology; identifying an opportunity for new business functions which have not been identified by the industry yet; opportunities to fend off low-end disrupters; and, identifying an opportunity to solidify a competitive advantage against industry leaders [16]. When a business model changes, it can decide to adopt automation, extension, or transformation [14]. Automation within business models can be an efficient tool as it enables firms to operate more efficiently and produce better quality products with a reduced lead time while enjoying a simplified production process with improved workflow [10]. It's important to note that automation is intended to enhance existing activities, not necessarily replace them [14]. However, this line is often blurred by the benefits automation presents, as technological advances tend to decrease the need for additional human labour because autonomous systems are able to perform tasks without human intervention. This potentially threatens the job security of participants in the workforce.

Participants in the workforce (PW), along with structural capital make up essential components of a firm's intellectual capital [18]. PW intrinsically carries value as human capital, which helps firms create a competitive edge and manage an active repository of knowledge [18]. Within this study, the term "participants in the workforce" will describe the aggregation of different levels of skilled labourers employed in the labour market. Three classifications are used to describe these participants: Unskilled labourers, Semi-skilled labourers, and Skilled labourers. Unskilled labour will refer to jobs where manual tasks are repeated frequently, the roles and responsibilities are fixed, the tasks are simple, and a high degree of automation can be implemented [13]. The typical jobs within this classification are operators and clerks [8]. Semi-skilled labour will refer to jobs where some manual tasks are repeated, some roles and responsibilities are well-defined, human intervention is defined for specific tasks and an intermediate degree of automation can be implemented [13]. The typical jobs within this classification are supervisors and technicians [8]. Despite being essential for a firm's longevity, Dx can be challenging to implement if the firm lacks a highly skilled IT team, is managed by a rigid leadership style that undermines organizational change management, is unable to anticipate and identify evolving customer needs, is not implemented with a viable strategy, and cannot afford the capital investment required for investing in the required digital technologies [19]. Transformational readiness is essential for firms looking to automate their business models.

Firms should also beware that an increase in the use of automation does not always result in higher service quality, especially in the long run, and may create inefficiencies after a certain point, which means they also need to assess how much automation would be required to optimize their business models [20]. The inefficiency gap caused by automation results from firms moving towards capital-intensive production, causing an increased decline in the labour share of GDP [21]. There also exists a widespread concern about the impacts of automation on PW and how it would potentially change the quality of existing jobs, influence the effects on wage and income inequality, challenge the sustainability of social protection systems, and its influence on social dialogue & industrial relations [22].

III. Methodology

A. Selecting the eligibility criteria

This section will contain information on the eligibility criteria determined by the study's population, concept, context (PCC) and credible sources; a search strategy is provided to organize and structure the key terms used to search in a database as shown in Figure 1. The data mapping process processed these matching fields from across different databases and analysed them to provide valid insight into the research.

Data was collected with the intention of being used in this research study with the aim of finding out how firms can automate their business models successfully to compete within their respective industries and still receive the buy-in

from their labourers through the adoption of these digital technologies. To promote the efficacy of this research, "Inclusion" and "Exclusion" eligibility criteria were implemented to test the validity and reliability of the data intended for use.

Within this study, a three-step search strategy was utilized to consider the validity and reliability of the data that was used as well as the associated ethical and access issues [23]. Reliability is important for ensuring the research is replicable and consistent. Validity within the eligibility criteria is essential for assessing the appropriateness of the measures used, the accuracy of the analysis of the results and the general generalisability of the findings [23]. Figure 1 provides a detailed step process that was used to develop the key search string used in different databases.

