



Optimizing Digital Literacy in Increasing Competitive Advantage and Corporate Performance

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Abstract

Business units such as cooperatives are currently experiencing growth along with developments in the era of the industrial revolution 4.0. Today's era also requires business actors, including cooperatives, to continue to be able to transform digitally in various ways. The main problem currently being faced by cooperative actors is the low competence of Human Resources (HR) in mastering digital literacy skills related to effective and efficient management of production operations starting from production, accounting, marketing, management and so on. These problems must be addressed and dealt with appropriately, quickly and sustainably (sustainability). This digital literacy capability makes a major contribution in optimizing the competitive advantage and corporate performance of cooperatives, especially in today's digital era. Based on these problems, the purpose of this research is to study and optimize digital literacy in increasing competitive advantage and sustainable cooperative performance in the Koperasi Produsen Petani Indonesia (KPPI). The urgency of this research is that cooperative actors have literacy skills, business models and sustainable management patterns (sustainability) based on digital technology. The research methodology is a qualitative approach using interviews, observation, documentation, demonstrations and Focus Group Discussion (FGD) techniques. The research stages include introduction, implementation and evaluation.

How to Cite

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INTRODUCTION

The development of information technology in the current era is often referred to as the "era of the industrial revolution 4.0" (Dwipratnyana et al., 2020). This is marked by the transformation of digital technology in various fields of human life starting from the industrial sector, government, education without exception, the business sector including cooperatives. Digitization opportunities can at the same time be a challenge and a threat to the cooperative sector. Therefore, the challenges faced are increasingly complex and complicated. Kusuma (2018) explains that digital technology has become "a part of life that will not be separated" by human life, especially millennials. They are very dependent on their needs by using digital technology such as access to banking, clothing and food, education, telemedicine and so on.

Cooperatives are known as "the pillars of the Indonesian economy" because of their history as business units that were able to survive amid the monetary crisis in 1998 (Sholihah, 2021). Clause 33 of the Undang-Undang Dasar 1945 states that the Indonesian economy is structured as a joint venture based on the principle of kinship. In his explanation, what is meant in this clause is cooperatives. Cooperatives are also an important integral part of the national economy. Cooperatives become a business unit that protects the economic interests of its members and avoids economic tyranny (economic inequality and injustice) between the lower and upper middle class (Hasan & SI, 2022). The number of active cooperatives is 127,846 units spread throughout Indonesia. This number has increased from year to year, where in 2019 the number of cooperatives was 123,048 and grew in 2020 to 127,124 units (BPS, 2022).

The relatively high growth and development of cooperatives should be a challenge as well as an opportunity in itself, especially in the digitalization era (Pereira et al., 2020). Patterns of human behavior have changed to prioritize the principles of effectiveness, ef-

iciency, productivity, fast and precise in the digitalization era (Zakka & Rizaldi, 2022). Facing this, cooperatives must immediately transform and have an understanding of digital literacy in various fields, be able to manage innovation in order to achieve a competitive advantage (Ong & Mahazan, 2020; Nuryanto et al., 2020). Besides that, digitalization efforts are one of the things in strengthening commitments, including cooperatives (Vivi, 2020). Commitment is a pattern of individual behavior that persists in an organization, especially for economic reasons, thus creating the best performance system (Ariyani & Sugiyanto, 2020). The first step that needs to be prepared as early as possible is to build a culture as well as a creative, innovative and prestigious character for cooperative movers.

Therefore, cooperatives must continue to develop, transform so that they are better and have a high level of competitiveness, have a global outlook in the digitalization era (Sriyono, 2018). One strategy that can be applied is to optimize digital literacy in increasing competitive advantage and cooperative performance (Gumelar & Merdiana, 2022; Tan & Syahwildan, 2022; Pratama, 2019). The main problems facing cooperatives in the current era of digitalization are the low level of digital technology literacy and the lack of human resource competency (Setiawati, 2020). The urgency of this research is that cooperative actors must have a digital technology-based business model and management pattern (Annarelli et al., 2021).

Cooperatives are a business unit that is efficient and has its own value to the Indonesian economy (Handajani et al., 2019). However, cooperatives encounter several obstacles in their development, namely the low ability of digital literacy in management, operations to business techniques. One of the efforts that can be made to solve this problem is to optimize digital literacy starting from production, marketing, HR and so on for cooperative actors, especially at the KPPI Dukuhseti. This cooperative was chosen as a pilot and role model for producer cooperatives in Indonesia

in facing digital transformation as it is today. This digital literacy capability also has its own implications for increasing competitive advantage and cooperative performance.

