

Collegial Interface of The Managerial Competencies, Leadership Practices, ICT Readiness Towards Organization Performance of the Electric Cooperatives in Cagayan Valley

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Abstract

The primary objective of this study is to examine the relationship between managerial competencies, leadership practices, ICT readiness, and organizational performance of Electric Cooperatives in the Cagayan Valley. To achieve the above aim, the study used the descriptive-correlation type of research using a structured questionnaire to gather pertinent data required in the study. The data were analyzed using descriptive statistics (means) and correlation procedures to determine the relationships between the variables. Aside from the key informants, 314 cooperative personnel served as the main respondents of the study. The study was conducted during the school year 2023-2024.

The analysis of the data indicates that Electric Cooperatives in Cagayan Valley have diverse characteristics influenced mainly by their area covered in their operation. They fall within acceptable collection efficiency and system loss (%) limits. Relatively, these Electric Cooperatives incessantly develop and nurture key management personnel who possess the necessary managerial aptitude to administer the Cooperatives efficiently and effectively in the attainment of their goals and objectives. These management personnel within the Electric Cooperatives inspire their personnel to work together as a team, equip them with skills and knowledge, and motivate them in achieving the vision and goals of their organization.

Likewise, Electric Cooperatives in Cagayan Valley have installed the necessary hardware, software, databases, and networking for the efficient operation of their organization, albeit they still need to upgrade to the latest technologies. These were manned by highly trained personnel with some improvements on the need to adapt to technological revolutions. These Electric Cooperatives earned enough income for their continuous operation, and the member-consumers and stakeholders were content with their services. However, activities to ensure the sustainability of the environment, especially water resources, in their areas of operation need improvement.

Administrators who possess a high level of managerial competence to efficiently manage the cooperatives, have equipped their personnel with skills and knowledge, and fully motivated them to achieve their goals, are also highly capable of installing and operating all the Information Communication Technology resources needed by these Electric Cooperatives. When the cooperatives' administrators are highly competent, and have fully trained their personnel with necessary skills and knowledge needed in their work; properly address system loss, collection efficiency and system reliability then they could attain their projected revenues, satisfy the demands of their member-consumers and stakeholders, and initiate more environmental sustainability and protection activities, thus leading to Triple A category.

Once the necessary computer and accompanying technology are available and operated by highly proficient personnel, the Electric Cooperatives can fully attain their annual projected revenues,

meet the demands of their member-consumers and stakeholders, and introduce more environmental sustainability and protection measures in their areas of operation.

Keywords: *electric cooperatives, management, managerial competencies, leadership practices, information technology readiness, organization performance*

INTRODUCTION

Electric cooperatives are utilities imbued with public interest. These organizations are typically owned and operated by the members they serve, who are often residents of rural or underserved areas. Electric cooperatives are established to provide reliable, affordable, and sustainable electricity to their members, ensuring that every individual has access to this essential service.

Due to the inadequacy of power service, the need for an agency to oversee the installation of countryside electrical systems was felt. It is on this score that the Electrification Administration (NEA) was created on August 4, 1969. An overhaul of the electric power industry sector was engineered, sparked by the passage of Republic Act No. 9136 or the Electric Power Industry Reform Act of 2001 (EPIRA) on June 8, 2001.

In the present study, we need to understand that business exists in an environment that consists of factors and forces that are internal and external to the firm. In pursuance of its objective, an organization cannot achieve its objectives without interacting with other members of the environment. An organization and its environment are inter-dependent; the organization depends on its environment for the source and opportunities necessary for the sources and opportunity necessary for its existence (Luenendonk, 2022).

General Managers and Board Directors as strategic leaders who deal with people to effectively influence them in striving willingly towards the achievement of the cooperative's mission and vision. Strategic leaders are charged with critical choices to facilitate the transfer of information, influence, and resources with implications for organizational performance (Simsek, 2021). It is at their discretion how they are going to put into action the plans, programs, and strategies they have developed, focusing on system loss reduction, collection efficiency increase, electric service reliability, stakeholders' participation, and power rate reasonability. Mere plans and strategies are but a piece of an idea written on paper but what matters most is how it will be translated into action.

