

Implementation of Web-Based SECI Knowledge Management Model For Coastal Communities

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Abstract. The marine industry is an important resource in human life. The demand for seafood continues to increase almost all over the world, but catches continue to decline. Therefore, there is a need for a fisherman knowledge management system. The system becomes a collection of processes that coordinate information, knowledge, and experience that run and work together, so that the fishing community has an integrated system in catch management. This study aims to model knowledge management about the sustainability of capture fisheries and document the knowledge of fishermen. This study uses a qualitative approach with the Achieve method which seeks to describe the following objects or subjects as they are to convey facts and information systematically. The survey locations were carried out in several areas in 6 coastal locations in East Nusa Tenggara Province. The results of the practice in the fishing community become the basis for content in media creation. With the program, it can be seen from the activeness of coastal communities in conveying information. The same understanding of the benefits of information systems in web-based programs follows the existing concepts, such as togetherness, participation grows through consensus and shared vision, ideals, hopes, goals, and needs. Second, extending from the bottom, participation is not forced from top to bottom or controlled by individuals or groups through power mechanisms. Participation grows based on the awareness and needs felt by the community.

Key words: knowledge management; knowledge sharing; catch fisher; SECI; web

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INTRODUCTION

Collaboration is the keyword for fishers who want to survive in a competitive environment and guarantee sustainable capture fisheries to take place (Garcia & Rosenberg, 2010). Anglers who want to win in the competition are no longer allowed to rely solely on specific individual abilities or rely on the knowledge possessed by their group (Phelps et al., 2012). The best results can only be obtained through collaboration between individuals and more creative collaboration between different perspectives and skills (Urbancova, 2013).

As the best example, many fishermen in Japan are ultimately successful thanks to their ability and expertise in managing "organizational knowledge creation," where they create new knowledge and apply it to their groups, visible from products, services, and systems (Ceballos et al., 2017). Ahern et al., (2014) said these continuous innovations have become a characteristic of fishermen's success in Japan, which has changed from traditional to modern.

As the largest archipelagic country globally with a manageable sea area of 5.8 million km² and has a vast diversity of marine and fishery resources, Indonesia should improve fishermen's ability professionally. (Menteri Kelautan dan Perikanan, 2016). In conditions of considerable maritime potential, while the

domestic resource utilization system is not yet right, naval utilization requirements are not optimal (Cao et al., 2017). The shape of the fleet that is still dominated by small vessels, fish trade that is not profitable for anglers, and law enforcement is not right, resulting in SDI utilization that has not improved local fishers' welfare. (Kusumastanto & Wahyudin, 2012). Small-scale capture fisheries undertaken by fishermen have an essential role in food security and overcoming poverty for fishing communities (FAO, 2019).

Octoriani et al. (2016) state that many Fish Resources worldwide are close to overexploitation. Unreported catch from small-scale fisheries can lead to unrecognized conditions of over-exploitation (Olopade et al., 2017). Therefore, this capture fishery needs to be guaranteed its sustainability (DLPF - The David and Lucile Packard Foundation., 2015). An appropriate assessment of the level of sustainability of capture fisheries is necessary for management purposes to ensure the sustainability of capture fisheries is sustainable.

The demand for seafood continues to increase due to global human population growth, affluence, and per capita consumption (Fallis, 2013). The supply of seafood is also growing, although wild fish stocks are declining, with phenomenal advances in aquaculture, namely the cultivation of aquatic organisms. Aqua-

culture supplied 42% of the world's fish in 2012 and is expected to exceed capture fisheries production by 2030 (Cao et al., 2017).

The balance between these two seafood production systems has profound implications for global food security, income distribution and ecological sustainability (van den Burg et al., 2021). Among them: collaboration, innovation, adaptation, mastery of technology and markets, and management of the intellectual assets of the group (OECD, 2016). These challenges encourage the emergence of the need for the application of knowledge management (Li et al., 2019).

