

# Dynamic Capabilities, Flexibility and Competitive Performance Practices Based on IT; Comparison of Public Organizations and Agricultural Businesses

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The study examines the necessity of information technology (IT)-based transformation across various sectors in the context of Industry 4.0 and Society 5.0, highlighting the critical role of human resource management in public organizations and the essential nature of business digitalization. Through a systematic literature review of 37 recent journals, the findings reveal that dynamic capabilities and IT flexibility are more prevalent in agricultural businesses compared to public organizations. The implications suggest that public organizations should enhance IT governance to improve dynamic capacity focused on human resources, promoting flexibility in IT use. For agricultural businesses, prioritizing the development of IT capacity and enhancing the perceptions and behaviors of farmers and extension workers is crucial for fostering competitiveness. This will optimize the agricultural supply chain and support effective digitalization. Public sector improvement implications: a) Improved IT governance, is public organizations should focus on strengthening their IT governance structures to enhance dynamic capacity, particularly related to human resource management; and b) Improved flexibility is ensuring that IT use in these organizations adheres to flexibility principles will be critical to adapting to changing needs. Agriculture business focus implications: a) Improved capacity is agricultural stakeholders should prioritize improving their IT capacity; b) Improved perceptions and behaviors is improving the perceptions and behaviors of farmers and extension workers is critical to developing dynamic IT capabilities and business flexibility; and c) Effective digitalization, this effort is critical to optimizing the agricultural supply chain and ensuring the success of the digital transformation of agricultural practices.

**Keywords:** Agricultural enterprises, public organizations, information technology, flexibility, dynamic capabilities, competitive.

## INTRODUCTION

The transition to Industry 4.0 and Society 5.0 indeed signifies a profound transformation in how services are delivered, heavily influenced by advancements in information technology. The transition from Industry 4.0 to Society 5.0 highlights several key themes (Mikalef *et al.*, 2021). There are at least five aspects to a clearer picture of the intended transition. First, Technological Transition. Technology advanced greatly in Industry 4.0, especially with automation, AI, the IoT, and big data. These changes have revolutionized sectors, enabling smarter production and supply chains. However, Society 5.0 goes beyond. Society 5.0 uses innovative technologies to all businesses and society. Beyond industry, these technologies should be integrated into daily life to improve convenience, efficiency, and productivity in public services, healthcare, and education.

Secondly, sustainability. Society 5.0 uses technology for economic progress and social and environmental issues. Smart grids, renewable energy, waste management, and sustainable agriculture are examples. Society 5.0 can increase environmental sustainability and handle global concerns like climate change, resource depletion, and inequality through data analytics and AI. To create sustainable and resilient societies, technology is used to promote environmental health and drive economic growth.

Third, society changes. Industry 4.0 has changed the workplace by introducing new technologies that are altering the labor market and providing new jobs while eliminating others. Society 5.0 expands on these improvements for a more holistic makeover. Avoiding traditional work models and adopting flexible, collaborative, and decentralized ones. Society 5.0 aims to balance technology and human requirements so that all social classes benefit from



technological advances. It also stresses lifelong learning, digital literacy, and skills retraining to help people adapt to a changing world.

Fourth, life quality. Society 5.0 aims to improve people's lives. Better housing, healthcare, education, and social services are included. Personal learning platforms and accessible public services can help meet people's demands. The objective is to use technology to distribute opportunities more fairly, making life easier and more fulfilling for everyone.

Fifth, Human Role. Society 5.0 prioritises people over procedures, unlike Industry 4.0. It stresses human-centered tech. In this perspective, humans are central and technology enhances rather than replaces life. In Society 5.0, robots and AI systems help humans with creative, cognitive, and strategic tasks. Through education, training, and innovation ecosystems, the government aims to increase human capital (HR). Society 5.0 promotes an inclusive approach to technology development to build a harmonious society where humans and machines maximise their potential.

According to [Mikalef et al. \(2021\)](#); [Kumar and Stylianou \(2014\)](#); [Mikalef \(2014\)](#), digital technologies improve service sophistication and force organisations to adopt more competitive and nimble operational models. This trend emphasises the need for firms to use IT as a key strategy to adapt to market changes and maintain competitive advantages. Companies seeking success in this new era must use digital tools and data analytics.

[Mohammad and Wasuzzaman \(2021\)](#) show that competitive performance is crucial for competitive advantage, with differences between public and private organizations. Budget management and results are crucial to competitive performance in public organizations ([Diaby and Sylwester, 2014](#)). Bureaucratic services must be efficient and transparent. For agricultural firms, competitive performance means exceeding initial profit estimates ([Waheed and Zhang, 2022](#)). Organizational management is crucial in negotiating dynamic external forces across sectors. Adapting to changes, optimizing resources, and maintaining competitive performance in a continuously changing marketplace require effective management.