KPPI Dukuhseti is a producer type cooperative which is located in Dukuhseti, Pati Regency, Central Java Province. In the field of business, this cooperative is active in the agricultural, horticulture, kopyor coconut and fisheries sectors. There are various types of products in the agricultural sector such as merah wangi rice, pink rice, japonica rice, mentik mutiara rice and medium rice. The production area owned by KPPI Dukuhseti is also very large, namely $\pm 1,079.429$ hectare. While the average production of the agricultural sector reached $\pm 2,806.154$ tons of rice. Even so, KPPI Dukuhseti still markets its products at the regional scope, not yet national or international. Some of the problems it faces are difficulties related to an all-digital system including integrated financial bookkeeping, marketing, promotions and so on. Besides that, the competency condition of Human Resources (HR) is an obstacle to going digital.

An interesting study related to competitive advantage with a humanist and dynamic approach, because it has not been studied much, especially with research objects in cooperatives, especially the types of producers (Wahyuningtyas et al., 2022; Wang et al., 2020). This study measures the competitive advantage and performance of cooperatives with various things in general, starting from the aspects of finance, production, technology and so on (Chan et al., 2020). Based on these problems, the purpose of this research is to study and optimize digital literacy in increasing competitive advantage and cooperative performance in the Koperasi Produsen Petani Indonesia (KPPI) Dukuhseti.

METHODS

In strengthening research, qualitative researchers set a focus. The focus of research is the main problem in research. Focus is a single domain or several related domains of a

social situation. This research uses a qualitative approach, which produces descriptive data (Sugiyono, 2017). Qualitative methodology is stated as a research procedure that produces descriptive data in the form of written or spoken words from the people observed (Moleong, 2011). Researchers try to express the state of the research or description clearly and freely on data that are considered accurate and factual. This aims to provide a careful description of an individual, condition, symptom or group and to systematically describe the data on the phenomenon studied based on the data obtained.

The type of research used in this study is a case study. A case study is an empirical inquiry that investigates a phenomenon in a real-life context, when the boundary between phenomenon and context is not clearly visible and multiple sources can be utilized (Yin, 2013). Case studies are useful when a researcher wants to understand a particular problem or situation in depth where the researcher can identify more information from a situation through detailed and in-depth data collection including observations, interviews, audiovisual materials, and documents of various reports involving various sources of information to be interpreted in accordance with the theme of the case. The research location was carried out at the Koperasi Produsen Petani Indonesia (KPPI) Dukuhseti, Pati Regency and in 2023.

In qualitative research, researchers must be able to identify potential sources of research data in order to be able to get answers to research questions. Data sources are categorized into several categories, including: people, organizations, texts or articles, settings or environments, objects, and activities or events (Indrawati, 2018). The data sources of this research are primary and also secondary. Primary data is obtained from key informants or key informants, in order to strengthen the information to be obtained. In order to obtain data in a holistic and integrative manner and pay attention to the relevance of the data with the research focus, problem formulation and objectives, the data collection technique

uses: (1) Interview; (2) Observation and field survey; (3) Documentation; equipped with (4) Demonstrations and Focus Group Discussion (FGD). While secondary data comes from literature studies both from journal articles, publications in government agencies and so on.

Based on the approach used in obtaining data, the data collection techniques used in this study are as follows: (1) Interview, this interview was in the form of a collection of questions prepared by the researcher as a reference in conducting interviews with informants to obtain in-depth information. Conducting interviews or interviews, the interviewer brings interview guidelines in a semi-structured form which is an outline of matters relating to the problems in the research. The interview guide is used to facilitate the interview process, while the tape recorder is used as a tool to obtain descriptive data from the results of interviews between researchers and informants; (2) Observation, observation is a data collection technique that is carried out by observing and systematically recording the symptoms investigated. Observations were made to find out the factual conditions that occurred in the field so as to obtain data that could be processed as research material. The researcher immediately went into the field, visited the location, and recorded important things; (3) Documentation, documentation is a data collection technique through objects that are both written and unwritten. Documentation is a complement to the use of interview and observation methods in qualitative research. This documentation technique, the researcher records everything that happens in the field in order to collect the necessary data by collecting all written materials related to the research problem.

In qualitative research, data analysis is inductive in nature and is carried out interactively and continuously until the data produced is completely saturated. Qualitative data analysis is inductive, meaning that data analysis is carried out based on the data obtained and then developed into a hypothesis. In addition, data analysis can also be interpreted as a pro-

cess of arranging data sequences, organizing them into a pattern, category, and basic descriptive unit. This data analysis is in the form of qualitative descriptive, namely an analysis that describes the situation or status of the phenomenon with words/sentences, then separated according to categories to obtain descriptive conclusions, so the analysis must be appropriate and relevant to the problems that occur in the field. Data analysis in this study uses the Miles & Huberman model. In conducting data analysis, several steps were taken, namely: (1) data reduction; (2) Presentation of data; and (3) Drawing Conclusions and Verification.