A knowledge management system can define as a collection of processes that coordinate information, knowledge, and experiences that run and work together (Koenig, 2011). A knowledge management system is an integration of technology and mechanisms built to support knowledge management processes (Yee et al., 2019). The process that occurs is based on the knowledge management system concept of discovering, capturing, sharing, and applying knowledge (Dalkir, 2011). So that by using the Knowledge management system, anglers expect to coordinate and facilitate work in increasing the productivity of the catch.

Nonaka & Takeuchi (1996) argued that an explicit codified knowledge management program's success in individuals and groups to internalize and personally interpret the codified knowledge they have acquired and knowledge management systems. This knowledge will be in four ways, which is called the SECI model, namely Socialization (S), Externalization (E), Combination (C), and Internalization. The implementation of SECI's web-based knowledge management model to develop fishermen's capacity is indeed a breakthrough that will make fishers more independent and empower themselves better.

The knowledge of the fishing community is an important one to develop (Chen et al., 2020). Implementing the knowledge base of many coastal communities supports them where they have institutionalized local wisdom based on experience (Berkström et al., 2019). Based on this evidence, fisherman-based knowledge management should be more comfortable in convincing local governments to implement sustainable improvements (Farr et al., 2018).

Acceleration of sharing knowledge about the power and utilization of fisheries and marine resources in the area is the study's aim. Besides, this research is to identify and analyze the empirical conditions of resource-based capabilities and their impact on knowledge capability management. Aims for input for the development of further knowledge web models.

METHODS

This research is a qualitative descriptive study using achieve research that seeks to describe the following objects or subjects as they are to convey facts and information systematically (Saunders et al., 2008). The application of knowledge management based on the SECI model for anglers is the focus of this research (Berkström et al., 2019). A written understanding guide for anglers to obtain more in-depth information to get an overview of fishermen management performance in East Nusa Tenggara's six coastal provinces. This research shows knowledge management based on the SECI model in East Nusa Tenggara Province's coastal area.

Fishers' identification of media needs is carried out through FGD and Documentation Studies by involving experts to develop the SECI model. Design is designing media content using the SECI method; At this stage, it generates best practices on which to base content creation. Development, namely the creation of media using planning from the previous location.

Implementation of media trials carried out on users. Evaluation is the last stage in the form of improvement feedback for the media (Berkström et al., 2019). The indicator of success is the production of web-based knowledge sharing media so that the knowledge assets of fishers and their communities are maintained based on best practice.

RESULTS AND DISCUSSION

This analysis looks at the size of the organization, business strategy, and environmental uncertainty. The method in this analysis is to conduct FGD. The determining factors in the successful development of the Design and Implementation of Knowledge Management Systems Using the SECI Model, namely Human Resources (HR), Facilities and Infrastructure; Institutional; Budget; Technology services. The Government of West Manggarai, East Nusa Tenggara, Indonesia, encourages every coastal village to use a web-based information system to facilitate the fishing community in a broad sense of implementation programs and activities realization of implementation activities out in coastal towns.

Also, a web-based information system can be used to promote the potential and advantages of coastal villages through training. The use of integrated websites is significant to be developed in the government. It has an impact on presenting data, information quickly and accurately. The emergence of the program originated from the Komodo village community's desire to be led by the Lurah or village head of Komodo. The role of assistant staff in the village is as a facilitator to help realize the program.

Especially in the third concept, participation is an active process, meaning that the person or group involved takes the initiative and uses their freedom. The initial process of forming the Design and Implementation of a Knowledge Management System Using the SECI Model carried out cooperatively between residents of coastal communities and village government officials.

At the stage of identifying knowledge goals, what is to be achieved with knowledge management will be mapping normative, strategic, and operational knowledge related to the coastal fishing community—the achievement of normative knowledge of coastal fishing communities based on norm values. The strategic understanding that is wanted to be achieved is an increase in performance through the target community as the next generation. Meanwhile, operational knowledge can be expected to carry out processes or business activities used to manage fishermen's business processes.

