



A mixed methods study on digital orientation and digital transformation of multi-purpose cooperatives in Davao Region: Similarities and differences in context

¹Ryan B. Perocho & ²Gloria P. Gempes

Abstract

In this digitally driven world, digital transformation is essential for the survival and growth of businesses, including cooperatives. This explanatory sequential mixed methods study investigated the influence of digital orientation on the digital transformation of Multi-Purpose Cooperatives (MPCs) in Davao Region, Philippines. Quantitative data, sourced from 316 respondents through stratified random sampling, revealed that MPCs of all sizes exhibit high levels of digital orientation and digital transformation. This showcases a readiness to embrace new technologies and engage in digitalization initiatives among MPCs. Notably, smaller MPCs demonstrate significantly higher digital orientation compared to medium-sized ones, potentially due to their agility and openness to new trends. Having a digital mindset proved to be a significant predictor of successful digital transformation for medium and large MPCs, whereas, this relationship is not significant for smaller cooperatives. Qualitative data reinforced and enriched these findings, emphasizing the challenges faced by smaller MPCs in terms of resources and technology access. As such, connecting-confirmation turned out to be the nature of integration for this mixed methods study.

Keywords: *business management, digital orientation, digital transformation, explanatory sequential design mixed-methods, multi-purpose cooperatives, diffusion of innovation theory*

Article History:

Received: December 30, 2023

Accepted: January 25, 2024

Revised: January 19, 2024

Published online: January 29, 2024

Suggested Citation:

Perocho, R.B. & Gempes, G.P. (2024). A mixed methods study on digital orientation and digital transformation of multi-purpose cooperatives in Davao Region: Similarities and differences in context. *Management, Education & Innovation Review*, 1(1), 66-76. <https://doi.org/10.53378/meir.01244>

About the authors:

¹Corresponding author. Certified Public Accountant and Master in Business Administration, Budget Officer in Ateneo de Davao University. Email: rbperocho@addu.edu.ph

²Research and statistics consultant /visiting professor/research examiner, Doctor in Education, Doctor in Management, PhD in Applied Linguistics



© The author (s). Published by Institute of Industry and Academic Research Incorporated.

This is an open-access article published under the Creative Commons Attribution (CC BY 4.0) license, which grants anyone to reproduce, redistribute and transform, commercially or non-commercially, with proper attribution. Read full license details here: <https://creativecommons.org/licenses/by/4.0/>.

Introduction

Digital transformation, encompassing the integration of new technologies and systems into organizational processes, is pivotal for enhancing business operations globally (Liu et al., 2022). Despite its significance, challenges persist in its widespread adoption, as evidenced by issues faced in China (Yan et al., 2021), the United States (PECB, 2022), and the Philippines (Ibrahim, 2022). While larger cooperatives in Mindanao have initiated digital initiatives, smaller cooperatives, especially in rural areas, still grapple with limited access to digital transformation. Recognized as a key enabler for future success (Capgemini, 2023), digital transformation requires a well-defined strategy and readiness (Kane et al., 2015). Its strategic importance is underscored by its revolutionary impact on business operations (Feher et al., 2017), fostering innovation, reducing costs (Leao & Silva, 2021), and promoting sustainability (Ji et al., 2023). Beyond financial performance, digital transformation shapes society by fostering communication, collaboration, and social engagement (Sanchez-Arrieta et al., 2021).

Methodology

This study employed a mixed methods research design, specifically an explanatory sequential mixed methods approach utilizing descriptive correlational analysis and phenomenology. The overarching goal of this research design is to enrich and strengthen the study's findings by combining both quantitative and qualitative research components, thereby contributing significantly to the existing literature.

The explanatory sequential mixed methods design employed in this study seamlessly integrates quantitative and qualitative strands in a two-phase sequence. The initial phase involves the collection and analysis of quantitative data to provide a numerical depiction of the phenomenon under investigation. Subsequently, the second phase entails the gathering and analysis of qualitative data to offer a more nuanced and contextualized understanding.

The study, focusing on the influence of digital orientation on digital transformation of MPCs in the Davao Region, began with the quantitative phase. Employing descriptive correlational analysis, the researcher determined descriptive levels of digital orientation and digital transformation, utilizing questionnaires adapted from previous studies (Karina &

Astuti, 2022; Putritamara et al., 2022). The quantitative phase also utilized a correlational design to examine the relationship between digital orientation and digital transformation.