As pointed out, strategic leadership is the ability to influence others to make day-to-day decisions that enhance long-term organization viability while at the same time maintaining its short-term financial stability (Rowe, 2001). Thus, key officials of the electric cooperative should serve as a model and an inspiration for others to join the bandwagon.

Managerial competency plays together with strategic leadership. Managerial competencies have been defined as a set of motivations, personal traits, abilities, knowledge, and values necessary to improve management performance and are a branch of a larger group of individual competencies. So, identifying these managerial competencies becomes a valuable source for achieving competitive advantages in these organizations. (Gamarra, Giroto, Segui, 2019). They added that in the 21st Century, organizations need to

be managed with specific competencies due to the changing and complex world in which they are developing their activities.

The tremendous changes in scope, variety of competencies, and necessary skills of managing the cooperative make their functions more complex, diverse, and challenging. These functions are essential to the areas of management, namely: the vision, mission, and goals of the organization, human resource development, finances and budgeting, and community involvement. The identification of competencies needed to function in these areas brings forth the challenges faced by cooperatives' General Managers every day, where accountability, challenges, and integrity as leaders and managers remain at stake. The essential competencies in these areas of management greatly influence the effectiveness and efficiency of the performance of the cooperative as a whole.

On the other hand, emphasis should also be given to the importance of the leader's knowledge and adaptation to Information Technology (IT). Its weight cannot be overstated. In the power industry, IT has revolutionized the way the cooperative functions and delivers its services. From the operation of remote-controlled sub-stations, to online payment, to the automated read and bill system, and the wireless communication. The concern here is how fast the cooperative adopts and how to fund this investment.

Premises considered, the researcher found it imperative to establish if strategic leadership practices, managerial competence, and information and communication technology adaptation correlate with each other, affecting People, Profit, Planet (3Ps). Addressing the focus area on system loss, collection efficiency, system reliability, reasonable power rate, and stakeholders' support. Specifically, the researcher deemed it necessary to look into the interplay and relationship between and among the areas of strategic leadership practices, managerial competencies, and information and communication technology that influences the organizational performance.

METHODOLOGY

The study used the quantitative-descriptive study research design. This aims to describe or quantify phenomena or variables of interest without manipulating or intervening in the natural setting. In other words, it seeks to provide a detailed and accurate account of the characteristics, behaviors, or attributes of a particular population, group, or phenomenon.

The proponent employed such a design considering that it is purposely to test the strength of association between variables which are only observed with no manipulation or intervention to be made. With this design, limited control has been used, so other variables may play a role in the relationship; and it has high external validity, of which the researcher has confidently generalized his conclusions to other electric cooperatives outside the research environment, and other institutions of likely services being offered (Bhandari, 2022).

The respondents of the study are confined only to Board Directors, General Managers/OIC-GM, department heads, and other rank and file employees of the six electric cooperatives. These include CAGELCO I for Cagayan I Electric Cooperative in Solana, Cagayan; CAGELCO II for Cagayan II Electric Cooperative in Aparri, Cagayan; ISELCO I for Isabela I Electric Cooperative in Alicia, Isabela; ISELCO II for Isabela II Electric Cooperative in Ilagan, Isabela; QUIRELCO of Quirino Electric Cooperative in Diffun, Quirino; and NUVELCO of Nueva Vizcaya Electric Cooperative in Dupax del Sur, Nueva Vizcaya.

Employing stratified sampling technique using Slovin's formula at 95 percent level of confidence set at 5 percent margin of error, this research involved the 321 respondents from a total population of 1,634 personnel which include the Board of Directors (BODs), Department Heads/General Managers (Department Heads/GMs), and Staff/Employees in each electric cooperative in the Cagayan Valley Region.

After identifying the participating electric cooperatives, letters were sent via email as early as July 8, 2023, to all the general managers and officers-in-charge of the six (6) electric cooperatives requesting to administer questionnaires. A personal visit was also conducted, and retrieval of the questionnaire was retrieved.

Frequency and percent distribution were used to describe the profile of the electric cooperatives. Mean, weighted mean, and verbal description were used to analyze and present the level, degree, and extent of managerial competencies, leadership practices, ICT readiness, environmental protection, and organizational performance variables. Spearman Rank-Order Correlation Coefficient (Spearman Rho) and Verbal Description were explored to analyze and present the interface of the independent and dependent variables.

