Inovbiz: Jurnal Inovasi Bisnis 10 (2022) 16-22
INOVBIZ
Website: www.ejournal.polbeng.ac.id/index.php/IBP
Email: inovbiz@polbeng.ac.id

DIGITAL TRANSFORMATION IN COOPERATIVE BUSINESS PROCESSES: A STUDY ON COOPERATIVES IN THE GREATER BANDUNG AREA

Ratih Purbasari [1,*], Samún Jaja Raharja [2]
[1,2] Departemen Ilmu Administrasi Bisnis, Universitas Padjadjaran, Jawa Barat, Indonesia, 45363
ratih.purbasari@unpad.ac.id

ARTICLE INFO

Keywords:
Cooperatives, Digital Transformation, Entrepreneurship, Business, Greater Bandung

Received: April 8, 2022
Received in revised: April 9, 2022
Accepted: May 24, 2022
Published: June 31, 2022

Open Access

ABSTRACT

The importance of digital transformation in the 4.0 era requires business organizations to quickly adapt and change their business models in order to continue to survive and be able to compete. This also applies to cooperatives which not only operate as business organizations, but also bring socio-economic value. This study aims to analyze the digital transformation process by raising the locus of cooperatives in the Greater Bandung Region. This study uses mixed methods involving 40 cooperatives as respondents and 10 informants. Data was collected using a questionnaire and an interview process. The research data were analyzed descriptively by using a triangulation process. The results show that the digital transformation of cooperatives in the Greater Bandung area is in a good enough category but still needs to be improved. Future research can use different approaches such as the helix approach to map and analyze actors and their roles in the digital transformation process in cooperatives.

Keywords: Cooperatives, Digital Transformation, Entrepreneurship, Business, Greater Bandung

1. Introduction

The digital era has played an important role in shaping modern society through rapid global communications and networks (Miah & Omar, 2012). Digitalization has set the stage for innovations that have the potential to spark new technological revolutions and cause profound structural changes, which are increasingly integrated into the economy and society. The digital economy has been proposed to be a kind of new form of economy that promotes the improvement of traditional industries and the rapid development of new industries, which have a great influence on the digital transformation of enterprises (Deng *et al* ., 2020).

Digital transformation, defined as the use of new digital technologies to enable big business improvements (such as improving customer experience, streamlining operations, or creating new business models) (Fitzgerald *et al* ., 2013). According to McKinsey, digital transformation is the rearrangement of technology, business models and processes to ensure new value for customers and employees in a constantly changing and developing digital economy (Ulas, 2019).

Currently, those who are able to survive in the rapidly growing digital era are humans and operations that follow the technological era. The use of more significant pillars of digital transformation has been driven by innovation accelerators, which include, among others, internet of things, robotics, artificial intelligence, blockchain, nanotechnology, cloud computing, and big data (Moreira *et al* ., 2018; Ulas, 2019) .

This digital transformation phenomenon also has an impact on SMEs and cooperatives (Morais & Bacic, 2020). In reality, however, cooperatives generally face difficulties in designing, implementing and achieving full digitization of their strategic and organizational models. This is because cooperatives have limited resources, have gaps in cognitive assets and lack organizational capabilities (Li *et al* ., 2018; Garzoni *et al* ., 2020). Nevertheless, digital transformation for cooperatives is very important because cooperatives have been considered as the backbone of a country's economy, as well as community-based organizations that have an important role throughout the world in poverty alleviation, job creation for economic growth and social change (Hambani). & Harefa, 2019; Purbasari & Raharja, 2021). Digital technology enables cooperatives to leverage and access global markets and knowledge networks at relatively low costs (Ulas, 2019).

The literature highlights the need for an in-depth understanding of the business and managerial aspects of digital transformation, especially in a cooperative context where the

* Ratih Purbasari
E-mail addresses ratih.purbasari@unpad.ac.id (Ratih Purbasari)

potential for digital transformation requires the adoption of models inspired by the principles of collaboration and networking (Garzoni *et al* ., 2020). So far, little research has explored how cooperatives address managerial issues in digital transformation, researchers have hardly studied how cooperatives can overcome cognitive bias and successfully lead digital transformation (Li *et al*., 2018). Therefore, this study tries to complement the study of digital transformation, especially in cooperatives, which can help develop both in terms of literature and practice.