RESULT AND DISCUSSION

Koperasi Produsen Petani Indonesia (KPPI) Dukuhseti is a producer-based cooperative with abundant resources and raw materials, a sizeable production area of 1,079.429 Ha based on agriculture in the form of agriculture, fisheries, horticulture, kopyor coconuts and so on. Even though it was only established on March 16 2021 with the Deed of Establishment at the Indonesian Ministry of Law and Human Rights Number AHU-0009121.AH.01.26, KPPI Dukuhseti was able to produce 2,806.154 tons of rice in 2022 ago. Apart from that, the collaboration between KPPI Dukuhseti is also quite extensive, including the Environment Service, the Pati Regency Food Security Service, the Central Java Seed Monitoring and Certification Agency and others. However, starting from production activities, HR management and business distribution have not optimized technology due to a lack of understanding of digital literacy among cooperative actors. Even though the digitalization strategy is able to increase the competitive advantage and performance of cooperatives (Nurdany & Prajasari, 2020).

Until 2022, the number of active members at the KPPI Dukuhseti is \pm 154 people. The fields of business involved in this cooperative also vary in agriculture, horticulture, kopyor coconuts and so on.

Table 1. Business Sector of KPPI Dukuhseti

Number	Business Sector	Type
1	Agriculture	Merah Wangi Rice Pink Rice Japonica Rice Mentik Mutiara Rice Medium Rice
2	Horticulture	Corn Other Vegetables
3	Kopyor Coconut	Kopyor Coconut
4	Fishery	Parrot Fish Vaname Shrimp Crab and Mangrove Crab

Source: Processed data (2023)

Digital Literacy

In general, the role of information systems and technology is very influential in human life in various fields. This opportunity is considered to be an organizational strategy in winning business competition, if it is properly implemented as well (Payong, 2021; Suparno et al., 2023). Not a few organizations and companies have experienced failure in the implementation of information and technology systems because they were not comprehensive in compiling from the beginning to the final stage of business continuity (Ghobakhloo & Iranmanesh, 2021). Identification that can be done in the management of information technology systems can be in the form of design, strategic planning, evaluation, maintenance and so on (Hikmawati & Abduh, 2004). An investment in the field of information systems and technology is neither easy nor cheap. The manager or management of an organization must think about how to make the large investment that has been made continue and have a wider impact on benefits (Selva, 2020).

The government through the Ministry of Cooperatives and SMEs of the Republic of Indonesia continues to encourage MSME actors to always adapt to keep up with the times. The government also encourages the modernization of cooperatives through digital-based acceleration programs starting from institutions, marketing, production, finance, innovation and technology (Chiarini, 2021; Rosita & Fauzi, 2023). Mapping the existing conditions of cooperatives is also one of the efforts in dealing with the digital transformation era as it is today, because with this it will be easier for managers to develop the potential of cooperatives, minimize errors that will occur until they know the business strategy steps for the existing cooperative conditions (Susanto et al., 2015). The use of digital-based financial applications is a form of transformation of the cooperative in increasing its institutional capacity and performance. Besides that, management support at the low level to the top level in the implementation of cooperative digitization is also very much needed and has become an absolute requirement for the successful application of information technology (Djohan et al., 2018).

Acceleration of digital literacy programs is very important for actors or managers of cooperatives in the era of globalization and industrial revolution 4.0 as it is today (Razzaque et al., 2023). Digital literacy in question is the same as the previous discussion, namely the implementation of information systems and technology bases in various stages ranging from production, marketing, promotion, finance and so on (Bai et al., 2020). The competence of cooperative managers in this digital transformation era provides several distinct advantages and benefits in supporting business productivity. Cooperative managers can access various information needs starting from consumer profiles, tastes and responses to a product and/or service. Benefits like this can be a promising business strategy because cooperative products and/or services can be right on target to their consumers.

In addition to being more adaptive, this effort also increases the productivity of cooperative actors. For example, during manual bookkeeping, human errors will often be encountered due to calculation errors, recording transactions that are still empty and so on (Ciruela-Lorenzo et al., 2020). Switching conventional bookkeeping to a digital basis will certainly be more effective and efficient for cooperatives because everything is recorded by the system so that the impact of the risk of human error is minimal. Windah et al. (2022) also added that in facing this digitalization era, cooperatives must fulfill and continue to develop several things. Starting from social media strategies for sales, promotion or other aspects. Then there are also digital literacy skills and information literacy carried out by cooperative managers. These three elements are very crucial and interrelated with one another.