Identifying the knowledge in coastal fishing communities in NTT with a focus group discussion (FGD) involves community leaders as the primary source of seeking development needs. According to Berkström et al., (2019) Resource persons provide a variety of information that can help develop knowledge management designed according to community needs. This is also supported by the existence of several supporting documents from information from community sources that have been documented in paper form.

The next process is carried out in four stages of knowledge development based on the SECI model, including; 1) Socialization, as a process transfer between people through conversation (tacit knowledge to tacit knowledge). The stage is socialization carried out using direct interviews and FGDs between the coastal fishing community; 2) Externalization, a process where the articulation of tacit knowledge becomes a concept that can be clarified. The results of interviews and discussions were converted into written form. 3) Combination, where this process combines the explicit ones that become a system knowledge management. There is a process transfer from detailed knowledge to direct knowledge. The process is the schedule of regular events warmed into a calendar event; 4) Internalization, a process where all document data, information, and knowledge can be read and studied by others or explicit in tacit knowledge.

This stage is a building system that can manage all information and data obtained. Identification of coastal fishing communities is mapped, extracted from the tacit experience and existing explicit knowledge. The identification illustrated is through the following. 1) Profile of the coastal fishing com-

munity, where this profile contains the condition of the fishing community regarding history, knowledge, local wisdom, customary law, and community life with applicable norms; 2) Activities and performance of coastal fishing communities, where this knowledge becomes the basis for obtaining information related to community activities of coastal fishing communities; 3) Philosophy of the coastal fishing community, which contains various information about the philosophy community life which becomes the order of life; 4) Forum is a forum for interaction in the context of knowledge sharing which focuses more on distribution and sharing of information related to coastal fishing communities; 5) Rituals and arts, which describe knowledge pertaining to rituals and skill in the form of dance, music, and sacred ceremonies; 6) The organization contains various information about organizations in the coastal fishing community; 7) The download feature is a page that functions to download the available documents; 8) Museum, where this describes knowledge related to historical records, community activities, historical travel, agriculture, and transportation.

This section will show the knowledge management based on the analysis of the coastal fishing community's profile and condition. Knowledge Management includes 1) a database that accommodates people's needs in knowing knowledge consisting of history and philosophy, culture, ethics and norms, and sharing of knowledge and culture; 2) Media which may include the content picture, text, video, and audio; 3) Knowledge which is the space for processes implicit, explicit, tangible, and intangible; 4) Document includes program, rules, organization, and legality; 5) a database is a unit of all information which provides for knowledge. The following picture shows the model knowledge management.

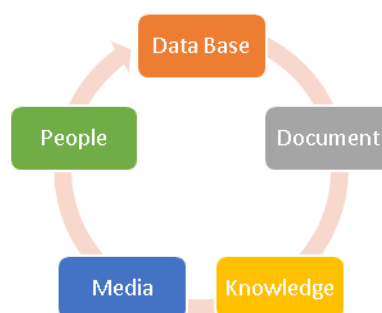


Figure 1. Rule web Based Knowledge Management system

The model knowledge management fishermen's in Figure 1 is a model that shows the cycle of the fishermen's knowledge management process. The cycle starts from the following. 1) There is a group of people, in which the community is a collection of fisher-

men who have culture, history and philosophy, ethics and norms, and have a knowledge sharing culture, namely the culture to share knowledge with others, the ability to utilize technology, experience, history and learning about the cultural wealth of fishermen; 2) From the people, the next flow is the media as a means of delivering information so that later can be carried out sharing which includes media in the form of images, text, video and audio; 3) The media will enter into the process knowledge which provides for tacit knowledge, explicit knowledge, tangible and intangible; 4) After this has been processed into the experience that is already owned, then the documentation process is in the organization which is an institution that has legality, rules and programs that can be run by the community; 5) The entire process that has been passed will be stored in a database which will later be used in development by going through the same process knowledge management system on an ongoing basis.