This study aims to analyze the digital transformation process in cooperatives in the Greater Bandung area, West Java which includes Bandung City, Bandung Regency, West Bandung Regency, and Cimahi City. The research is expected to provide an explanation of the conditions, challenges and obstacles, as well as strategies in the digital transformation process in cooperatives in the West Bandung area that can be used as input for policy makers, especially the West Java government, which is incessantly carrying out Digital Transformation of Cooperatives so that cooperatives can make adjustments to the environment. the development of the digital era (Purbasari & Raharja, 2021).

2. Method

This research uses mixed methods , namely methods that involve the collection or analysis of quantitative and/or qualitative data in a single study in which data is collected simultaneously or sequentially, given priority, and involves data integration at one or several stages in the research process (Creswell, 2014).

The research was conducted from June to September 2021 on cooperatives in the Greater Bandung Region which includes Bandung City, Bandung Regency, West Bandung Regency, and Cimahi City. The selection of this location was based on the consideration that cooperatives in the Greater Bandung area since a few years ago have been intensively carrying out digital transformation so that cooperatives can make adjustments to the development of the digital era through cooperative modernization (Purbasari & Raharja, 2021). This is reinforced by the statement of the Head of the West Java Province Cooperatives and SMEs Office, Kusmana Hartadji, that the digitization process for cooperatives is very much needed and the digital development of cooperatives in West Java cooperatives is very high (Purbasari & Raharja, 2021).

Due to the limited data available and the inaccuracy of secondary data with field data, the sampling method used in this study was snowball sampling (Sekaran & Bougie, 2016) with a sample size of 40 respondents. The data acquisition to saturation through in-depth interviews involving 10 informants. The characteristics of the informants in this study are:

1. Cooperatives located in the Greater Bandung area
2. Cooperative with active status
3. Cooperatives with certified status

Informants and respondents in this study are cooperative administrators as representatives of cooperative entrepreneurs who play a major role in advancing cooperatives. Respondent sample size data can be seen in the following table.

Table 1. Research Respondent Data

Daerah	Ukuran
Bandung City	20
West Bandung Regency	4
Bandung Regency	10
Cimahi City	6
Greater Bandung Region	40

Source: Data Processing 2021

The questionnaire data obtained from the cooperative management was then processed with the SPSS 25.0 application for further tabulation and interpretation. Meanwhile for processing and analyzing qualitative data that has been obtained from in-depth interviews, it is carried out interactively and takes place continuously to completion, including data reduction activities, data presentation, drawing conclusions from the results found (Miles *et al* ., 2019). The results of the questionnaire and interview data were then analyzed descriptively using the triangulation process.

To support the process of data collection and analysis, this study uses a theory and framework of digital transformation which refers to the opinion of Reddy & Reinartz (2017) and Bumann & Peter (2019) which state that digital transformation is the use of computer and internet technology for the process of creating economic value. more efficient and effective" and in a broader sense, refers to new technological changes as a whole, about how companies operate, interact, and configure, and how wealth is created within these systems. The dimensions of digital transformation consist of can be seen in table 2 below:

Table 2. Operationalization of Concepts

Variable	Dimensions
digital transforma-tion	a. Strategy b. Organization c. Culture d. Technology e. Customer f. People

Sources: Reddy & Reinartz (2017) and Bumann & Peter (2019)

3. Results and Discussion

Description analysis was conducted to determine the description of the Digital Transformation variable. In this section, it will be explained through the assessment scores obtained from the results of data processing on the statement indicators on the Digital Transformation variable which consists of 6 dimensions which are developed into 21 statements. The six dimensions of the Digital

Transformation framework include strategy, organization, culture, technology, customers, and people (Reddy & Reinartz, 2017; Bumann & Peter, 2019). Each dimension is explained through a score from the processing results obtained based on each statement indicator which will ultimately explain the description of the digital transformation variable. In the following, a descriptive analysis of each dimension will be presented.

3.1. Strategy

The literature reveals the theoretical concepts of strategy and demonstrates the importance of building sophisticated digital strategies for successful digital transformation. The digital strategy of a successfully transformed organization is not only well documented, but also communicated within the organization and internalized by employees of all levels (Kane *et al*., 2016; Schumacher *et al* ., 2016). The strategy dimension is measured by 4 statements and the following are the results of the analysis of the strategy dimension.