Public organizations and competitive enterprises are heavily influenced by external influences, particularly IT flexibility ([Shukla and Sushil, 2020](#); [Gong et al., 2020](#); [Han et al., 2017](#)). This adaptability helps organizations adjust to changing conditions, improving performance.

According to several researchers, dynamic talents are vital in this situation. These competencies help organizations detect and adapt to external changes, keeping them competitive and resilient.

Decentralized governance, as highlighted by [Mikalef et al. \(2021\)](#), also improves organizational effectiveness. Distributing decision-making authority helps organizations adapt to complicated contexts by exploiting local knowledge

and skills. These elements demonstrate the significance of adaptation and strategic management in today's changing environment for competitive performance.

[Mikalef et al. \(2021\)](#) claim that IT flexibility boosts an organization's dynamic capacities. This adaptability helps organizations handle changing situations and conflicts that disrupt operations. Organizations must maximize IT resources to adapt and compete.

IT flexibility improves organizational effectiveness, especially in sensing, processing, and transmitting information. This skill is essential for identifying environmental changes and responding quickly to new difficulties ([Mikalef et al., 2021](#); [van De Wetering, 2017](#); [Mikalef, 2014](#)).

[Persson and Stırna \(2015\)](#) found that IT flexibility improves dynamic capacities. IT is flexibility helps organizations compete in a complex environment by enabling quick adaptation to new information and conditions. IT flexibility and dynamic skills are essential for organizations seeking to succeed in a changing world.

Research regularly reveals that dynamic IT skills improve organizational competitiveness. [Majhi et al. \(2022\)](#); [Stolze and Sailer \(2022\)](#); [Conboy et al. \(2020\)](#) show that using dynamic IT capabilities boosts competitiveness. Dynamic IT capabilities boost organizational competitiveness, according to empirical studies from [Mikalef \(2018\)](#); [van de Wetering and Mikalef \(2017\)](#); [Kaur and Mehta \(2017\)](#); [Pappas et al. \(2017\)](#); [Kaur and Mehta \(2016\)](#). This research emphasizes the need to establish and using dynamic IT capabilities to adapt to changing circumstances, improve performance, and stay competitive. In today's fast-paced business environment, organizations must be able to innovate, respond to client expectations, and overcome disruptions to be competitive.

Despite significant evidence that IT dynamic capabilities boost organizational competitiveness, [Mikalef et al. \(2019\)](#); [Mikalef and Pateli \(2017\)](#) question its constancy across time. They suggest that information technology necessitates constant research into how these skills may adapt and transform to stay effective. They emphasize balancing operational and production efforts, especially in supply chains, highlighting the necessity for a nuanced view of competitive advantage.

According to [Stolze and Sailer \(2022\)](#); [Goh and Arenas \(2020\)](#), IT dynamic capabilities affect competitiveness more in entrepreneurial than bureaucratic scenarios. This shows the need of adopting dynamic capabilities to agricultural operational models.

The agriculture industry has several obstacles and quick changes, according to [Alwi et al. \(2024\)](#). Agricultural actors must learn to negotiate these processes. [Fariki et al. \(2024\)](#) suggest that IT can boost rural business efficiency and help them get digital.

According to [Saputra et al. \(2024\)](#); [Charatsari et al. \(2023\)](#), digitalization is necessary to modernize agriculture,



especially food supply chains. Lioutas and Charatsari (2022) emphasize that Agriculture 4.0 and Society 5.0 require information technology-driven agricultural innovation. Charatsari et al. (2023); Charatsari (2022); Lioutas et al. (2021); Musa and Basir (2021) show that dynamic IT capabilities help farmers increase their knowledge and skills, boosting agribusiness competitiveness. This invention could give the food supply chain a short-term competitive advantage, highlighting the importance of IT in modernising agriculture and guaranteeing food security.

Based on the theoretical framework, this paper examines public-agricultural entrepreneurial interactions. This study examines how IT Dynamic Capabilities and Flexibility affect competitive performance.

IT flexibility, how public and agricultural organisations use it to adapt to changing conditions and improve service or product quality. Analysis of dynamic IT capabilities in both industries and their impact on organizational success. This includes sensing environmental changes, responding well, and innovating processes or products. Comparing IT flexibility and dynamic capabilities to competitive performance. This will examine how these aspects improve food supply chain efficiency, efficacy, and competitive advantage.

The research will use a comparative study approach to explore how these notions differ in public and agricultural entrepreneurial organizations. The paper explores these dynamics to provide theoretical evidence and practical ideas for improving competitiveness in both sectors, particularly in food supply.