Key search words identified with the PPC framework		
Step 1# Preliminary words identified with the PPC framework		
- "Digital Transformation" AND "Automation" AND "Business Models" AND "Workforce"		
Step 2# Key words used for final search		
Population: - Workforce - Union	**Concept:** - Digital Transformation	**Context:** - Automation - Business Models - Automating Business Models - Adopt
Step 3# Synonym List		
- Workforce - Employees - Labour - Future of Work - Collective Bargaining Council	- Digitalization/Digitalization - Technological Change - Technological Innovation	**Automation:** - Autonomous - Artificial Intelligence* - Robotic* **Business Models:** - Business Model **Automating Business Models:** - Industry 4.0

Fig. 1. Key Search words

The final search string was as follows:

("Digital transformation" OR Digitalization) AND ("Automation" AND "Business Model") AND ("Workforce" OR "Employees" OR labour AND "future of work")

During the data mapping process, a free SaaS (Software as a Service) tool was used to facilitate systematic reviewing and synthesizing of knowledge from various databases. Rayyan is an Artificially Intelligent collaborative tool that was used to improve the process of screening and selecting studies within this research data mapping process. During this process, Rayyan was able to detect possible duplicates across multiple studies; tally the number of studies that are manually included in the study; be programmed to detect important keywords which will be included/excluded; identify themes that emerge from included papers; detect the languages of each included abstract; identify the names of authors as well as the year of publication for each paper.

B. Search Results

During the selection of sources of evidence, the search string formulated in Chapter 2 was applied to six search engines which are visible at the top level of the PRISMA-ScR diagram in Figure 2. As the research flows through the diagram, the search results are funnelled down to improve the validity and credibility of the sources by ensuring they remain relevant in answering the research question. Initially, 2192 sources were identified and funnelled down to a total of 38 sources through multiple rounds of screenings.

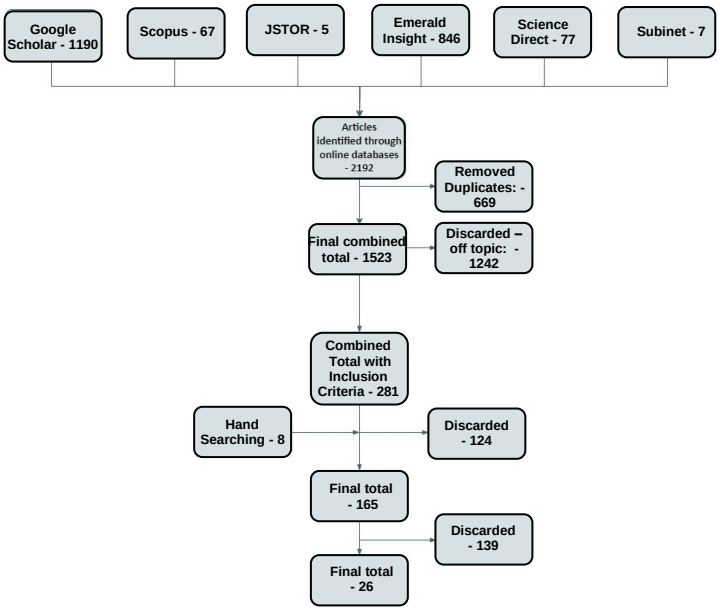

Fig. 2. PRISMA Diagram

During the data mapping process, characteristics of the sources of evidence are coded and analysed to help identify which sources will be relevant in answering the research problems.

IV. Experiments and Results

The aim of this research study is to identify how firms can automate their business models successfully to compete within their respective industries and still receive the buy-in from their labourers through the adoption of these digital technologies. To find valid and credible insights to guide this research objective, sub-research questions were developed to investigate prevalent enablers and challenges of automating business models that exist within the digital transformation process; the actual impact digital transformation has on participants within the workforce; and identify how to integrate automated business models along with the participants within the workforce. Five distinct codes have been developed to encompass these formulated themes which result from the screened sources of evidence. These are shown the Figure 3 below.

Variables		
Enablers	**Challenges**	**Impact**
1. Technological Capabilities 2. Business Model Innovation 3. First-Mover Influence 4. Adoption from Techno-optimists 5. Triple Bottom Lining	1. Technological Deployment 2. Ungovernable Incompetence 3. Investment in Maturing Market 4. Resistance from Techno-pessimistic Stakeholders 5. Unemployment	1. Number of Jobs 2. Quality of Jobs 3. Social Protection 4. Effects on Wage and Income 5. Social Dialogue and Industrial Relations

Fig. 3. Variables from the analysis of results.