Following the quantitative phase, the study transitioned to the qualitative strand using phenomenology. This approach aimed to explore the unique perspectives, challenges, and opportunities faced by employees of MPCs in the Davao Region. Data was collected through individual in-depth interviews and focus group discussions, ensuring a detailed exploration of the broader digital landscape.

The study focused on MPCs in the Davao Region, with a total of 340 respondents from 40 different cooperatives. The participants, employees of MPCs, provided valuable insights into the digital orientation and transformation initiatives within their organizations. The targeted sample size for the quantitative phase was determined to be 300 (Lyons & Hearne, 2015) respondents, selected through stratified random sampling based on cooperative size classifications.

Cooperative size classifications were defined by total capitalization, with small-sized cooperatives having 15 million and below, medium-sized with 100 million and below, and large-sized with above 100 million capitalizations. The study engaged participants from five provinces in the Davao Region, with 17 individuals participating in the qualitative phase through in-depth interviews and focus group discussions.

Data analysis for the quantitative phase involved the use of the Statistical Package for the Social Sciences (SPSS) software, calculating descriptive statistics, analysis of variance (ANOVA), Pearson correlation, and regression analysis. The qualitative data underwent thematic analysis, identifying emerging themes from the transcripts of interviews and focus group discussions.

Data triangulation was employed to integrate the quantitative and qualitative results, providing a more robust and nuanced understanding of digital orientation and transformation within MPCs in the Davao Region. The mixed methods approach allowed for a comprehensive exploration of the research problem, offering valuable insights for cooperative leaders, policymakers, and researchers involved in digital transformation initiatives.

Findings

The study reveals high levels of both digital orientation and digital transformation among MPCs in the Davao Region. The digital orientation, comprising indicators like digital curiosity, digital openness, digital alert, and digital innovative passion, is very high, indicating an awareness and active embrace of digital technologies. Similarly, digital transformation, encompassing strategic alignment and IT readiness, is also very high, suggesting that MPCs in the region are well-positioned for digital advancements.

Digital Orientation Levels: The overall mean score for digital orientation is 4.41, signifying a very high level. This aligns with the understanding that a strong digital orientation enables organizations to successfully manage and improve their operations.

Digital Transformation Levels: The overall mean score for digital transformation is 4.47, indicating a very high level of adoption and practice among MPCs in Davao Region. This resonates with the idea that digital transformation is crucial for business adaptability, competitiveness, and growth (Alobidyeen et al., 2022; Curraj, 2020; Purba, 2021).

Difference Across Cooperative Sizes: Small-sized MPCs exhibit a significantly higher digital orientation than medium-sized MPCs. However, in terms of digital transformation, there is no statistically significant difference across different cooperative sizes. The collective progress and commitment among MPCs in embracing digital transformation are emphasized.

Digital Orientation as a Predictor of Digital Transformation: The study establishes that digital orientation acts as a predictor of digital transformation, particularly for medium and large-sized cooperatives. This reinforces the notion that a strong digital orientation contributes to the success of digital transformation initiatives, providing a competitive edge in the digital age.

Consensus and Disagreements: The majority of participants confirm the very high ratings of digital orientation and digital transformation. However, some participants' express disagreements, particularly in the case of small-sized MPCs, emphasizing challenges related to limited resources.

Integration of Quantitative and Qualitative Findings: The nature of integration between quantitative and qualitative data varies. For digital orientation and digital transformation levels, the integration is connecting-confirmation, where qualitative data aligns with and confirms quantitative results. However, for differences across cooperative

sizes and the prediction role of digital orientation, there are instances of connecting-expansion, indicating some disagreements or expansion beyond the quantitative findings.

The study underscores the interconnectedness of digital orientation and digital transformation, emphasizing the importance of being digitally aware and educated for successful implementation and benefits from digital initiatives. The findings contribute to the understanding of the digital landscape in MPCs, with implications for sustainability, competitiveness, and value creation.

Conclusion

Based on the findings of the study, the following conclusions are drawn:

High Levels of Digital Orientation and Transformation: MPCs across all sizes in the Davao Region exhibit very high levels of both digital orientation (Tucmeanu et al., 2022) and digital transformation (Singh et al., 2021). This indicates a proactive stance towards embracing new technologies and actively participating in digital initiatives.

Role of Size in Digital Orientation: Smaller MPCs show a significantly higher level of digital orientation compared to medium-sized ones. This suggests that smaller cooperatives, known for their agility, are more open and adaptive to new digital trends (Kindermann et al., 2021).