The study strictly adhered to ethical research standards. Informed consent was obtained from all the participants, and permission to conduct the study was granted by the respective general managers and heads of offices of the electric cooperatives. Anonymity and confidentiality of data were maintained at all stages of the research process. All sources used were properly cited, and potential biases were addressed to ensure the credibility and integrity of both the data collection and the analysis.

RESULTS AND DISCUSSIONS

The study shows that the overall level of managerial competencies of the electric cooperatives is depicted by the mean value of 4.40 with a standard deviation of 0.54, which is qualitatively described as very high. The result indicates that electric cooperatives in Cagayan Valley possess the essential skills, habits, motives, knowledge, and attitudes necessary to successfully manage people when measured through the five basic components, such as planning, organizing, controlling, coordinating, and evaluating. The Triple and Double A awards of the respondent-ECs indicate that the key leaders have managerial competencies.

The overall level of strategic leadership practices of Electric Cooperatives in Cagayan Valley is depicted by the mean value of 4.44 with a standard deviation of 0.49, which is qualitatively described as very high. The very high overall level of strategic leadership practices is supported by the proof that all of the respondent-ECs attained remarkable achievements in categorization. Five (5) respondent-ECs got the Triple A, while only one (1) respondent-EC attained the Double A. This means that the Electric Cooperatives in the study area are very high in their strategic leadership practices in terms of determining strategic direction, developing human capital, emphasizing ethical practices, maintaining balanced strategic control, and organizational performance.

It is worth noting that some key informants honestly declared that their key leaders should use foresight to prepare the organization for potential challenges and opportunities. They added that leaders should stay informed about technological developments and market shifts. This encourages that decisions are aligned with the organization's long-term vision.

The overall level of information and communication technology readiness of Electric Cooperatives in Cagayan Valley is depicted by the mean value of 4.24 with a standard deviation of 0.61, which was qualitatively described as very high. Hence, Electric Cooperatives in Cagayan Valley have a sufficient level of readiness in terms of computer and technology equipment/materials, programs/applications, and skills that the Electric Cooperatives must possess to modernize and enhance their operations.

Key informants revealed that though the cooperative plans to adapt to technological advancements, they cannot just proceed because of the constraints in budget and manpower who understand the intricacies of ICT. They admitted that though there is a gradual implementation of ICT readiness, their present setup has already helped in the organizational performance. It was also pointed out that if only the ECs focused on ICT advancements, it would give a better organizational performance to ECs.

CONCLUSIONS:

Based on the findings of the study, the following conclusions were drawn: all the Electric Cooperatives in Cagayan Valley have diverse characteristics influenced mainly by their area covered in their operation. They fall within acceptable collection efficiency and system loss (%) limits. The Electric Cooperatives have key management personnel who possess the necessary managerial aptitude to administer the cooperatives efficiently and effectively in the attainment of their goals and objectives and the key management personnel within the Electric Cooperatives inspire their personnel to work together as a team, equip them with skills and knowledge, and motivate them in achieving the vision and goals of their organization.

Further, electric Cooperatives in Cagayan Valley have initially implemented and installed the necessary hardware, software, databases, and networking for the efficient operation of their organization. These were manned by highly trained personnel. But still, the ECs should continue to endeavor to upgrade their hardware, systems, and equip their personnel with ICT trainings; the Electric Cooperatives in Cagayan Valley earned enough income for their continuous operation; and the member-consumers and stakeholders were content with their services. However, activities to ensure the sustainability of the environment, especially water resources, in their areas of operation need improvement; when the administrators possess a high level of managerial competence to efficiently manage the cooperatives. The study also shows that ECs have equipped their personnel with skills and knowledge and fully motivated them to achieve their goals, then these cooperatives are highly capable of installing and operating all the Information Communication Technology resources needed by these Electric Cooperatives.

When the cooperatives' administrators are highly competent, and have fully trained their personnel with necessary skills and knowledge needed in their work; then they could attain their projected revenues, satisfy the demands of their member-consumers and stakeholders, and initiate more environmental sustainability and protection activities; and when the needed computer and accompanying technology are available and operated by highly proficient personnel.