## MATERIALS AND METHODS

This research will use a systematic literature review (SLR) to meet its goals. Lim et al. (2022); Luft et al. (2022); Kosztyán et al. (2021); Pursell and McRae (2020) say SLR is a rigorous method for critically analyzing literature knowledge, ideas, and conclusions. This technique helps academics synthesize theoretical contributions and discover knowledge gaps. Snyder (2019); Lame (2019); Cash (2018); Palmatier et al. (2018); Sio et al. (2015) note that secondary data will underpin the SLR. The data will include scholarly articles and journals on flexibility, dynamic capacities, and competitive performance in public and agricultural entrepreneurial enterprises, particularly in the food supply chain.

This paradigm will enable a full literature review to identify major themes, trends, and theoretical discoveries. The SLR will set the groundwork for understanding IT flexibility, dynamic capacities, and competitive performance, informing future research and applications in both industries.

Figure 1 shows the stages of systematic literature review (SLR) research from reviews (Chukwuere, 2023; Snyder (2019); Palmatier et al. (2018); Galvan and Galvan, 2017; Ravitch and Riggan, 2016; Jahan et al. (2016); Boyd and

Solarino (2016); Rodell et al. (2016); Tricco et al., 2015); Carlborg et al. (2014).

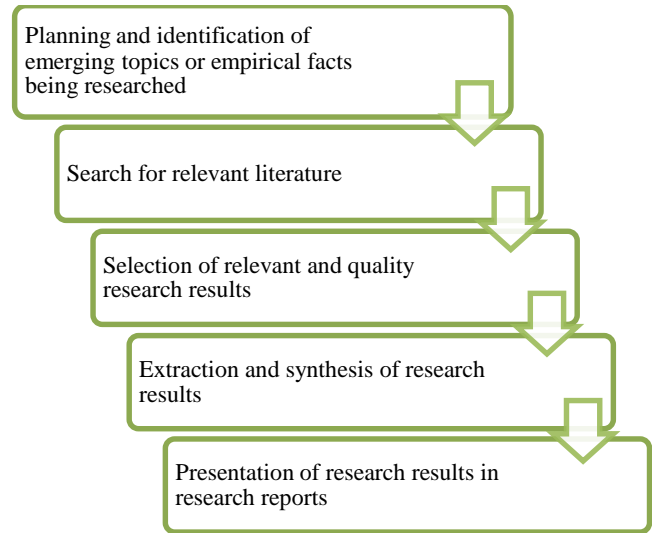


Figure 1. Stages of systematic literature review research.

The operational stages in this study are described as follows (Chukwuere, 2023; Snyder, 2019; Palmatier et al., 2018; Galvan and Galvan, 2017; Ravitch and Riggan, 2016; Jahan et al. (2016); Boyd and Solarino (2016); Rodell et al. (2016); Tricco et al. (2015); Carlborg et al. (2014):

### 1. Topic Planning and Identification

Topic identification is based on the results of the researcher's review of various sources that are considered to still have a gap between theory and empirical facts. The results of the review then raise key questions or Research Questions (RQ) to limit the material and accessibility of the analysis topic. The RQ submitted is The research question chosen by the researcher is "How is the Practice of Dynamic Capabilities, Flexibility, and Competitive Performance Based on Information Technology (Digitalization); Comparative Study of Public Organizations and Agricultural Businesses".

### 2. Literature Search

Searching for relevant literature according to the specified RQ. To facilitate filtering and consistency of search topics, the search is only on research published in the form of the latest international scientific journals. The literature search is carried out in two steps:

- a) Determining the literature search keyword (search string) which is based on the search keyword. There are two keywords in question, namely "Practice of Dynamic Capabilities, Flexibility, and Competitive Performance Based on Information Technology (Digitalization) in Public Organizations; and "Practice of Dynamic Capabilities, Flexibility, and Competitive Performance Based on Information Technology (Digitalization) in Agricultural Businesses".



b) Determining the source of the literature search. The literature in question is an international journal. The search uses software assistance to facilitate managing literature with Zotero.

**3. Selection for Quality Assurance**

Selection to determine journals that are appropriate to the topic, recent, and reputable as a basis for data quality. The selection criteria for research results are: a) Literature only in the form of international journals; b) Reputable international journals indexed by Scopus; and indexed in international databases such as Copernicus and others; and c) The latest scientific journals published between 2020-2024.

With these provisions, 37 journals were obtained, consisting of 18 journals focusing on public organizations, and 19 journals on agricultural businesses. Deepening the findings and theoretical explanations in the case of public organizations, supported by the addition of 25 journals under five years old.