Based on findings in the field at the Koperasi Produsen Petani Indonesia (KPPI) Dukuhseti, there are several things that concern researchers, namely: (1) Bookkeeping is still done conventionally. Several times have also tried to integrate bookkeeping using the Micro Business Accounting Report (Lamikro) application from the Ministry of Cooperatives and SMEs of the Republic of Indonesia, but still encounter several obstacles such as ignorance of cooperative managers/admins in the features of the application, managers do not yet understand the division of bookkeeping classifications, for example fixed assets, current assets, assets or others. Lamikro is a simple accounting application for micro businesses that can be used via a smartphone with the Android operating system (Kominfo, 2019; Jabbar, 2018); (2) The administration carried out has not been integrated and optimized for information technology systems. The administration applied is still dominant at the conventional stage using books or paper, not yet integrated with technology. Often managers have difficulty finding information or administration that is immediately needed because of this; (3) Promotion, sales to marketing still

rely on a few social media such as Facebook and WhatsApp. Managers have not integrated it with several social media that are trending, for example TikTok, Instagram, Twitter and so on. For this reason, KPPI Dukuhseti's market reach is only regional and some national.

Competitive Advantage

Cooperatives can be interpreted as an association of individuals with the same vision, mission and based on a family spirit that upholds the value of mutual cooperation (Dewi & Yaspita, 2020). In its operations, these individuals work together for a common goal and interest, consisting of elements of meeting of members, management, members and supervisory bodies (Aghazadeh et al., 2022). Some people still think that cooperatives can exist only with assistance from the government. More than that, cooperatives have great potential in boosting the national economy like the events of 1998. At that time, cooperatives could still perch proudly in driving the national economy. Right now, the task and the big challenge is how a cooperative which there are so many in Indonesia can run, compete and compete healthily according to business norms.

This era of digitalization has become a change of era that can be said to be quite sharp. An era in which all business people including the cooperative sector are required to be more adaptive, cooperative, innovative and productive by mobilizing all their resources. Cooperatives must be alert, agile and fast in responding to digital transformation as it is today by carrying out various integrated actions and efforts. Some of them are efforts to increase Human Resources, implementation of information technology systems, expansion of access to capital, finance and market information and management of cooperatives. Cooperatives must also be capable and have their own target, namely having a competitive advantage in order to compete with existing competitors. Competitive advantage can also be viewed from the aspect of products, services or others.



Figure 1. Agricultural Products of KPPI Dukuhseti

Digital transformation as it is today is very touching and has a major influence on the sustainability of a business. Competition is getting tougher and competitors are superior, making business actors have to be sensitive to the situation. This sensitivity can be interpreted as an effort to capture opportunities, challenges and surprises around one of them by continuing to innovate. To be able to win the business competition, satisfy consumers and get high profitability, a competitive advantage is needed. Competitive advantage can be assessed from product quality, services provided, price differentiation and other reasons for consumers to remain loyal in choosing and consuming these products and/or services. Innovation is an important force in achieving competitive advantage and increasing competitiveness for every business.

KPPI Dukuhseti is a producer cooperative engaged in agriculture, horticulture, kopyor coconut and fisheries. The production area of 1,079.429 hectares is capable of producing various types of products in the agricultural sector such as merah wangi rice, pink rice, japonica rice, mentik mutiara rice and medium rice as shown in picture 1 above. Over time, managers will also continue to strive and innovate so that their business, including in terms of products, can be successful and penetrate the global market. Efforts to expand the business to achieve competitive advantage continue to be made but also face several obstacles. One of the obstacles is related to digital marketing.

Until now, the marketing that has been carried out is still at the stage of social media such as WhatsApp and Facebook. Lack of competence and ability of Human Resources of cooperative managers is the dominant obstacle in achieving an existing competitive advantage. Moreover, digital literacy which is still minimal is very important to continue to improve. Besides that, from the administrative side it is also still being carried out at a simple or manual stage. The absence of technology optimization is one of the factors behind other similar producer cooperatives. The managers and main management of cooperatives are currently in the age range of 40-50 years and over. This is what makes the ability to knowledge, technology and global competitiveness not optimal. Therefore, collaboration and synergy with the millennial generation is very important to achieve competitive advantage.