RECOMMENDATIONS

Based on the findings and conclusions drawn in the study, the following were recommended:

1. The Electric Cooperatives in Cagayan Valley should strive to continuously develop the management potential of key personnel to administer the cooperatives efficiently and effectively in the attainment of their goals and objectives. This is by the aid of training, seminars, and encouraging employees to advance in their studies. Focus should also be made on the reduction of system loss, increase of collection efficiency, and improvement of system reliability.

2. The administrators of the Electric Cooperatives in Cagayan Valley should unceasingly motivate their personnel, develop and train them as teams equipped with skills and knowledge, as a means to resolve multifarious tasks and challenges that are frequently faced by the cooperatives. Venture into activities and projects that would benefit all the stakeholders, such as the generation of electricity to reduce power rates, smart technologies online monitoring, highly advanced meter reading, and full automation of the coop's operations.
3. Electric Cooperatives in Cagayan Valley should continuously acquire state-of-the-art hardware, software, databases, and networking that are necessary for the operation of the cooperatives. Likewise, personnel should also be trained to safely operate such ICT materials. Upgrading databases requires considerable finances; hence, the Cooperatives should provide sufficient budgets for the purchase of a computer data bank, which could not be implemented promptly due to financial constraints. Electric Cooperatives in Cagayan Valley need to acquire advanced computers and accompanying technologies used in various divisions, and to be operated by highly trained personnel for them to fully attain the annual projected revenues, help assuage the issues and problems emanating from their member-consumers and stakeholders. The key leaders of electric cooperatives should consider Artificial Intelligence (AI) in their operation, for it is now reshaping our world, making processes smarter, faster, and more efficient. The study finds application in the importance of AI and on how it revolutionizes the ways of living and how the corporate world works.
4. Electric Cooperatives in Cagayan Valley need to develop strategies or identify activities that should be implemented to further ensure the sustainability of the environment, especially water resources, in their areas of operation. Protection of environmental activities should be strengthened, particularly on tree planting and its sustainability, proper disposal of toxic substances coming from electrical equipment, and the use of non-toxic substances in the daily operations of the cooperative. Specifically,
5. Administrators should aim to further enhance their managerial competence and strategic leadership practices to efficiently manage their cooperatives. Emphasis should be made on the attainment of the coop's mission/vision and compliance with all the parameters of NEA to attain the Triple A category.
6. To improve their revenues, administrators should further develop and enhance their management competence; equip their personnel with the necessary skills and knowledge, satisfy the needs of their member-consumers and stakeholders. They should endeavor to be certified under the ISO 9000 family, which covers five quality management systems standards by the International Organization for Standardization, that help the cooperative ensure they meet customer and other stakeholder needs within statutory and regulatory requirements related to a service.

References

- Abelinde, C. B. (2015). Interrelationship analysis of DEA scores, performance measures, and correlated factors: Development of a functional model for selected electric cooperatives in the Philippines. Retrieved from https://animorepository.dlsu.edu.ph/etd_doctoral/462
- Al-Hawary, Sulieman Ibraheem, and Dalfiri, Mohammad Faraj. (2017). International Journal of Academic Research in Economics and Management Sciences. Vol. 6, No. 2 ISSN: 226-3624 <http://dx.doi.org/10.6007/IJAREMS/v6-i2/2811>