Socialization was also carried out several times by incorporating professional fishermen such as fishermen in Japan or abroad. It must be following the concept of participation of the fishing system, the fifth and sixth phases. The community's voluntary participation in the change is determined by themselves and community involvement in self-development, life, and the environment (Retnowati et al., 2020). Furthermore, the community's involvement can be seen in filling in the Web-based information system training data. Youth groups and various elements of the village community help collect population data by visiting house to house. The data collection is carried out from place to house to get valid data, and filling out a questionnaire is being accompanied by youth groups.

After that, the village government staff collaborated with Karang Taruna and carried out data entry into computer files. The data collection process is three months. The public's enthusiasm for this program is also evident from their openness to fill in data so that the data collection process becomes valid. Community participation in the formation and filling of data on the application of web-based information systems was raised by village government staff, community leaders in line with the ladder of participation.

Arnstein (1969) participation is how people can engage in social change to share in influential groups' benefits. Arnstein (1969) has created eight participatory measures. For the first ladder, it is called manipulation, and the second is calm. There will be no participation in the first and second steps.

Participation is crucial to the success of the program as stated by Chirenje et al. (2013) that in developing a community-based village information system, participation is one of the important elements for the

success of this program. Participation is expected to start from the planning stage, problem formulation, decision making, capacity building, utilization to evaluation and monitoring. Chirenje et al. (2013) report that cooperative behavior ripples in human networks to people separated by up to three degrees.

Furthermore, thirdly, conveying information. Fourth, consultation and the fifth partnership. The third to fifth step category is called the level of tokenism. Tokenism is the degree to which people are heard and allowed to debate, but they cannot assure that decision-makers will accept their views. Programs that can be seen from the community's coastal activeness in conveying information (Andrews et al., 2021). With the same understanding of information systems' benefits on web-based programs following existing concepts, such as togetherness, participation grew through consensus and shared vision, ideals, hopes, goals, and needs.

Second, extending from below, participation is not imposed from the top down or controlled by individuals or groups through the mechanism of power. Participation grows based on the awareness and needs felt by the community (Burgess-Limerick, 2018). Finally, trust and openness participation can be fostered on the basis of mutual trust and openness. For the application of information systems to web-based programs, the factors that encourage participation are togetherness.

The community is jointly involved in filling in data and activating web programs. The desire for a program to emerge from the village was not a program that was driven by the program growing from below. Apart from that, this program is an initiative of the community; of course, something emerges and is trust and openness. Participation determines the application of information systems in web-based programs. As stated, in building a community-based application of web-based information systems, participation is essential for this program's thriving community (Yannuar et al., 2018). Participation is expected from planning, problem formulation, decision making, capacity building, utilization, and evaluation and monitoring stages.

The benefits of implementing web-based information systems, of course, really depend on the services felt by the community for the program (Love et al., 2020). According to the Combine Resource Institute, the implementation of web-based information systems has several benefits, one of which is for planning development, in development planning resulting in a series of decision-making processes through deliberation planning discussions with the community (Van Bruinessen, 2013). With the application of a web-based information system, village has

a data center that can be used to make planning discussions with the district.

The coastal communities in the region need support to increase their knowledge about the use and management of the fishery and marine resources, while at the same time influencing local governments to increase their inside is insignificant. Arshad et al (2020) said that support services from the government become an integral part of a program.

Choo & de Alvarenga Neto (2010) found that knowledge-based organizations either flourish or flounder based on strategy and structure. The present findings demonstrate that management is also a critical determinant of knowledge networks and production of knowledge assets (de Castro et al., 2013). Therefore, there is a need to build a better model of accelerating and enhancing coastal communities' knowledge capacity in the region.

Knowledge-based development is a vision of development that considers knowledge as the central structuring element of a development strategy for organization (Carrillo, 2014). so that in its application it needs to be developed and evaluated according to needs.