Relationship Between Digital Orientation and Transformation: The relationship between digital orientation and digital transformation varies based on the size of the cooperative. For medium and large MPCs, a strong digital orientation is a significant predictor of successful digital transformation. However, for smaller cooperatives, this relationship is not as pronounced, hinting at the influence of other unique contextual factors.

Challenges Faced by Smaller MPCs: Qualitative data enriches the findings by acknowledging challenges faced by smaller MPCs, particularly related to limited resources and access to technology. Diverse perspectives emerge on the relationship between digital orientation and transformation for smaller cooperatives, indicating the need for further exploration of additional influencing factors.

Theory Confirmation - Diffusion of Innovation: The study strongly affirms the relevance of the Diffusion of Innovation Theory to MPCs in the Davao Region. The theory's emphasis on early adopters aligns with the observed high levels of digital orientation. The

convergence towards widespread digital transformation supports the theory's prediction of diffusion gaining momentum. Additionally, the positive impact of digital orientation on successful transformation, especially for larger cooperatives, is consistent with the theory's principles.

In essence, the study provides insights into how MPCs in the Davao Region navigate the digital landscape. It recognizes the joint effort of these cooperatives in embracing digital transformation while acknowledging the differences in approach based on size. The findings also underline the importance of understanding various factors influencing smaller cooperatives on their digital transformation journeys. The study concludes with a hopeful outlook, depicting MPCs in the Davao Region embracing the transformative power of digital technologies, guided by the principles of the Diffusion of Innovation Theory.

References

- Agarwal, R. (2020). *Digital transformation: A path to economic and societal value*. Sistema de Información Científica Redalyc, *Red de Revistas Científicas*. <https://www.redalyc.org/journal/6381/638167728001/html/>
- Aleshkovski, I., Bondarenko, V., & Ilyin, I. (2020). Global values, digital transformation and development strategy for global society: Conceptual framework. *International Journal of Foresight and Innovation Policy*, 14(2/3/4), 120. <https://doi.org/10.1504/ijfip.2020.111243>
- Alobidyeen, B., Al-Edainat, S., Al-Shabatat, S., & Al-Shabatat, S. (2022). Digitalization and its impact on employee's performance: A case study on greater Tafila municipality. *International Journal of Business and Administrative Studies*, 8(1), 33-47. <https://doi.org/10.20469/ijbas.8.10004-1>
- Ardito, L., Raby, S., Albino, V., & Bertoldi, B. (2021). The duality of digital and environmental orientations in the context of SMEs: Implications for innovation performance. *Journal of Business Research*, 123, 44-56. <https://doi.org/10.1016/j.jbusres.2020.09.022>
- Baehr, T. (2021). Exploring the antecedents of digital orientation: The role of dynamic managerial capabilities. *Academy of Management Proceedings*, 2021(1), 11521. <https://doi.org/10.5465/ambpp.2021.11521abstract>

- Bali, B., & Joshi, R. M. (2023). Digital orientation and practices adopted by the new startups: Antecedents and influences on firm's performance. *Global Business Review*. <https://doi.org/10.1177/09721509231163015>
- Barger, V., Peltier, J. W., & Schultz, D. E. (2016). Social media and consumer engagement: A review and research agenda. *Journal of Research in Interactive Marketing*, 10(4), 268-287. <https://doi.org/10.1108/jrim-06-2016-0065>
- Capgemini. (2023, April 13). *Digital transformation: A road-map for billion-dollar organizations*. <https://www.capgemini.com/resources/digital-transformation-a-roadmap-for-billion-dollar-organizations>
- Curraj, E. (2020). *Business digitalization of SME's in Albania: Innovative approaches and their impact on performance* [Doctoral dissertation]. <https://doi.org/10.31219/osf.io/p3yq9>
- Feher, P., Szabo, Z., & Varga, K. (2017). Analysing digital transformation among Hungarian organizations. *Digital Transformation – From Connecting Things to Transforming Our Lives*. <https://doi.org/10.18690/978-961-286-043-1.11>
- Gallin, J. I., & Ognibene, F. P. (2007). *Principles and practice of clinical research*. Academic Press.
- Hussain, M., Yang, S., Zahid, R. M., & Maqsood, U. S. (2023). ESG in the digital age: Unraveling the impact of strategic digital orientation. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4543836>
- Ibrahim, M. B. (2022, September 20). *Future-proofing Philippine cooperatives*. Manila Bulletin. <https://mb.com.ph/2022/09/20/future-proofing-philippine-cooperatives/>
- Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field Methods*, 18(1), 3-20. <https://doi.org/10.1177/1525822x05282260>
- Ji, Z., Zhou, T., & Zhang, Q. (2023). The impact of digital transformation on corporate sustainability: Evidence from listed companies in China. *Sustainability*, 15(3), 2117. <https://doi.org/10.3390/su15032117>
- Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2015, July 14). *Strategy, not technology, drives digital transformation*. MIT Sloan Management Review. <https://sloanreview.mit.edu/projects/strategy-drives-digital-transformation/>