- Alexi, C. (2019). What is the difference between an ordinary leader and a strategic one? <https://www.linkedin.com>pulse>
- Bayo-Moriones, Alberto & Billon, Margarita & Lera-Lopez, Fernando. (2013). Perceived performance effects of ICT in manufacturing SMEs. *Industrial Management & Data Systems*. 113. 10.1108/02635571311289700.
- Berge, Zane & Muilenburg, Lin & Van Haneghan, James. (2002). Barriers to distance education and training: Survey results. *The Quarterly Review of Distance Education*. 3.
- Bhardwaj & Punia, BK (2013). Managerial Competencies and their Influence on Managerial Performance: A Literature Review. *International Journal of Advanced Research in Management and Social Sciences*. 02. 70-84.
- Boyatzis, Richard. (2008). Competencies in the 21st century. *Journal of Management Development*. 27. 10.1108/02621710810840730.
- Broecke, Stijn (2021) Artificial intelligence and employment: new evidence from occupations most exposed to AI. Published: Paris, France, OECD, 2021 <https://www.oecd.org/future-of-work/reports-and-data/AI-Employment-brief-2021.pdf>
- Blum, Edward & Aho, Alfred. (2011). *Computer Science: The Hardware, Software and Heart of It*. 10.1007/978-1-4614-1168-0.
- Clayton, J. (2019) The five stages of the strategic management process. *Small Business.com>five*.
- Daft, R. (2011) *Management*. 5th ed. San Diego: Dryden Press Harcourt Brace College Publishers
- Deleste, Aldren R. (1999). System loss reduction program in the distribution network of Panay Electric Company, Inc. (Unpublished Master's special paper). Central Philippine University, Jaro, Iloilo City.
- Demiralay, E. (2020). Strategic direction_ Why you need it to achieve growth.
- Edem, A. (2018). What is Strategic Leadership? Definition from *WhatIs.com*
- Elkington, John, (2021) *People, Planet, Profit: Looking at the Triple Bottom Line*. Green Swans (Fast Company Press).
- Farrell, Rachelyn; Ware Stephen G., Senanayake, Lasantha,. Causal Necessity as a Narrative Planning Step Cost Function. In *Proceedings of the 19th AAAI international conference on Artificial Intelligence and Interactive Digital Entertainment*, pp. 155-164, 2023.
- Faridzah Jamaluddin, Norman Mohd Saleh, and Zaini Embong (2023) *Cooperative Governance and Cooperative Performance: A Systematic Literature Review* <https://doi.org/10.1177/21582440231192944>

- Fiegener, M. (2019) Towards a Descriptive Theory of Strategic Control. A Study of the nature and effects of the organizational controls applied to strategies and strategic planning. <https://repository.upenn.edu>
- Firouzeh, Taghikhah; Jay, Daniel; and Grant, Mooney, (2017). "Profit, Planet and People In Supply Chain: Grand Challenges And Future Opportunities". In Proceedings of the 25th European Conference on Information Systems (ECIS), Guimarães, Portugal, June 5-10, 2017 (pp. 1299-1313). ISBN 978-0-9915567-0-0 Research Papers. http://aisel.aisnet.org/ecis2017_rp/84
- Gibbs, Graham & Simpson, Claire & Macdonald, Randal & Prof, Contact & Gibbs,. (2003). Improving student learning through changing assessment—a conceptual and practical framework. Yunis, Tarhini and Kassir (2018)
- Glades C. Medina, Narciso A. Martin Jr. and Ramon C. Posadas, PhD Polytechnic College of La Union Challenges in Improving the Services of La Union Electric Cooperative Incorporated (LUELCO, Inc.) For Member/Consumer-Owners' (MCOS) Satisfaction In The Province of La Union Volume 5, Issue 1, 2020, P-ISSN: 2672-2984, E-ISSN: 2672-2992, www.sajst.org
- Grashuis J. (2020). The agency cost of ownership and governance adaptations in farm producer organizations. *Agricultural Finance Review*, 80(2), 200–211. <https://doi.org/10.1108/afr-07-2019-0079>
- Guterman, Alan. (2023). Organizational Performance and Effectiveness. R Carton, Measuring Organizational Performance: An Exploratory Study (Athens, GA: University of Georgia Doctoral Dissertation, 2004), 3 (citing S. Kunkel, The impact of Strategy and Industry Structure on New Venture Performance (Athens GA: Unpublished Doctoral Dissertation, University of Georgia, 1991)).
- Hansen, G. and Wernerfelt, B., "Determinants of Firm Performance: The Relative Importance of Economic and Organizational Factors", *Strategic Management Journal*, 10(5) (September - October 1989), 399).
- Hassnain, Ammar. (2023). Impact of autocratic and democratic leadership styles on employees' performance and motivation. *Journal of Administrative and Business Studies*. 8. 10.20474/jabs-8.3.2.
- Hemrit W. (2020). Determinants driving Takaful and cooperative insurance financial performance in Saudi Arabia. *Journal of Accounting & Organizational Change*, 16(1), 123–143. <https://doi.org/10.1108/jaoc-03-2019-0039>
- Hurteau, M. et al. (2012) How legitimate and justified are judgments in program evaluation? *Evaluations* 15
- Ibrahim, Mariam & Huimin, Ma. (2017). Relationship between the components of information technology and product design. 133-138. 10.1145/3034950.3034964.
- Jiang, Biao & Li, Fan & Ahuja, Harshaanth & Batcha, Mohammed & Li, Wanjun. (2014). Global Logistics-Dilemma at Schneider Electric- Centralization or De-centralization..