Corporate Performance

The definition of performance (work achievement) is the result of work in quality and quantity achieved by an employee in carrying out his functions in accordance with the responsibilities given to him. Performance or performance is the result or output of a process (Nurlaila, 2010). Sedarmayanti (2011) reveals that performance is a translation of performance which means the work of a worker, a management process or an organization as a whole, where the work results must be shown concretely and can be measured (compared to predetermined standards). Hasibuan (2017)

explains that there are several aspects of performance appraisal, namely: (1) Loyalty, employee loyalty to work, position and organization is one of the indicators of company performance achievements. Employee loyalty can be interpreted as an effort to maintain, defend and defend an organization that it shelters from various forms of disturbance that exist. The more loyal an employee is, the more guaranteed the company's performance will be; (2) Work performance, the development and improvement of the performance of an employee is very influential on the performance of a company. This can be known from the quality and quantity produced by these employees. The more accomplished an employee will also improve the reputation and impact on the company's performance.

(3) Honesty, employees who are honest in all their actions will reflect a company. If there are employees who are dishonest, indirectly they are also dishonest to the company; (4) Discipline, discipline affects a company's performance. Disciplined employees who are able to set priorities and good time management will also increase the company's productivity; (5) Creativity, the ability of employees to develop their potential, talents and interests to complete work so that they can work more efficiently and effectively; (6) Cooperation, the willingness of employees to participate and cooperate with other employees vertically and horizontally inside and outside of work so that work results will be even better; (7) Leadership, employees, especially company leaders, can lead, influence, have a strong personality, be respected, have authority and can motivate other people or their subordinates to work effectively; (8) Personality, employees have character, attitude, politeness, cheerfulness, well-liked, give a pleasant impression, show a good attitude, and look sympathetic; (9) Initiative, the ability to think original and based on one's own initiative to analyze, assess, create, give reasons, draw conclusions, and make decisions to solve the problems it faces; (10) Proficiency, the ability of employees to unite and harmonize the various ele-

ments involved in formulating policies and in management situations; (11) Responsibility, willingness of employees to be responsible for their willingness, work, and work results, the facilities and infrastructure they use, and their work behavior.

Cooperative performance can be measured using various outputs. Besides that, the factors that influence the performance of a company including cooperatives also vary, for example leadership. Leadership is a function of company management which is important in achieving a predetermined goal. Proper leadership will direct the company in the target and maximum profit and vice versa. The existence of several obstacles such as order, coalition, power and even the surrounding environmental conditions can also make leadership factors not as expected (Sapitri, 2019). A leader has a big contribution and influence in the achievement of company performance including cooperatives depending on the model, concept and style of leadership he carries.

In addition to leadership, cooperative performance can also be measured using financial aspects. How the financial system that is run is integrated, effective, efficient, transparent and accountable and supports the smooth operation of an organization including cooperatives. Wahyudi & Aini (2020) said that measuring cooperative performance which only focuses on financial aspects is considered unable to describe the condition of cooperatives in a comprehensive manner. This is based on the function of the cooperative itself. Apart from being an institution that economically aims to gain profits, cooperatives are also inseparable from their basic social institutions. This is reflected in the cooperative principles and also the existing kinship principle.

Performance measurement, including in cooperatives, is indeed very diverse. Some are related or related to financial, management, operational, bookkeeping, marketing or other aspects. Regulation of the Minister of Cooperatives and Small and Medium Enterprises Number 21 of 2015 concerning the ranking of cooperatives broadens the scope of evaluating

the performance of cooperatives to five, namely: (1) institutional aspects of cooperatives; (2) cooperative business aspects; (3) the financial aspects of cooperatives; (4) aspects of cooperative benefits to members; and (5) aspects of the benefits of cooperatives to society.

Based on the findings at the KPPI Dukuhseti, there are several things that can be found to measure the performance of the cooperative. The principal deposit at KPPI Dukuhseti is Rp. 200,000 while the mandatory savings are Rp. 20,000/month with a total of 154 active members per year 2022. In supporting the operational sector, KPPI Dukuhseti also has several assets such as cars, motorbikes, machines and so on. Even though it was only founded in 2021, this cooperative has received a Remaining Profit (SHU) for closing the 2021 books of Rp. 102,633. In the financial sector, the statement of financial position, especially the total assets, incised a nominal value of Rp. 138,485,133 per year in 2021. Meanwhile, as of March 2022, the total assets are quite large, reaching Rp. 98,583,000.

Measuring the performance of cooperatives is very diverse. All cooperatives, including KPPI Dukuhseti, also continue to strive to accelerate performance but encounter several obstacles. Common problems that often occur are the difficulty of coordination and lack of integration of services between government agencies. The production sector, especially the KPPI Dukuhseti for example in the fields of agriculture, horticulture, fisheries or others, will certainly be sheltered by various government agencies including the Cooperative and UKM Service, the Food Security Service, the Environment Service, the Health Service, the Fisheries and Maritime Service, the Seed Monitoring and Certification Agency and many more. Cooperative managers often still take care of various administrations from one agency to another, thus requiring considerable sacrifice of time and material. Conditions like this are felt by KPPI Dukuhseti and other cooperatives related to performance achievements as they wish to achieve.