- Kar, A. K., Ilavarasan, V., Gupta, M. P., Janssen, M., & Kothari, R. (2019). Moving beyond smart cities: Digital nations for social innovation & Sustainability. *Information Systems Frontiers*, 21(3), 495-501. <https://doi.org/10.1007/s10796-019-09930-0>
- Karina, A. P., & Astuti, R. D. (2022). *The role of digital orientation, digital capability, and digital innovation on the relationship of environmental dynamism towards FMCG SME's performance*. In *The 6th International Conference on Family Business and Entrepreneurship* (pp. 351-368). President University. <http://e-journal.president.ac.id/presunivojs/index.php/ICFBE/article/view/3792/1217>
- Khin, S., & Ho, T. C. (2019). Digital technology, digital capability and organizational performance. *International Journal of Innovation Science*, 11(2), 177-195. <https://doi.org/10.1108/ijis-08-2018-0083>
- Khuntia, J., Ning, X., & Stacey, R. (2021). Digital orientation of health systems in the post-covid-19 “New normal” in the United States: Cross-sectional survey (Preprint). *Journal of Medical Internet Research*, 23(8).
- Kindermann, B., Beutel, S., Garcia de Lomana, G., Strese, S., Bendig, D., & Brettel, M. (2021). Digital orientation: Conceptualization and operationalization of a new strategic orientation. *European Management Journal*, 39(5), 645-657. <https://doi.org/10.1016/j.emj.2020.10.009>
- Kraft, C., Lindeque, J. P., & Peter, M. K. (2022). The digital transformation of Swiss small and medium-sized enterprises: Insights from digital tool adoption. *Journal of Strategy and Management*, 15(3), 468-494. <https://doi.org/10.1108/jsma-02-2021-0063>
- Kraus, S., Durst, S., Ferreira, J. J., Veiga, P., Kailer, N., & Weinmann, A. (2022). Digital transformation in business and management research: An overview of the current status quo. *International Journal of Information Management*, 63, 102466. <https://doi.org/10.1016/j.ijinfomgt.2021.102466>
- Kyurova, A. (2022). The digital transformation and its impact on small and medium-sized enterprises. *Entrepreneurship*, 10(1), 7-18. <https://doi.org/10.37708/ep.swu.v10i1.1>
- Leao, P., & Silva, M. M. (2021). Impacts of digital transformation on firms' competitive advantages: A systematic literature review. *Strategic Change*, 30(5), 421-441. <https://doi.org/10.1002/jsc.2459>

- Lee, D. H., Dedahanov, A. T., & Rhee, J. (2015). Moderating role of external networks and mediating effect of innovation performance on the relationship between technology orientation and firm performance. *Asian Journal of Technology Innovation*, 23(3), 321-334. <https://doi.org/10.1080/19761597.2015.1120498>
- Liu, L., An, S., & Liu, X. (2022). Enterprise digital transformation and customer concentration: An examination based on dynamic capability theory. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.987268>
- Lyons, K., & Hearne, L. Sample size requirements for Research| TR+C. (n.d.). Trone Research + Consulting | Market Research & Consulting Firm. <https://www.troneresearch.com/blog/sample-size-requirements-reliable-study>
- Nasiri, M., Saunila, M., & Ukko, J. (2022). Digital orientation, digital maturity, and digital intensity: Determinants of financial success in digital transformation settings. *International Journal of Operations & Production Management*, 42(13), 274-298. <https://doi.org/10.1108/ijopm-09-2021-0616>
- Nassani, A. A., Grigorescu, A., Yousaf, Z., Condrea, E., Javed, A., & Haffar, M. (2023). Does technology orientation determine innovation performance through digital innovation? A glimpse of the electronic industry in the digital economy. *Electronics*, 12(8), 1854. <https://doi.org/10.3390/electronics12081854>
- Nguyen, D. C., & Dao, T. A. (2023). Digital Transformation in Vietnam: Policies, Results and Recommendations. *Journal of Southeast Asian Economies*, 40(1), 127-144. <https://doi.org/10.1355ac40-1f>
- Niraula, P., & Kautish, S. (2019). Study of The Digital Transformation Adoption in The Insurance Sector of Nepal. *LBEF Research Journal of Science, Technology and Management*, 1(1), 43-60. <https://www.lbef.org/journal/1-1/download/1-1-43-60.pdf>
- OECD. (2019). *How's Life in the Digital Age? Opportunities and Risks of the Digital Transformation for People's Well-being*. OECD.Org. <https://www.oecd.org/publications/how-s-life-in-the-digital-age-9789264311800-en.htm>
- PECB. (2022, November 9). *Digital transformation challenges and how to overcome them?* ISO Training, Evaluation, and Certification. <https://pecb.com/article/digital-transformation-challenges-and-how-to-overcome-them>