A. Themes analysis

Using a qualitative reasoning approach, themes were induced to help create broad generalizations. When integrating automated business models with the Participants within the Workforce, more frequent results occur. Using a word cloud, 50 different themes were identified which were focused on people and technology as shown in figure 4. Automation will certainly create change and require new business models. Employment will both be positively and negatively affected to certain extents. From the data, there is evidently a concern about the level of skill required from participants within the workforce when integrating automated business models with workers.

Fig. 4. Word Cloud for integration of business models

B. *Process of integration*

Digital Transformation is enabled by firms in the context of automation when they are able to recognize the potential benefits of the technological capabilities to be adopted within their business models; they are able to understand how dynamic business models are, and in response, use business development strategies to innovate their business models; when firms start assessing their own performance within their macro environments and benchmark where they are within the industry; when they have the full buy-in from techno-optimistic stakeholders; and when they are able to add value through economic growth. Dx is challenged when firms in the context of automation are not able to deploy these technologies within their business models due to how complex these processes are. Another challenge is when firms become comfortable using legacy or current technologies which are maturing out, instead of pursuing embryonic technologies, or when they do not have full buy-in from techno-pessimistic stakeholders; or when firms start creating adverse effects on economic growth while trying to innovate.

Participants in the workforce would notice the impacts of automation at varying degrees depending on the level of skill they possess, but it can be said with certainty that unskilled labourers would be impacted the hardest and highly skilled labourers would derive benefits from the introduction of automation in business models. Based on the thematic analysis of the enablers and challenges of implementing automated business models in digital transformation, Figure 5 was developed to provide the key factors that would influence the successful integration of automating business models with the workforce. The key components identified used to assist in the integration of automated business models with the Participants within the Workforce to facilitate Digital Transformation are Technology, Business Development, Industry Life Cycles, Stakeholders, and Economic Growth.