CONCLUSION

Digital transformation in the era of the industrial revolution 4.0 as it is currently happening must be handled quickly, precisely, integratedly, integrated and right on target. Starting from the education sector, finance, banking to the business economy, it has massively utilized digital technology. Digital transformation has become a challenge, an opportunity and can even be a threat for business actors if they cannot manage it properly. Including in the cooperative sector, this digital transformation must be adapted immediately. The capabilities and digital literacy skills of cooperative managers must be optimized and developed in order to achieve a business advantage which is often referred to as competitive advantage.

Competitive advantage will be created through various processes carried out starting from the stretching of innovation, creation and others that create a distinct advantage over products and/or services produced with those of other competitors. Competitive advantage can be created through quality, product quality, services provided or other aspects so that consumers feel loyal. Optimum competitive advantage will also encourage high company performance as well. The company's performance can be viewed in terms of operational management, financial aspects, human resource competencies and so on. Elements of competitive advantage and company performance are interrelated in business continuity, including the cooperative sector. Therefore, these two things really need to be optimized in line with digital literacy transformation.

In line with this, the Koperasi Produsen Petani Indonesia (KPPI) Dukuhseti continues to strive to transform its business. Integrating digital technology in all aspects ranging from bookkeeping, marketing, production, increasing employee competency and so on. It is indeed not easy to optimize digital literacy in production and business operations, especially in cooperatives. However, considering that

KPPI Dukuhseti is a producer cooperative with resources (such as nature and production) engaged in agriculture, horticulture, coconut kopyor and fisheries which have great potential and abundance, it is very important to integrate digital literacy to increase competitive advantage and company performance.

This research is still limited to studies discussing increasing competitive advantage and corporate performance in cooperative businesses. Furthermore, future research can expand the concept of knowledge, not only in cooperatives but in other crucial business fields that are more comprehensive and sustainable, for example culinary, banking or others that have a big impact on the national economy.

REFERENCES

- Aghazadeh, H., Beheshti Jazan Abadi, E. & Zandi, F. (2022). Branding advantage of agri-food companies in competitive export markets: a resource-based theory. *British Food Journal*, 124 (7), 2039-2060.
- Annarelli, A., Battistella, C., Nonino, F., Parida, V., & Pessot, E. (2021). Literature review on digitalization capabilities: Co-citation analysis of antecedents, conceptualization and consequences. *Technological Forecasting and Social Change*, 166, 120635.
- Ariyani, R. P. N., & Sugiyanto, E. K. (2020). Pengaruh Komitmen Afektif, Komitmen Berkelanjutan Dan Komitmen Normatif Terhadap Kinerja Karyawan (Studi Perusahaan Bumn X Di Semarang). *Jurnal Ilmiah Manajemen Ubhara*, 2(2), 113-122
- Asida, E., & Vinuzia, M. (2021). Analisis Model Manajemen Koperasi Dalam Meningkatkan Kinerja Koperasi. *Journal of applied business and banking (JABB)*, 2(2).
- Astawa, I. G. P. B., Julianto, I. P., & Dewi, L. G. K. (2020). Penilaian Kinerja Koperasi Unit Desa (KUD) Penebel Tabanan Dengan Pendekatan Balanced Scorecard. *Monex: Journal of Accounting Research*, 9(1), 18-29.
- Badan Pusat Statistik (BPS). (2022). Jumlah Koperasi Aktif Menurut Provinsi (Unit), 2019-2021. <https://www.bps.go.id/indicator/13/760/1/jumlah-koperasi-aktif-menurut-provinsi.html>. Diakses pada 27 Februari 2023 pukul 09.00 WIB
- Bai, C., Dallasega, P., Orzes, G., & Sarkis, J. (2020). Industry 4.0 technologies assessment: A sustainability perspective. *International journal of production economics*, 229, 107776.
- Chan, E.S.W., Okumus, F. & Chan, W. (2020). What hinders hotels' adoption of environmental technologies: a quantitative study. *International Journal of Hospitality Management*, 84, 102324.
- Chiarini, A. (2021). Industry 4.0 technologies in the manufacturing sector: Are we sure they are all relevant for environmental performance?. *Business Strategy and the Environment*, 30(7), 3194-3207.
- Ciruela-Lorenzo, A. M., Del-Aguila-Obra, A. R., Padilla-Meléndez, A., & Plaza-Angulo, J. J. (2020). Digitalization of agri-cooperatives in the smart agriculture context. proposal of a digital diagnosis tool. *Sustainability*, 12(4), 1325.
- Dewi, P., & Yaspita, H. (2020). Pelatihan Manajemen Pengelolaan Koperasi/KUD Angkatan I, II, Dan III Kegiatan Program Pengembangan Kewirausahaan Dan Keunggulan Kompetitif UKM Pada Dinas Koperasi Usaha Kecil Dan Menengah. *Diklat Review: Jurnal manajemen pendidikan dan pelatihan*, 4(3), 254-256.
- Djohan, W., Winata, S., & Kusnawan, A. (2018). Peningkatan Faktor-Faktor Keberhasilan Penerapan Teknologi Informasi Pada Tahap Operasional Dengan Analytical Hierarchy Process. *eCo-Buss*, 1(1), 6-16.
- Dwipradnyana, I. M. M., Mas, I. G. A. M. A., Pratiwi, A., & Diatmika, I. G. N. D. (2020). Strategi Pengembangan Koperasi Di Era Digital Pada Koperasi Yang Ada Di Provinsi Bali. *Majalah Ilmiah Universitas Tabanan*, 17(2), 112-116.
- Ghobakhloo, M., & Iranmanesh, M. (2021). Digital transformation success under Industry