- Kalpana, R. (2019) Importance of Proper coordination to achieve organizational objectives. Advertisement ideas.com
- Karanjia, J., "Effects of Corporate Culture on Organization Performance", IOSR Journal of Mathematics, 10(6 Ver. II) (November – December, 2014), 59
- Kitonga, D. (2017) Strategic Leadership Practices- JKUAT Repository [Home.http://irjkuat.ac.ke.handle](http://irjkuat.ac.ke.handle)
- Lango, M. (2014) School heads of the Department of Education- Nueva Vizcaya: Their communication effectiveness, leadership potentials, managerial competence, and linkaging and community development skills. Unpublished dissertation. Nueva Vizcaya State University, Bambang, Nueva Vizcaya.
- Laudon Kenneth C. (2010) Management Information Systems: Managing The Digital Firm, 11/E. Pearson Education, 2010. ISBN 8131730646, 9788131730645
- Llagas. A. (2016) Becoming a 21st Century Educational Leader. Lorimar Publishing Inc., Quezon City, Metro Manila
- Libo-on, Joefel T. (2021) Consumers' Satisfaction on Service Quality of Electric Cooperative American International Journal of Business Management (AIJBM) ISSN- 2379-106X, www.aijbm.com Volume 4, Issue 08 (August-2021), PP 162-177
- McClelland, D. C. (1973). Testing for competence rather than for "intelligence." American Psychologist, 28(1), 1–14. <https://doi.org/10.1037/h0034092>
- Nandhini, S. & Palanivelu, V. & Panigrahi, Asisa Kumar & Vignesh, N. & Kasirajan, Ramachandran. (2022). ICT System for 14.0 Adoption: Comparative Study to Assess the Readiness in Manufacturing MSMEs. Journal of Nanomaterials. 2022. 1-7. 10.1155/2022/7595970.
- Naguit, NC. (2012) Administrative philosophies, emotional quotient, anxiety level and stress coping mechanisms: Their relationships to the administrative competencies of secondary school administrators in Nueva Vizcaya. Unpublished dissertation. Nueva Vizcaya State University, Bambang, Nueva Vizcaya
- Pascual, C. (2008). Intellectual and Non-Intellectual Variables Affecting the Managerial and Social Skills of Administrators In Higher Education Institutions in Nueva Vizcaya. Unpublished dissertation. Nueva Vizcaya State University, Bambang, Nueva Vizcaya
- Pasquini, Alberto & Rizzo, Antonio & Scrivani, Petra & Sujan, Mark & Wimmer, Maria A. (2000). Human, Hardware and Software Components in Control System Specification.
- Pham, Ly-Huong, Desai-Naik, Tejal, Hammond, Laurie Abdeljabbar, Wael (2021), Information Systems for Business, Revised First Edition
- Porter, Michael, E. What is strategy? Publication date 1996/11/1, Volume 74, Issue 6, Pages 61-78 <https://scholar.google.com/citations>