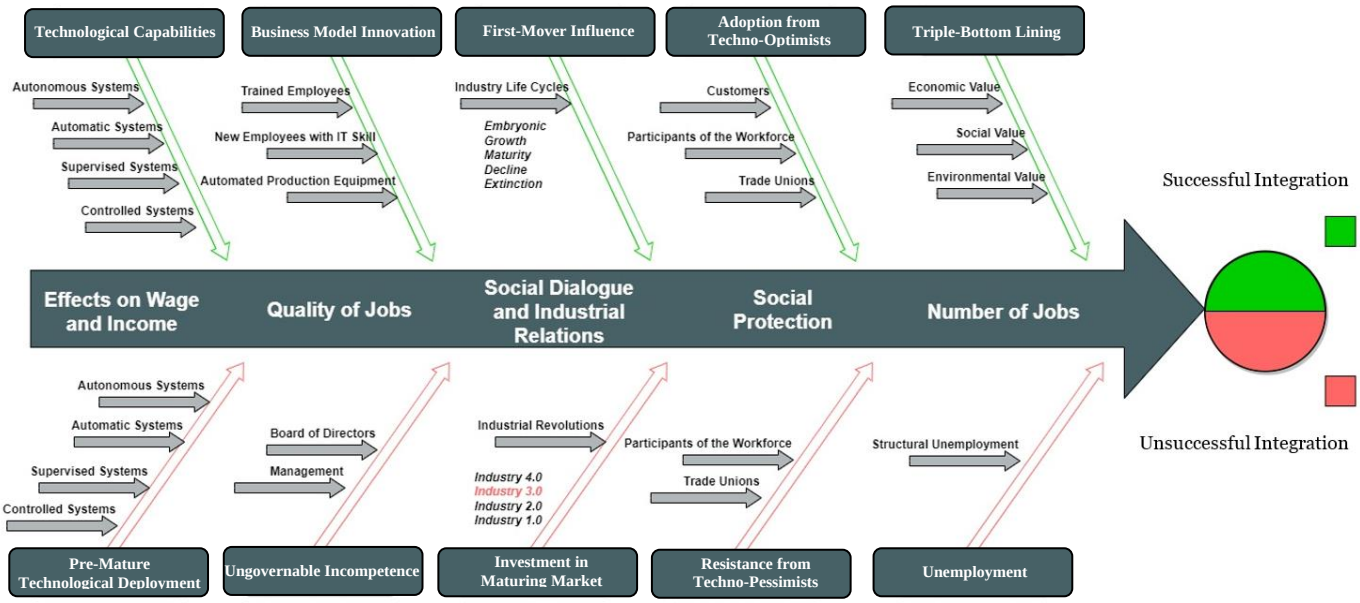

Fig. 5. Process developed to enable the Integration of Automating Business Models

Five key enablers were identified as fundamental to the process of integration. These were the effects on wages and income, quality of jobs, social dialogue and industrial relations, social protection and the number of jobs, each component will highlight the possibility of integration as per Figure 5. To ensure integration, a proposed solution for the adoption of automated business models through wage and income can be achieved by firms revising their remuneration

packages to broaden the scope of their labour investment to include internal training, improvement in employees' skills, and provide fair wages for labourers [24]. The investment placed in upskilling unskilled labourers would help their skills remain relevant when systems become automated; increasing the value of their contributions which could potentially result in the labour meriting higher wages by gradually transforming [24].

The quality of jobs would be improved through retraining current participants, employing new participants with valuable skills, and acquiring automated equipment to reduce unfulfilling routine-based tasks and promote more meaningful tasks to facilitate integration. Relating to the social dialogue and industrial relations, the impact of digital transformation on the workforce would result in the creation of digitally supplied workers across multiple industries [25]. These newly created digitally supplied jobs currently don't have a membership with trade unions as unions recognize them as self-employed workers. Even though these digitally supplied workers are contractually employed by their clients, a bargaining asymmetry exists in favour of standard workers [25]. Due to competition laws, digitally supplied workers are discouraged from participating in collective bargaining and don't have access to representation within several jurisdictions [25].

Trade Unions exist for the purpose of promoting that balance of power within the employment relationship [25], but if automation is a perfect substitute for labour, what level of social protection can trade unions provide for automated business models? The impact that automated business models would have on social protection would mostly result from trade unions not being exposed to enough automation collective bargaining use cases and potentially a lack of knowledge experts who have experience in handling competition laws, jurisdiction limitations, and the "*platformisation*" of labour to achieve optimal integration.

The rationale behind the positive effects of automation on the number of jobs created in the labour market comes from the assumption that as automation grows within the firm, the need for new tasks will need to be created to facilitate and maintain the productivity of the automation capital [26]. Job creation will also vary across unskilled, semi-skilled and skilled professions as the effects of automation tend to be felt the most by most routine-based jobs [8]. From the integrated automated business model, the firm will be able to utilize its key resources to create new value propositions; attract new customer segments, and potentially create new industries.

V. Conclusion

Economic growth is a key component for Dx as it provides a triple bottom lining for automated business models through the strategic use of creating economic value, social value, and environmental value. Economic growth can be challenged through structural unemployment. When automation is applied to the participants of the workforce, the number of jobs that would be positively impacted by the number of new jobs created increase at a faster rate than the share of jobs that are displaced from automation to mitigate against the effects of structural unemployment, negative impacts occur due to structural unemployment being inevitable and firms would start showing more interest in recruiting semi-skilled and skilled labourers over unskilled labourers. Technology is used to help automate business models to help innovate firms; business development is essential to compete with competitors and bring value to customers; industry life cycles explain the need to digitally transform before firms become displaced; firms should always aim to keep stakeholders happy as without them the firm would not be able to create value; and economic growth is necessary for the improvement of society's standard of living.