- 4.0: A strategic guideline for manufacturing SMEs. *Journal of Manufacturing Technology Management*, 32(8), 1533-1556.
- Gumelar, B., & Merdiana, C. V. (2022). Manajemen Perubahan Dalam Meningkatkan Kinerja Koperasi Di Kabupaten Purbalingga. *Jurnal Fokus Manajemen Bisnis*, 12(1), 66-78.
- Handajani, L., Santoso, B., & Rifa'i, A. (2019). Permasalahan Manajerial dan Keuangan pada Koperasi yang Mengalami Kendala dalam Penyelenggaraan Rapat Anggota Tahunan. *Jurnal Abdi Insani*, 6(1), 50-63.
- Hasan, I., & SI, M. F. (2022). Peluang, Tantangan dan Revitalisasi Peran Koperasi Di Era Revolusi Industri 4.0. *Jurnal Bisnis Dan Kajian Strategi Manajemen*, 6(1).
- Hikmawati, H., & Abduh, M. (2004). Faktor-faktor Keberhasilan Kritis Pengelolaan Teknologi Informasi pada Kontraktor di Indonesia. *Jurnal Teknik Sipil ITB*, 11(4), 157-170.
- Indrawati. (2018). Metode Penelitian Kualitatif Manajemen dan Bisnis Konvergensi Teknologi Komunikasi dan Informasi. Bandung: Refika Aditama.
- Kementerian Komunikasi dan Informatika (Kominfo) Republik Indonesia. (2018). Lamikro, Aplikasi Laporan Keuangan Sederhana Untuk Usaha Mikro. https://www.kominfo.go.id/content/detail/13065/lamikro-aplikasi-laporan-keuangan-sederhana-untuk-usaha-mikro/0/artikel_gpr. Diakses pada 20 Juli 2023.
- Moleong, Lexy. (2011). Metodologi Penelitian Kualitatif. Bandung: PT Remaja Rosdakarya.
- Nurdany, A., & Prajasari, A. C. (2020). Digitalization In Indonesian Cooperatives: Is It Necessary?. *Journal of Developing Economies*, 5(2), 120-131.
- Nuryanto, U. W., Djamil, M., Sutawidjaya, A. H., Saluy, A. B., No, J. M. S., & Kembangan, J. B. (2020). Keunggulan Bersaing dalam Meningkatkan Kinerja Organisasi Berkelanjutan. *Jurnal Ilmu Manajemen Dan Bisnis Islam*, 6(1), 1-22.
- Ong, J. O., & Mahazan, M. (2020). Strategi Pengelolaan SDM dalam Peningkatan Kinerja Perusahaan Berkelanjutan di Era Industri 4.0. *Business Economic, Communication, and Social Sciences (BECOSS) Journal*, 2(1), 159-168.
- Payong, Y. (2021). Analisis Perencanaan Strategis Teknologi Informasi Dengan Pendekatan Swot Pada Koperasi Projakop. *HOAQ (High Education of Organization Archive Quality): Jurnal Teknologi Informasi*, 12(1), 45-51.
- Pereira, A. G., Lima, T. M., & Charrua-Santos, F. (2020). Industry 4.0 and Society 5.0: Opportunities and Threats. *International Journal of Recent Technology and Engineering*, 8(5), 3305-3308
- Portal Informasi Indonesia. (2019). La Mikro: Aplikasi Keuangan a la KemenkopUKM. <https://indonesia.go.id/layanan/kependudukan/ekonomi/lamikro-aplikasi-keuangan-a-la-kemenkopukm>. Diakses pada 29 Juli 2023.
- Pratama, F. C. (2019). Customer Relationship Management Sebagai Strategi Mencapai Keunggulan Bersaing Berkelanjutan Penggilingan Padi. *Ekonomi Bisnis*, 24(2), 80-87.
- Razzaque, A., Lee, I., & Mangalaraj, G. (2023). The effect of entrepreneurial leadership traits on corporate sustainable development and firm performance: a resource-based view. *European Business Review*.
- Rosita, I., & Fauzi, N. (2023). Pemanfaatan Aplikasi Digital sebagai Media Penyusunan Laporan Keuangan pada Koperasi Amanah di Nagari Taram. *ABEC Indonesia*, 96-100.
- Sapitri, J. E. (2019). Pengaruh Kepemimpinan Dan Motivasi Terhadap Kinerja Karyawan: Koperasi STMT PT. Patra Niaga Plumpang Jakarta Utara. *Jurnal Mitra Manajemen*, 3(9), 886-902.
- Selva, M. (2020). Nanotechnologies for the sustainable valorization of biowastes. *Current Opinion in Green and Sustainable Chemistry*, 24, 38-41.
- Setiawati, Rosti. (2020). Strategi bisnis Koperasi & Usaha Mikro, dan Menengah (UMKM) Pasca Covid-19. Sumedang: Ikopin.
- Sholihah, D. (2021). Persepsi Dan Minat Generasi Milenial Untuk Menjadi Anggota Koperasi. *Upajiwa Dewantara: Jurnal Ekonomi, Bisnis dan Manajemen Daulat Rakyat*, 5(2).