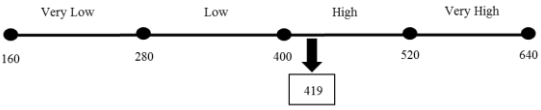

Figure 1. Categorical Model Dimension Strategy (Source : Data Processing 2021)

From figure 1, it can be seen that the strategy dimension is in the high category but tends to be low. This can be interpreted that cooperatives in the Greater Bandung area already have a digital transformation strategy formulation, document and communicate digital transformation strategies, have sufficient resources to carry out digital transformation strategies and have explored and evaluated the latest trend developments related to digital transformation for the benefit of cooperatives are in good condition but still need to be improved. From the interviews, it is known that not all cooperatives already have a digital transformation strategy, while those that already have a strategy also still face various obstacles in pursuing the digitization process in their cooperatives, including the difficulty of implementing the strategies that have been prepared due to several unsupportive factors such as human resources and facility capacity. which is available. However, cooperatives continue to strive to realize digital transformation for the progress and competitiveness of their cooperatives.

This is in line with the opinion of Kane *et al* ., (2016) and Ismail *et al*., (2018) that several studies on success stories reveal that improving the competitive position of successful companies mainly depends on the strategies implemented by leaders and only on technology. which they adopted. Therefore, digital transformation is driven by strategy, not technology. Some researchers explain that strategically important and challenging topics such as digital transformation require independent strategies that are not part of any other functional or organizational structure. Such a comprehensive enterprise-wide digital transformation strategy goes beyond functional thinking and holistically addresses the opportunities and risks emanating from digital technology (Singh & Hess, 2017). In addition, the strategy will support the organization in its digital transformation journey and can act as a unifying concept to coordinate, prioritize and implement all digital transformation efforts (Bumann & Peter, 2019).

3.2. Organization

Gimpel *et al* (2018) stated that this dimension includes organizational agility, which refers to its ability to respond quickly to changes in technology or the market environment. The dimensions of the organization are measured by 4 statements and the following are the results of the analysis of the dimensions of the organization.

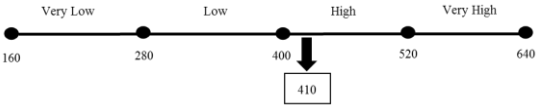

Figure 2. Categorical Model Dimension Organization (Source : Data Processing 2021)

From figure 2, it can be seen that the organizational dimension is in the high category but tends to be low. This can be interpreted that cooperatives have collaborated with other parties related to digital transformation, are agile and collaborate with other parties with different functions/types roles and have special investments to carry out digital transformation, but still need to be improved. Based on the results of interviews obtained information that most cooperatives work and collaborate with other parties, especially with the government. While a small number of them are also cooperating with universities, banks and the market. These various parties assist the cooperative's digital transformation process through training, mentoring, technical guidance, research and funding activities. Cooperatives as social business organizations themselves continue to strive to develop their knowledge and abilities in carrying out digital transformation so that cooperative business processes that are supported by digital technology can be realized and run successfully.

The importance of digital transformation for organizations is fully realized by cooperatives as the literature states that in recent years, digital transformation has emerged as an important phenomenon in strategic research of information systems (Bharadwaj *et al*., 2013) as well as for practitioners (Fitzgerald *et al*., 2013) . At a high level, digital transformation includes major changes that occur in society and industry through the use of digital technology (Majchrzak *et al* ., 2016). At the organizational level, it has been argued that companies must find ways to innovate with these technologies by designing “strategies that cover the implications of digital transformation and drive better operational performance” (Singh & Hess, 2017; Vial, 2019). To plan and implement digital transformation, organizations must have a clear strategy and

place “digital” at the heart of their business strategy (VanBoskirk, 2016; Bumann & Peter, 2019). Digital transformation is a process in which organizations respond to changes that occur in the environment by using digital technology to change the organization's value creation process. For this process to be successful and produce positive results, organizations must take into account a number of factors that can hinder the implementation of digital transformation (Vial, 2019).

3.3. Cultural

The company's culture and focus on the future play an important role for a successful digital transformation. Hofstede *et al* (2015) define organizational culture as “the collective programming of the mind that distinguishes members of one organization from another”. The cultural dimension is measured by 3 statements and the following is the result of the analysis of the cultural dimension.