References

[1] D. Schallmo, C. A. Williams, and L. Boardman, "Digital Transformation of Business Models — Best Practice, Enablers, and Roadmap," *International Journal of Innovation Management*, vol. 21, no. 08, p. 1740014, Dec. 2017. [Online]. Available: https://doi.org/10.1142/s136391961740014x. [Accessed May 4, 2022].

[2] D. A. Skog, H. Wimelius, and J. Sandberg, "Digital Disruption," *Business & Information Systems Engineering*, vol. 60, no. 5, pp. 431–437, Jul. 2018. [Online]. Available: https://doi.org/10.1007/s12599-018-0550-4. [Accessed Aug. 7, 2022].

[3] S. Nadkarni and R. Prügl, "Digital transformation: a review, synthesis and opportunities for future research," *Management Review Quarterly*, vol. 71, no. 1, pp. 233–341, 2020. [Online]. Available: https://doi.org/10.1007/s11301-020-00185-7. [Accessed May. 31, 2022].

[4] G. C. Kane, "Why Companies Don't Respond to Digital Disruption," *MIT Sloan Management Review*, Jan. 09, 2018. [Online]. Available: https://sloanreview.mit.edu/article/why-companies-dont-respond-to-digital-disruption [Accessed Mar. 4, 2022].

[5] G. Vial, "Understanding Digital transformation: a Review and a Research Agenda," *The Journal of Strategic Information Systems*, vol. 28, no. 2, pp. 118–144, Jun. 2019. [Online]. Available: https://doi.org/10.1016/j.jsis.2019.01.003. [Accessed Sept. 30, 2022].

[6] K. Schwertner, "Digital transformation of business," *Trakia Journal of Science*, vol. 15, no. 1, pp. 388–393, 2017, [Online]. Available: https://doi.org/10.15547/tjs.2017.s.01.065. [Accessed July. 22, 2022].

[7] S. Liken, "The Essential Eight Technologies," *PwC*, 2017. [Online]. Available: https://www.pwc.com/us/en/tech-effect/emerging-tech/essential-eight-technologies.html. [Accessed Nov. 15, 2022].

[8] C. Beziudenhout, A. Wocke, N. Plint, and M. Mhtombeni, *The impact of job automation on shifts in levels of work*. Pretoria: UP, 2021.

[9] H. Rahnama, K. Johansen, L. Larsson, and A. Ö. Rönnbäck, "Exploring digital innovation in the production process: A suggested framework for automation technology solution providers," *Procedia CIRP*, vol. 104, no. 1, pp. 803–808, 2021.[Online]. Available: https://doi.org/10.1016/j.procir.2021.11.135. [Accessed Sept. 1, 2022].

[10] Z. Papulová, A. Gažová, and Ľ. Šufliarský, "Implementation of Automation Technologies of Industry 4.0 in Automotive Manufacturing Companies," *Procedia Computer Science*, vol. 200, no. 1, pp. 1488–1497, 2022. [Online]. Available: https://doi.org/10.1016/j.procs.2022.01.350.[Accessed May. 23, 2022].

[11] K. Goldberg, "IEEE Robotics & Automation Magazine: What is Automation?," *IEEE Robotics & Automation Magazine*, vol. 11, no. 3, pp. 01–01, 2004. [Online]. Available: https://doi.org/10.1109/mra.2004.1337813.[Accessed Aug. 16, 2022].

[12] J. Thomä and T. S. Bischoff, "From automation to databased business models - digitalization and its links to innovation in small and medium-sized enterprises," *ifh Working Papers*, vol. 31, no. 2, 2022,[Online].Available:https://ideas.repec.org/p/zbw/ifhwps/312021.html.[Accessed June 22, 2022].

[13] T. Zayas-Cabán, S. N. Haque, and N. Kemper, "Identifying Opportunities for Workflow Automation in Health Care: Lessons Learned from Other Industries," *Applied Clinical Informatics*, vol. 12, no. 3, pp. 686–697, 2021. [Online]. Available: https://doi.org/10.1055/s-0041-1731744. [Accessed June 11, 2022].