- Posadas, Ramon. (2011). Assessing Productivity Performance Of Regional Electric Cooperatives In The Philippines. *International Business & Economics Research Journal (IBER)*. 6. 10.19030/iber.v6i8.3398.
- Posadas Ramon C., Cabanda Emilyn C. (2011) Assessing Productivity Performance Of Regional Electric Cooperatives In The Philippines DOI:10.19030/IBER.V6I8.3398 Corpus ID: 167015974
- Rodriguez, Ron Alvin E., Blancaflor, Israel R., Encabo Rex Christopher G., Florencondia, Noel, Subia Gener. (2019) Correlation between Load Growth and Reliability of an Electric Service Cooperative in the Philippines. *International Journal of Advanced Engineering, Management and Science (IJAEMS)*. [Vol-5, Issue-8, Aug-2019] ISSN: 2454-1311 <https://dx.doi.org/10.22161/ijaems.58.5>
- Rahman, N. (2018). Impact of strategic leadership on organizational performance, strategic orientation, and operational strategy. *Management Science Letters* 8 (12): 1387-1398. DOI: 10.5267/j.mal.2018.9.006
- Reddy K., Locke S. (2014). The relationship between ownership structure, capital structure and corporate governance practices. *International Journal of Managerial Finance*, 10(4), 511–536. <https://doi.org/10.1108/ijmf-12-2012-0130>
- Samimi. M. et al, (2020) What is strategic leadership? Developing a framework for future research. *The Leadership Quarterly*. DOI: 10.1016/j.legue.
- Satyendra (2020) Human resource management practices and organizational performance. <http://www.ispatguru.com>
- Sechadri, P. (2017) What is Strategic Direction? A QMS Perspective, [linkedin.com](https://www.linkedin.com) How school leaders make a difference to their students. Keynote address to the International Confederation of Principals. Auckland
- Simsek, Heavey & Fox, 2021. The Challenges of Strategic Leadership in Organizations. <https://www.cambridge.org/core/journals/journal-of-management-and-organization/article/challenges-of-strategic-leadership-in-organizations/26B7AFF4C63A88F04D64E29DAD3A9CBA#ref16>
- Singh, G, Beatty, James. (2016). Singh, A., & Beatty, J.R. (2016). “Adoption and Correlates of Western Concepts of High-Performance Work System in the IT Industry in India.” *International Journal of Organizational Analysis*, 24 (4), 2016, pp. 550-572. *International Journal of Organizational Analysis (formerly Organizational Analysis)*. 24. 550-572.
- Schneidewind, Norman. (2012). Computer, Network, Software, and Hardware Engineering with Applications. *Computer, Network, Software, and Hardware Engineering with Applications*. 10.1002/9781118181287.
- Taboada, Ianire & Daneshpajouh, Abouzar & Toledo, Nerea & Vass, Tharaka. (2023). Artificial Intelligence Enabled Project Management: A Systematic Literature Review. *Applied Sciences*. 13. 5014. 10.3390/app13085014.

Talmage-Rostron, Mark (2024) How Will Artificial Intelligence Affect Jobs. January 10, 2024. URL:
<https://www.nexford.edu/insights/how-willai>

Valderrama, H. Bautista, C (2012) Efficiency Analysis of Electric Cooperatives in the Philippines. Corpus ID: 73704554 Philippine Management Review 2011, Vol. 19, 1-10.

Villavicencio R., Solares M. (2019). *Cooperative corporate governance manual for boards of directors, supervisory boards and management*. Fairtrade Access Fund.

Walker, Matthew & Brakefield, Tiffany & Seidman, Joshua & Morgan, Alexandra & Hobson, J & Stickgold, Robert. (2003). Sleep and the Time Course of Motor Skill Learning. Learning & memory (Cold Spring Harbor, N.Y.). 10. 275-84. 10.1101/lm.58503. (Bush, 2011).

Worth, C. (2017). Definition of Coordination- Management Study Guide. <Httpss://www.managementstudyguide>

Woodward, Ian I (2011) Towards an object-relations theory of consumerism: The aesthetics of desire and the unfolding materiality of social life Volume 11, Issue 3 <https://doi.org/10.1177/1469540511417997>

Yamori N., Harimaya K., Tomimura K. (2017). Corporate governance structure and efficiencies of cooperative banks. *International Journal of Finance & Economics*, 22(4), 368–378. <https://doi.org/10.1002/ijfe.1593>

On-line/website:

<https://opinion.inquirer.net/95248/epira-is-working> (Epira is working) By: Cielito F. Habito - @inquirerdotnet Philippine Daily Inquirer / 12:38 AM June 17, 2016

<https://www.nea.gov.ph/ao39/about-us/about-nea>

<https://www.electric.coop/new-report-shows-electric-co-ops-are-powerful-engines-of-economic-development> Published October 9, 2023; Author - Victoria A. Rocha