The combination of production, post-production, and marketing is the biggest problem that needs to be addressed immediately to improve coastal communities' welfare. even though the knowledge system has been established (Wignaraja, 2003). Based on these studies, it shows that building knowledge of the ability model. In the future, an evaluation system is also needed in this program. evaluating the knowledge gained from the learning activities by the test of content measures whether learners have correct knowledge or not (Silamut & Petsangsri, 2020).

However, the relationship between Task-Technology Suitability and utilization is not strongly validated, at least for the current study's target sample and KMS targets for fishermen. Although the effect of task and technology on utilization was supported through the qualitative analysis of the interviews, this was not the case in the quantitative analysis of the survey.

CONCLUSION

The application of information system can accommodate all information related to fishermen in coastal areas. Khoon & Ramaiah (2014) explained what distinguishes this information system from other websites is the setting of website users to suit their overall needs. Sections involved in implementing a web-based information system such as village government officials and website managers. The application of web technology for information systems used in medium and small industries is very important,

because information systems can help increase productivity and competitiveness (Schubert & Leimstoll, 2007). This is quite evident from the large interest in the use of the web. The application of information system is a program that grew out of the needs and desires of coastal village communities. With the same interests, public participation will be raised, and needs to be accommodated by the government. In this case, the government, in delivering their policies are also based on the needs and interests of fostering the fostered community.

REFERENCES

- Ahern, T., Leavy, B., & Byrne, P. J. (2014). Complex project management as complex problem solving: A distributed knowledge management perspective. *International Journal of Project Management*, 32(8).
<https://doi.org/10.1016/j.ijproman.2013.06.007>
- Andrews, N., Bennett, N. J., Le Billon, P., Green, S. J., Cisneros-Montemayor, A. M., Amongin, S., Gray, N. J., & Sumaila, U. R. (2021). Oil, fisheries and coastal communities: A review of impacts on the environment, livelihoods, space and governance. In *Energy Research and Social Science* (Vol. 75).
<https://doi.org/10.1016/j.erss.2021.102009>
- Arnstein, S. R. (1969). Arnstein (1969) Ladder of Participation. In *Journal of the American Institute of Planners* (Vol. 35, Issue 4).
- Arshad, M. Z., Ahmad, M. J., Ali, M., Khan, W. A., & Arshad, M. H. (2020). The role of government business support services and absorptive capacity on smes performance. *International Journal of Advanced Science and Technology*, 29(3 Special Issue).
- Berkström, C., Papadopoulos, M., Jiddawi, N. S., & Nordlund, L. M. (2019). Fishers' Local Ecological Knowledge (LEK) on Connectivity and Seascape Management. *Frontiers in Marine Science*, 6(MAR).
<https://doi.org/10.3389/fmars.2019.00130>
- Burgess-Limerick, R. (2018). Participatory ergonomics: Evidence and implementation lessons. In *Applied Ergonomics* (Vol. 68).
<https://doi.org/10.1016/j.apergo.2017.12.009>
- Cao, L., Chen, Y., Dong, S., Hanson, A., Huang, B. O., Leadbitter, D., Little, D. C., Pikitch, E. K., Qiu, Y., De Mitcheson, Y. S., Sumaila, U. R., Williams, M., Xue, G., Ye, Y., Zhang, W., Zhou, Y., Zhuang, P., & Naylor, R. (2017). Opportunity for marine fisheries reform in China. *Proceedings of the National Academy of Sciences of the United States of America*, 114(3).
<https://doi.org/10.1073/pnas.1616583114>