[14] F. Li, "The digital transformation of business models in the creative industries: A holistic framework and emerging trends," *Technovation*, vol. 92–93, p. 102, 2020. [Online]. Available: https://doi.org/10.1016/j.technovation.2017.12.004.[Accessed Oct. 5, 2022].

[15] T. Sinyuk, E. Panfilova, and R. Pogosyan, "Digital transformation of SME business models as a factor of sustainable socio-economic development," in *E3S Web of Conferences*, A. D. Nazarov, Ed., 2021, p.108.[Online].Available:https://doi.org/10.1051/e3sconf/202129501028. [Accessed May. 31, 2022].

[16] M. W. Johnson, C. M. Christensen, and H. Kagermann, "Reinventing Your Business Model," *Harvard Business Review*, vol. 86, no. 12, 2008. [Online]. Available: https://hbr.org/2008/12/reinventing-your-business-model [Accessed July 2, 2022].

[17] P. Lindgren and M. A. Abdullah, "Conceptualizing strategic business model innovation leadership for business survival and business model innovation excellence," *Journal of Multi Business Model Innovation and Technology*, vol. 1, no. 3, pp. 115–134, 2013.

[18] M. Birasnav, S. Rangnekar, and A. Dalpati, "Transformational leadership, interim leadership, and employee human capital benefits: an empirical study," *Procedia - Social and Behavioral Sciences*, vol. 5, pp. 1037–1042, 2010. [Online]. Available: https://doi.org/10.1016/j.sbspro.2010.07.232. [Accessed Apr. 27, 2022].

[19] C. Heavin and D. J. Power, "Challenges for digital transformation – towards a conceptual decision support guide for managers," *Journal of Decision Systems*, vol. 27, no. sup1, pp. 38–45, 2018. [Online]. Available: https://doi.org/10.1080/12460125.2018.1468697 [Accessed Apr.13, 2022].

[20] R. T. Rust and M.H. Huang, "Optimizing Service Productivity," *Journal of Marketing*, vol. 76, no. 2, pp. 47–66, 2012. [Online]. Available: https://doi.org/10.1509/jm.10.0441. [Accessed Sept. 16, 2022].

[21] K. Prettner, "The Implications of Automation for Economic Growth and the Labor Share of Income ," 2017. [Online]. Available: https://doi.org/10.1017/s1365100517000098. [Accessed May 13, 2022].

[22] T. Balliester and A. Elsheikhi, "The Future of Work: A Literature Review," 2018. [Online]. Available: https://www.ilo.org/global/research/publications/working-papers/WCMS_625866/lang--en/index.html. [Accessed July 14, 2022].

[23] N. Urbach, M. Röglinger, R. A. Alias, K. Kautz, C. Saunders, and M. Wiener, "Introduction to Digitalization Cases Vol. 2: Mastering Digital Transformation for Global Business," *Management for Professionals*, vol. 2, pp. 1–15, 2021. [Online]. Available: https://ideas.repec.org/h/spr/mgmchp/978-3-030-80003-1_1.html. [Accessed Apr.20, 2022].

[24] I. Brambilla, A. César, G. Falcone, L. Gasparini, and C. Lombardo, "The Asymmetric Risks of Automation in Latin America," *Desarrollo Económico*, vol. 62, no. 235, pp. 234–253, 2022. [Online]. Available: https://www.jstor.org/stable/48670610. [Accessed May.8, 2022].

[25] A. Aloisi and V. Stefano, "Regulation and the future of work: The employment relationship as an innovation facilitator," *International Labour Review*, vol. 159, no. 1, pp. 47–69, 2020. [Online]. Available: https://doi.org/10.1111/ilr.12160. [Accessed Oct.. 9, 2022].

[26] H. Nakamura and J. Zeira, "Automation and Unemployment: Help Is on the Way," *SSRN Electronic Journal*, 2018. [Online]. Available: https://doi.org/10.2139/ssrn.3202622. [Accessed May 17, 2022].