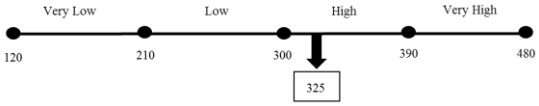

Figure 3. Categorical Model Dimension Culture
(Source : Data Processing 2021)

From figure 3, it can be seen that the cultural dimension is in the high category but tends to be low. This can be interpreted that cooperatives already have a culture to give administrators the freedom to experiment to find new things, especially related to digital transformation. Cooperatives have also had a strong commitment to management to carry out digital transformation and have strong leadership to guide cooperatives in digital transformation. All of these conditions are good but still need to be improved.

Based on the results of interviews, information was obtained that cooperatives in the Greater Bandung area have a culture of openness in communication and provide broad opportunities for cooperative members to participate in the digital transformation process carried out by cooperatives. This is because the management and members have the same commitment to continue advancing the cooperative in order to keep up with the times. However, it must be admitted that some cooperatives are led by figures from generation x who feel they are not able to directly explore technology, but support and have a strong desire to encourage cooperatives to transform. Therefore, the role of members from the millennial generation who are considered more capable, is highly accepted and needed, especially with regard to the implementation of technology in cooperative business processes.

This is in line with the opinion of Bumann & Peter (2019) which states that corporate culture and its focus on the future play an important role for a successful digital transformation. Kane *et al* (2016) reveal that digitally mature corporate organizational cultures all share common characteristics such as quick experimentation, expanded risk appetite, and investment in talent. In addition, they value soft skills in leadership more than technical strength. These features are supported by Schlaepfer, R. *et al* (2017) who claim that corporate culture should provide freedom for experimentation, room for creativity, and continuous experimentation. However, the establishment of such a culture requires a strong and ongoing commitment from the board and executives who must support the digital strategy (VanBoskirk, 2016; Bumann & Peter, 2019).

3.4. Technology

Hess *et al* (2016) assert that an important dimension of digital transformation is the organization's approach to the use of new digital technologies (Hess *et al* ., 2016). Therefore, the technology dimension focuses on the use and adoption of emerging technologies. VanBoskirk (2016) states that companies should have a collaborative, flexible and iterative approach to technology development and take advantage of modern architectures such as the cloud and application programming interfaces (APIs) to promote flexibility and speed. The use of APIs allows organizations to incorporate cutting-edge technologies from the ecosystem into key areas where partnerships are needed (Nienaber, 2016). The technology dimension is measured by 4 statements and the following is the result of the analysis of the technology dimension.

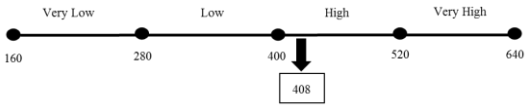

Figure 4. Categorical Model Dimension Technology
(Source : Data Processing 2021)

From figure 4, it can be seen that the technology dimension is in the high category but tends to be low. This can be interpreted that cooperatives have exploited technology and always take advantage of new technologies. The cooperative has also digitized its operational system and has information technology security. All of these conditions are good enough but still need to be improved.

From the interview results, it can be understood that some cooperatives in the Greater Bandung area are still having difficulties in getting the right technology to support their business processes. Not only that, even if the technology is, the cooperative management admits that it is still difficult to operate the technology due to limited information, knowledge and abilities. In addition, the administrators also explained that the existence of these limitations greatly hampered the digital transformation process for cooperatives, thus requiring assistance from other parties regarding these problems. So far, the government, universities and the market, in this case the cooperative members, have provided some training and assistance in digitizing cooperatives, but it is still not enough and unsustainable so that they have not shown tangible results of technological changes in cooperatives.

This condition is in line with the explanation of Xu *et al* (2018) where cooperatives and SMEs

are characterized by limited resources and present gaps in terms of cognitive and organizational assets. Furthermore, there is a limited understanding of how organizations need to change to embrace technological innovation and the accompanying business changes, where technology is still not much explored (Mikalef *et al*., 2017). Therefore, in the context of cooperatives and SMEs, the potential for digital transformation requires the adoption of models inspired by the principles of collaboration and networking (Garzoni *et al* ., 2020).