- PricewaterhouseCoopers. (2020, August 10). Innovation and digital transformation: How are Philippine MSMEs performing? | Business unusual. PwC. <https://www.pwc.com/ph/en/publications/ph-columns/business-unusual/2020/innovation-and-digital-transformation-how-are-philippine-msmes-performing.html>
- Purba, C. B. (2021). Digital transformation in the Indonesia manufacturing industry: The effect of E-Earning, E-task and leadership style on employee engagement. *International Journal of Data and Network Science*, (5), 361-368. <https://doi.org/10.5267/j.ijdns.2021.5.007>
- Putritamara, J. A., Hartono, B., Toiba, H., Utami, H. N., Rahman, M. S., & Masyithoh, D. (2023). Do dynamic capabilities and digital transformation improve business resilience during the COVID-19 pandemic? Insights from beekeeping MSMEs in Indonesia. *Sustainability*, 15(3), 1760. <https://doi.org/10.3390/su15031760>
- Quinton, S., Canhoto, A., Molinillo, S., Pera, R., & Budhathoki, T. (2017). Conceptualising a digital orientation: Antecedents of supporting SME performance in the digital economy. *Journal of Strategic Marketing*, 26(5), 427-439. <https://doi.org/10.1080/0965254x.2016.1258004>
- Rupeika-Apoga, R., Petrovska, K., & Bule, L. (2022). The effect of digital orientation and digital capability on digital transformation of SMEs during the COVID-19 pandemic. *Journal of Theoretical and Applied Electronic Commerce Research*, 17(2), 669-685. <https://doi.org/10.3390/jtaer17020035>
- Samaniego, A. (2023, February 1). *Why the Philippines must embrace digitalization*. Manila Bulletin. <https://mb.com.ph/2023/02/01/why-the-philippines-must-embrace-digitalization/>
- Sanchez-Arrieta, N., Gonzalez, R. A., Cañabate, A., & Sabate, F. (2021). Social capital on social networking sites: A social network perspective. *Sustainability*, 13(9), 5147. <https://doi.org/10.3390/su13095147>
- Saunila, M., Nasiri, M., Ukko, J., & Rantala, T. (2021). Determinants of the digital orientation of small businesses. *The Palgrave Handbook of Corporate Sustainability in the Digital Era*, 75-90. https://doi.org/10.1007/978-3-030-42412-1_4

- Singh, S., Sharma, M., & Dhir, S. (2021). Modeling the effects of digital transformation in Indian manufacturing industry. *Technology in Society*, 67, 101763. <https://doi.org/10.1016/j.techsoc.2021.101763>
- Siregar, R., & Sudarmanto, E. (2023). Beyond traditional boundaries: Embracing digital transformation for enhanced management efficiency at micro and small business enterprises. *West Science Interdisciplinary Studies*, 1(6), 258-270. <https://doi.org/10.58812/wsis.v1i6.99>
- Tucmeanu, E. R., Tucmeanu, A. I., Iliescu, M. G., Żywiołek, J., & Yousaf, Z. (2022). Successful management of IT projects in healthcare institutions after COVID-19: Role of digital orientation and innovation adaptation. *Healthcare*, 10(10), 2005. <https://doi.org/10.3390/healthcare10102005>
- Westerman, G., Bonnet, D., & McAfee, A. (2014). *Leading digital: Turning technology into business transformation*. Harvard Business Press.
- Yan, M., Liu, J., Dou, S., Sun, Y., Dai, Y., & Dong, X. (2021). The status quo of digital transformation in China: A pilot study. *Human Systems Management*, 40(2), 169-183. <https://doi.org/10.3233/hsm-200917>