- Carrillo. (2014). *Knowledge and the city: Concepts, applications and trends of knowledge-based urban development*. Routledge.
- Ceballos, H. G., Fangmeyer, J., Galeano, N., Juarez, E., & Cantu-Ortiz, F. J. (2017). Impelling research productivity and impact through collaboration: A scientometric case study of knowledge management. *Knowledge Management Research and Practice*, 15(3). <https://doi.org/10.1057/s41275-017-0064-8>
- Chen, J. L., Hsu, K., & Chuang, C. T. (2020). How do fishery resources enhance the development of coastal fishing communities: Lessons learned from a community-based sea farming project in Taiwan. *Ocean and Coastal Management*, 184. <https://doi.org/10.1016/j.ocecoaman.2019.105015>
- Chirenje, L. I., Giliba, R. A., & Musamba, E. B. (2013). Local communities' participation in decision-making processes through planning and budgeting in african countries. *Chinese Journal of Population Resources and Environment*, 11(1). <https://doi.org/10.1080/10042857.2013.777198>
- Choo, C. W., & de Alvarenga Neto, R. C. D. (2010). Beyond the ba: Managing enabling contexts in knowledge organizations. *Journal of Knowledge Management*, 14(4). <https://doi.org/10.1108/13673271011059545>
- Dalkir, K. (2011). Knowledge management. In *Understanding Information Retrieval Systems: Management, Types, and Standards*. <https://doi.org/10.4018/jksr.2012070105>
- de Castro, J. M., Diniz, D. M., Duarte, R. G., Dressler, M., & de Carvalho, R. B. (2013). Critical determinants within knowledge transfer processes: A case study at Embrapa. *Revista de Administração Pública - RAP*, 47(5). <https://doi.org/10.1590/S0034-76122013000500010>
- DLPF - The David and Lucile Packard Foundation. (2015). Indonesia Fisheries: 2015 Review. *California Environmental Associates*.
- Fallis, A. . (2013). Global Change, an overview. *Journal of Chemical Information and Modeling*, 53(9).
- FAO. (2019). FAO yearbook. Fishery and Aquaculture Statistics 2017. In *Proceedings - 2010 3rd International Conference on Biomedical Engineering and Informatics, BMEI 2010*.
- Farr, E. R., Stoll, J. S., & Beitzl, C. M. (2018). Effects of fisheries management on local ecological knowledge. *Ecology and Society*, 23(3). <https://doi.org/10.5751/ES-10344-230315>
- Garcia, S. M., & Rosenberg, A. A. (2010). Food security and marine capture fisheries: Characteristics, trends, drivers and future perspectives. In *Philosophical Transactions of the Royal Society B: Biological Sciences*. <https://doi.org/10.1098/rstb.2010.0171>
- Khoon, L. C., & Ramaiah, C. K. (2014). Design and development of web-based online exhibitions. *DESIDOC Journal of Library and Information Technology*, 34(2). <https://doi.org/10.14429/djlit.34.6750>
- Koenig, M. E. . (2011). Knowledge Management in Theory and Practice (2nd ed.). *Journal of the American Society for Information Science and Technology*, 62(10). <https://doi.org/10.1002/asi.21613>
- Kusumastanto, T., & Wahyudin, Y. (2012). Pembinaan Nelayan Sebagai Ujung Tombak Pembangunan Perikanan Nasional. *Wawasan TRIDHARMA Majalah Ilmiah Bulanan Kopertis Wilayah IV (STT No.2009/SK/DITJEN PPG/STT/1994) - ISSN 0215-8256*.
- Li, Y., Song, Y., Wang, J., & Li, C. (2019). Intellectual capital, knowledge sharing, and innovation performance: Evidence from the Chinese Construction Industry. *Sustainability (Switzerland)*, 11(9). <https://doi.org/10.3390/su11092713>
- Love, P. E. D., Matthews, J., & Zhou, J. (2020). Is it just too good to be true? Unearthing the benefits of disruptive technology. *International Journal of Information Management*, 52. <https://doi.org/10.1016/j.ijinfomgt.2020.102096>
- Menteri Kelautan dan Perikanan, R. I. (2016). Estimasi Potensi, Jumlah Tangkapan yang Diperbolehkan, dan Tingkat Pemanfaatan Sumber Daya Ikan di Wilayah Pengelolaan Perikanan Negara Republik Indonesia. *Keputusan Menteri Kelautan Dan Perikanan Republik Indonesia Nomor 47/Kepmen-Kp/2016*.
- Nonaka, I., & Takeuchi, H. (1996). The knowledge-creating company: How Japanese companies create the dynamics of innovation. *Long Range Planning*. [https://doi.org/10.1016/0024-6301\(96\)81509-3](https://doi.org/10.1016/0024-6301(96)81509-3)
- Octoriani, W., Fahrudin, A., & Boer, M. (2016). Exploitation Rate of Fisheries Resources which Caught by Purse seine in Sunda Strait. *Marine Fisheries : Journal of Marine Fisheries Technology and Management*. <https://doi.org/10.29244/jmf.6.1.69-76>
- OECD. (2016). Innovating Education and Educating for Innovation: The Power of Digital Technologies and Skills. In *Educational Research and Innovation*.
- olopade, olaniyi, TAIWO, I., & Dienye, H. (2017). Management of Overfishing in the Inland Capture Fisheries in Nigeria. *Journal of Limnology and Freshwater Fisheries Research*. <https://doi.org/10.17216/limnofish.335549>