3.5. Customer

The customer should have the possibility to interact with the organization through either classic or digital channels and therefore, the organization should ensure consistent content and deliver a properly designed customer experience across all digital and non-digital channels (Berghaus *et al* ., 2017). The customer dimension is measured by 4 statements and the following are the results of the analysis of the customer dimension.

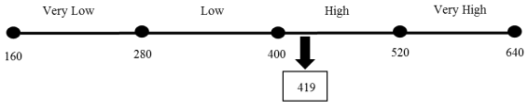

Figure 5. Categorical Model Dimension Customer
(Source : Data Processing 2021)

Figure 5 shows that the customer dimension is in the high category but tends to be low. It can be interpreted that cooperatives communicate with customers through various media. Cooperatives also pay attention to or listen to customer views and experiences, especially those involving digital transformation and involving customers in cooperative product development. This condition illustrates that the customer dimensions are good enough but still need to be improved.

As explained by the cooperative management, most of the customers in cooperatives are members of the cooperative itself. The cooperative tries to facilitate communication with its members using several media, such as creating a group on the What'sup application for easy communication. Cooperatives are very open with input of knowledge and experience of members related to digital transformation. Every cooperative digital transformation policy and strategy before being decided must first obtain approval from cooperative members. Although the involvement of customers in cooperatives is limited to their role, members' opinions become a consideration for cooperatives in developing or innovating cooperative products or services because members are customers whose needs must be considered and served. The behavior of members as customers also influences the cooperative's decision to carry out digital transformation.

This is relevant to the opinion of experts who state that changing customer behavior and the increasing popularity of digital channels are forcing organizations to bridge the digital and physical worlds by offering seamless hybrid interaction channels (Puschmann, 2017; Bumann & Peter, 2019). In addition, organizations should take advantage of the benefits of digital technology by collecting customer data and using customer insights, for example to predict customer behavior and provide customized and personalized products and services with a better customer experience (Back & Berghaus, 2016; Andersson *et al* ., 2018). Gimpel *et al* (2018) suggest that organizations should involve customers in the process of innovation and product development (Bumann & Peter, 2019). Business organizations undergoing digital transformation must also rethink what customers value most, and create operating models that take advantage of new possibilities for competitive differentiation (Berman, 2012; Tarutė *et al.* , 2018).

3.6. People

People dimension mainly includes employees with their skills and abilities (Bumann & Peter, 2019). The people dimension is measured by 2 statements and the following are the results of the analysis of the people dimension.

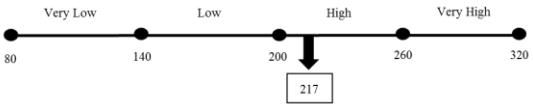

Figure 6. Categorical Model Dimension People
(Source : Data Processing 2021)

Based on Figure 6, it can be seen that the people dimension is in the high category but tends to be low. This can be interpreted that the cooperative has provided education and training for the development of new skills for its administrators, especially for mastering digital transformation, but it is not yet optimal. In addition, the cooperative has also arranged flexible working hours for its administrators. This condition illustrates that the people dimension is good but still needs to be improved.

Based on the opinion of the cooperative management, it is known that most cooperatives in the Greater Bandung area have not been able to provide education and training to the management optimally due to limited knowledge and experience as well as cooperative facilities and infrastructure and the cooperative's human resources as previously described. Cooperation and collaboration with other parties have been carried out to meet the needs of increasing the capacity and expertise of cooperative management in carrying out the digital transformation, but it has not shown significant progress. However, the cooperative management has a high enough enthusiasm and commitment to continue to strive to realize digital transformation for cooperatives so that they are able to adapt to changes in an increasingly digital environment so that cooperatives can continue to run and be able to compete.

Currently, those who are able to survive in the rapidly growing digital era are humans and operations that follow the technological era, Andersson et al (2018) argue that apart from the many technological resources required for successful digital

transformation, it also requires new human skills and experience with different digital technologies. Therefore, organizations must develop and implement appropriate training schemes and educate, train and develop digital skills as well as entirely new skills to strengthen employability and personal development of their employees (Mettling & Barré, 2016; Schlaepfer, R. et al. ., 2017).