<https://ncbaclusa.coop/blog/the-role-of-energy-cooperatives-in-advancing-clean-energy/> Published: Friday, July 1, 2022

https://lawphil.net/statutes/repacts/ra2013/ra_10531_2013.html

<https://asepcells.ph/energyportal/a-brief-history-of-philippine-electrification/>

<https://www.cemc.org/what-is-a-cooperative/>

<https://www.barryelectric.com/advantages-of-an-electric-cooperative/>

<https://www.cambridge.org/core/journals/journal-of-management-and-organization/article/challenges-of-strategic-leadership-in-organizations/26B7AFF4C63A88F04D64E29DAD3A9CBA>

<https://www.oxfordbibliographies.com/display/document/obo-9780199846740/obo-9780199846740-0084.xml>

https://link.springer.com/chapter/10.1007/978-3-031-03799-3_3 The Challenges of Strategic Leadership in Organizations | Journal of Management & Organization | Cambridge Core

<https://www.researchgate.net/publication/334676369> MANAGERIAL COMPETENCIES IN THE 21ST CENTURY A BIBLIOGRAPHIC REVIEW OF THE RESEARCH DOMAIN M. Pilar Gamarra, Michele Giroto, Luis A. Seguí (July 2019),

Britannica - [Artificial intelligence \(AI\) | Definition, Examples, Types, Applications, Companies, & Facts |](#)

<https://wgu.edu> All the Benefits Of Artificial Intelligence

simplilearn.com Advantages and Disadvantages of Artificial Intelligence [AI] (simplilearn.com) Advantages and Disadvantages of Artificial Intelligence [AI] Nikita Duggal, Mar 21, 2024

[Advantages of Artificial Intelligence \(AI\) In 2024 – Forbes Advisor INDIA](#) Advantages Of Artificial Intelligence (AI) In 2024 Rashi Maheshwari

[The Impact of AI on Job Roles, Workforce, and Employment: What You Need to Know \(innopharmaeducation.com\)](#) Robert Farrell

<https://www.bcg.com/publications/2021/impact-of-new-technologies-on-jobs> MARCH 18, 2021 Rainer Strack, Miguel Carrasco, Philipp Kolo, Nicholas Nouri, Michael Priddis, and Richard George

<https://www.oecd.org/future-of-work/reports-and-data/AI-Employment-brief-2021.pdf> AI-Employment-brief-2021.pdf (oecd.org)

<https://www.gcu.edu/blog/business-management/people-planet-profit-looking-triple-bottom-line> John Elkington, Archives, Enter the Triple Bottom Line in May 2021

https://www.iselco2.com.ph01-AGMA-2022-Book-v1-DRAFT-v5.5.FINAL_Website.pdf ()

<https://www.analyticsfordecisions.com/data-is-important-in-decision-making/> Written by Emidio Amadebain Data Science, Decision Making

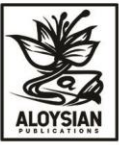
<https://www.redswitches.com/blog/database-trends/> Vasav Chaturvedi AUGUST 6, 2023

<https://www.geeksforgeeks.org/importance-of-computer-networking/> (Apr 24, 2023) Jena Satyabrat -

<https://www.levelset.com> Collection Effectiveness Index: Measuring Credit & Collection Success () Dawn Killough (June 16, 2022)

<https://www.valescoind.com> Improve Your Cash Collection Cycle with These Eight Tips () - Heather Hubbard - May 18, 2023

<https://www.upflow.io> 7 Ways to Improve Your Accounts Receivable Collections () Alex Louisy (June 5, 2023)



<https://www.abc-amega.com/articles/13-strategies-to-speed-up-collections/> 13 Strategies to Speed up Collections | ABC-Amega

[How Will Artificial Intelligence Affect Jobs 2024-2030 | Nexford University](#) Mark Talmage-Rostron January 10, 2024 ·

[What the future of work will mean for jobs, skills, and wages: Jobs lost, jobs gained | McKinsey](#) By James Manyika, Susan Lund, Michael Chui, Jacques Bughin, Lola Woetzel, Parul Batra, Ryan Ko, and Saurabh Sanghvi (2017)