- Sriyono, S. (2018). Kemampuan Kinerja Keuangan Untuk Meningkatkan Daya Saing UKM Yang Berbasis Green Economy. *Journal Competency of Business*, 2(2), 84-105.
- Sugiyono. (2017). Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif, dan R & D. Bandung: Alfabeta.
- Suparno, S., Purwana, D., Wibowo, A., & Syafa, A. (2023). Validating a model of industrial literacy 4.0 in higher education among post-graduate students: A structural equation modeling approach. *International Journal of Education and Practice*, 11(4), 820-836.
- Susanto, C. O. N., Wuriyanto, T., & Soebijono, T. (2015). Perencanaan Strategis Sistem Informasi/Teknologi Informasi pada Pusat Koperasi Industri Susu (PKIS) XYZ. *Semesta Teknika*, 18(2), 176-181.
- Tan, E., & Syahwildan, M. (2022). Financial Technology dan Kinerja Berkelanjutan Usaha Mikro Kecil: Mediasi Literasi Keuangan dan Inklusi Keuangan. *Jurnal Ilmiah Manajemen dan Bisnis*, 23(1), 1-22.
- Vivi, I. H. (2020). Pengaruh Inovasi Lingkungan Dan Inovasi Layanan Pada Kinerja Bisnis Yang Berkelanjutan (Studi Pada Perusahaan Teknologi di Batam). *Development of Research Management: Jurnal Manajemen*, 15(1), 82-103
- Wahyudi, J., & Aini, S. Q. (2020). Analisis Kinerja Koperasi Unit Desa Menggunakan Balanced Scorecard. *Jurnal Litbang: Media Informasi Penelitian, Pengembangan dan IPTEK*, 16(2), 113-128.
- Wahyuningtyas, R., Disastra, G., & Rismayani, R. (2022). Toward Cooperative Competitiveness for Community Development in Economic Society 5.0. *Journal of Enterprising Communities: People and Places in the Global Economy*.
- Wang, H., Feng, J., Zhang, H., & Li, X. (2020). The Effect of Digital Transformation Strategy on Performance: The Moderating Role of Cognitive Conflict. *International Journal of Conflict Management*.
- Windah, A., Maryani, E., & Putra, P. (2022). Strategi Sosial Media, Kecakapan Literasi Informasi dan Literasi Digital Start-Up Siger Innovation Hub (@Sigerhub) sebagai Inkubator Bisnis UMKM di Provinsi Lampung. *Info Bibliotheca: Jurnal Perpustakaan dan Ilmu Informasi*, 3(2), 104-122.
- Yin, Robert K. (2013). Studi Kasus: Desain & Metode. Jakarta: Raja Grafindo Persada.
- Zakka, M. F. A., & Rizaldi, A. (2022). Eksistensi Koperasi yang Menjadi Tantangan di Era Revolusi Industri 4.0. *JPSDa: Jurnal Perbankan Syariah Darussalam*, 2(2), 138-148.