4. Conclusion

Based on the results of the research analysis, the conclusion that can be formulated is that the condition of the digital transformation of cooperatives in the Greater Bandung Region as a whole is in the good enough category but still needs to be improved, especially on the *people dimension* which has the lowest score compared to other dimensions. Thus, from this study it was found that the HR factor is a factor that still needs attention to support the digital transformation of cooperatives, especially in the Greater Bandung area. Therefore, in dealing with the limited capacity of human resources, apart from actively participating in training with the theme of digital technology, cooperative entrepreneurs in the Greater Bandung area should also actively involve cooperative members from the millennial generation who are recognized as being more creative and innovative in utilizing technology. The involvement can be in the form of designing, manufacturing, and using applications that are relevant to the characteristics of the cooperative business so that it will make the operationalization of the cooperative easier.

This study has limitations by involving only one variable. Therefore, further research can use other variables related to digital transformation, such as innovation and the digital ecosystem to help develop business innovation in cooperatives. Future research can also use different approaches such as the helix approach to map and analyze actors and their roles involved in the digital transformation process in cooperatives.

Acknowledgements

The Research Team would like to thank the Directorate of Research and Community Service of Padjadjaran University for funding this research facility through the *Academic Leadership Grant scheme* 2021.

References

Andersson., *et al*. (2018). Managing Digital Transformation. *Stockholm School of Economics Institute for Research*, 2018.

Back, A., & Berghaus, S. (2016). Digital Maturity & Transformation Studie: Über das Digital Maturity Model. *Universität St. Gallen*, *2*(November), 1–19.

Berman, S. J. (2012). Digital transformation: Opportunities to create new business models. *Strategy and Leadership*, *40*(2), 16–24.

Bharadwaj., *et al.* (2013). Digital Business Strategy: Toward a Next Generation of Insights. *MIS Quarterly*, *37*(2), 471–482.

Bumann, J., & Peter, M. (2019). Action fields of digital transformation–a review and comparative analysis of digital transformation maturity models and frameworks. *Digitalisierung Und Andere Innovationsformen Im Management*, *2*(November), 13–40.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publications, Inc; Printed in the United States of America

Deng., *et al*. (2020). Analysis on the development of digital economy in Guangdong Province based on improved entropy method and multivariate statistical analysis. *Entropy*, *22*(12), 1–21. https://doi.org/10.3390/e22121441

Dintrans., *et al.* (2017). Why Banks Must Become Smart Aggregators in the Financial Services Digital Ecosystem . *Technology Solutions, Cognizant.*, 2017.

Fitzgerald., *et al.* (2013). Embracing Digital Technology: A New Strategic Imperative | Capgemini Consulting Worldwide. *MIT Sloan Management Review*, *55*(1), 1–13.

Garzoni., *et al*. (2020). Fostering digital transformation of SMEs: a four levels approach. *Management Decision*, *58*(8), 1543–1562. https://doi.org/10.1108/MD-07-2019-0939

Gassmann, O. (2018). Studie Digital Banking 2025: Generation- Y treibt den digitalen Wandel – vier Banktypen werden entstehen. *IT Finanzmagazin*.

Gimpel., *et al.* (2018). Structuring Digital Transformation : A Framework of Action Fields and its Application at ZEISS. *Journal of Information Technology Theory and Application*, *19*(1, Article 3), 31–54.

Hambani, S., & Harefa, E. (2019). Analisis Kewirausahaan, Permodalan, Partisipasi Anggota Dan Keberhasilan Keuangan Koperasi Pegawai Republik Indonesia. Jurnal Akunida, 5(1), 69. https://doi.org/10.30997/jakd.v5i1.1870

Hess., *et al*. (2016). Options for formulating a digital transformation strategy. In *MIS Quarterly Executive* (Vol. 15, pp. 123–139). Routledge. https://doi.org/10.4324/9780429286797-7

Hofstede, G. (2015). *Culture's Software: Communication Styles*. Cambridge Scholars Publishing, 2015.

Ismail., *et al*. (2018). Digital Business Transformation and Strategy: What Do We Know So Far? University of Cambridge. *Journal University of Cambridge*, *November 2017*.

Kane., *et al*. (2016). Preparing for the digital business transformation. *MIT Sloan Management Review*, *58180*, 1–27.