- Phelps, C., Heidl, R., & Wadhwa, A. (2012). Knowledge, Networks, and Knowledge Networks: A Review and Research Agenda. In *Journal of Management*.
<https://doi.org/10.1177/0149206311432640>
- Retnowati, R., Suryanto, H., Purwanto, P., Haryanto, J. O., & Widyanto, H. A. (2020). Economic and Tourism Empowerment of Rawa Pening Supported by Local Culture and Wisdom (A Study on Rawa Pening, Ambarawa). *Journal of International Conference Proceedings*.
<https://doi.org/10.32535/jicp.v2i4.797>
- Saunders, M., Lewis, P., & Thornhill, A. (2008). Research Methods for Business Students 5th Ed. In *Research methods for business students*.
- Schubert, P., & Leimstoll, U. (2007). Importance and Use of Information Technology in Small and Medium-Sized Companies. *Electronic Markets*, 17(1).
<https://doi.org/10.1080/10196780601136799>
- Silamut, A. acha, & Petsangsri, S. (2020). Self-directed learning with knowledge management model to enhance digital literacy abilities. *Education and Information Technologies*, 25(6).
<https://doi.org/10.1007/s10639-020-10187-3>
- Urbancova, H. (2013). Competitive Advantage Achievement through Innovation and Knowledge. *Journal of Competitiveness*.
<https://doi.org/10.7441/joc.2013.01.06>
- Van Bruinessen, M. (2013). Contemporary developments in Indonesian Islam: Explaining the “conservative turn.” In *Contemporary Developments in Indonesian Islam: Explaining the “Conservative Turn.”*
<https://doi.org/10.1080/00074918.2013.850644>
- van den Burg, S. W. K., Dagevos, H., & Helmes, R. J. K. (2021). Towards sustainable European seaweed value chains: a triple P perspective. *ICES Journal of Marine Science*, 78(1).
<https://doi.org/10.1093/icesjms/fsz183>
- Wignaraja, G. (2003). Competitiveness Strategy in Developing Countries. In *Competitiveness Strategy in Developing Countries*.
<https://doi.org/10.4324/9780203466032>
- Yannuar, Y., Hasan, B., Abdullah, A. G., Hakim, D. L., & Wahyudin, D. (2018). Design and implementation of web-based internship information system at vocational school. *IOP Conference Series: Materials Science and Engineering*.
<https://doi.org/10.1088/1757-899X/434/1/012301>
- Yee, Y. M., Tan, C. L., & Thurasamy, R. (2019). Back to basics: building a knowledge management system. *Strategic Direction*, 35(2).
<https://doi.org/10.1108/SD-07-2018-0163>