Li., *et al*. (2018). Digital transformation by SME entrepreneurs: A capability perspective. *Information Systems Journal*, *28*(6), 1129–1157. https://doi.org/10.1111/isj.12153

Majchrzak., *et al*. (2016). Designing for digital transformation: Lessons for information systems research from the study of ICT and societal challenges. *MIS Quarterly:*

Management Information Systems, *40*(2), 267–277.

Mazzarol., *et al*. (2011). Co-operative enterprise: A unique business model? *Future of Work and Organisations, 25th Annual ANZAM Conference, 7-9 December 2011*, *December*, 1–22.

Mettling, B., & Barré, J. (2016). *What role for HR in 2020-2025?.* www.oliverwyman.com

Miah, M., & Omar, A. (2012). Technology Advancement in developing countries during Digital Age. *International Journal of Science and Applied Information Technology*, *1*(1), 30–38.

Mikalef., *et al*. (2017). *Association for Information Systems AIS Electronic Library (AISeL) Big Data Analytics Capability: Antecedents and Business Value Recommended Citation*. 136.

Miles., *et al*. (2019). Qualitative Data Analysis. *Research Methods for Public Administrators*, 162–170. https://doi.org/10.4324/9781315701134-11

Morais, L. P., & Bacic, M. J. (2020). Social and solidarity economy and the need for its entrepreneuring ecosystem: Current challenges in Brazil. *CIRIEC-Espana Revista de Economia Publica, Social y Cooperativa*, *98*, 5–30. https://doi.org/10.7203/CIRIEC-E.98.14138

Moreira., *et al*. (2018). Enterprise 4.0 - The emerging digital transformed enterprise? *Procedia Computer Science*, *138*, 525–532. https://doi.org/10.1016/j.procs.2018.10.072

Okem, A., & Lawrence, R. (2014). Exploring the opportunities and challenges of network formation for cooperatives in South Africa. *KCA Journal of Business* Management, 5(1), 16–33.

Purbasari, R., & Raharja, J, S. (2021). Analisis Koperasri Modern Di Era Digital: *From Values To Greatness. AdBispreneur: Jurnal Pemikiran dan Penelitian Administrasi Bisnis dan Kewirausahaan*, Vol.6, No.3, pp. 295-310 Desember 2021.

Puschmann, T. (2017). Fintech. *Business and Information Systems Engineering*, *59*(1), 69–76. https://doi.org/10.1007/s12599-017-0464-6

Reddy, S. K., & Reinartz, W. (2017). Digital Transformation and Value Creation: Sea Change Ahead. *NIM Marketing Intelligence Review*, *9*(1), 10–17. https://doi.org/10.1515/gfkmir-2017-0002

Schlaepfer., *et al*. (2017). Digital future readiness - How do companies prepare for the opportunities and challenges of digitalisation? *Tech. Rep., Deloitte, Switzerland.*, *8.5.2017*, 2017.

Schumacher., *et al*. (2016). A Maturity Model for Assessing Industry 4.0 Readiness and Maturity of Manufacturing Enterprises. *Procedia CIRP*, *52*, 161–166. https://doi.org/10.1016/j.procir.2016.07.040

Sekaran, Uma & Bougie, Roger. (2016). *Research Methods For Business: A Skill-Building Approach.* Wiley Publisher.

Singh, A., & Hess, T. (2017). How chief digital officers promote the digital transformation of their companies. *MIS Quarterly Executive*, *16*(1), 1–17. https://doi.org/10.4324/9780429286797-9

Tarutė., *et al*. (2018). Identifying Factors Affecting Digital Transformation of SMEs. *ICEB*, 64.

Ulas, D. (2019). Digital Transformation Process and SMEs. *Procedia Computer Science*, *158*, 662–671.

VanBoskirk. (2016). The Digital Maturity Model 4 . 0. *Forrester*, 0–17.

Vial, G. (2019). Understanding digital transformation. *Managing Digital Transformation*, 13–66. https://doi.org/10.4324/9781003008637-4

Wijers, G. (2019). A Comparison of Cooperative Ecosystems. What Institutions can bring transformation? *Review of Applied Socio-Economic Research*, *18*(2), 146–159.

Xu., *et al*. (2018). Industry 4.0: State of the art and future trends. *International Journal of Production Research*, *56*(8), 2941–2962.