**4. Extraction and synthesis,**

Data extraction to sort and select metadata for each topic and research findings for further synthesis. The goal is to map topics and research findings as a basis for constructing significant roles theoretically or in practical implications.

**5. Presentation of the report**

The stages of writing research results in a journal manuscript (journal draft) for publication. The contents of the manuscript are in accordance with standard provisions, starting from the abstract, keywords, introduction, literature review, methodology, results, discussion, conclusions, recommendations, and references.

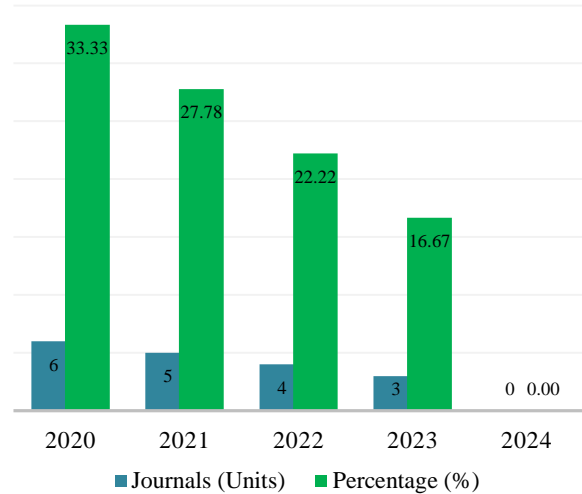
In a systematic literature review (SLR), data extraction and synthesis are critical, especially in a qualitative paradigm. Perry and Hammond (2002) define qualitative analysis in SLR as synthesizing descriptive qualitative research data to comprehend the literature.

Synthesis, or meta-synthesis, lets researchers combine study results. This strategy seeks to create new theories or notions or deepen and broaden understanding. Meta-synthesis methodically summarizes and compares qualitative data to reveal patterns and insights that individual research may miss. This approach helps identify overarching themes and relationships across diverse contexts, such as public organizations and agricultural entrepreneurial organizations in the food supply chain, when studying IT flexibility, dynamic capabilities, and competitive performance. The theoretical framework and practical findings from this synthesis-based analysis can inform future research and applications in these disciplines.

**RESULTS**

**Public Organization Review:** Eighteen publications focus on dynamic skills, adaptability, and competitive performance, particularly in information technology and digitalization.

Figure 2 helps explain academic studies on dynamic skills, adaptability, and competitive success in digitalization. It helps scholars and practitioners find relevant literature for their studies and applications by identifying significant publications. This systematic journal identification emphasizes public organization research and discourse on important problems.



**Figure 2. Distribution of journal publications in public organizations according to publication time.**

Most research (journal publications) occurred in 2020, with 6 journals (33.33%). The lowest in 2023 was 16.67%, while in 2024 it was absent.

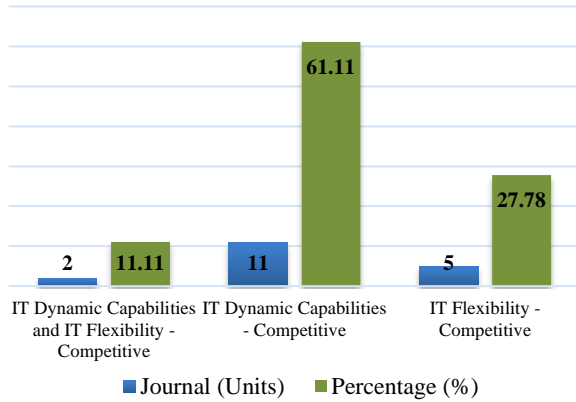
The year 2020 marked a significant peak in research output, indicating an increased interest and focus on the theme of dynamic capabilities and IT flexibility during the period. The decrease in publications in 2023 may indicate a shift in research priorities or a possible delay in the publication process for current studies. Because 2024 is still ongoing, the absence of published research may not reflect ongoing work in the field. It is important to monitor this year for emerging studies as new research often takes time to be published.

This publication trend highlights the fluctuating interest in the intersection of dynamic capabilities, flexibility and competitive performance in the context of digitalization. The peak in 2020 may indicate a response to the urgent need for organizations to adapt to technological change. Continued monitoring will be essential to assess how these themes evolve in the research landscape in the years to come.

Based on the frequency or intensity of the assessment of practices on each variable (focus) of the analysis, namely IT dynamic capability, and IT flexibility towards competitive performance, three patterns are created. The intended pattern also describes the relationship model between variables. The intended information is presented in Figure 3.







**Figure 3. Intensity of study of relationship models between variables in public organizations.**

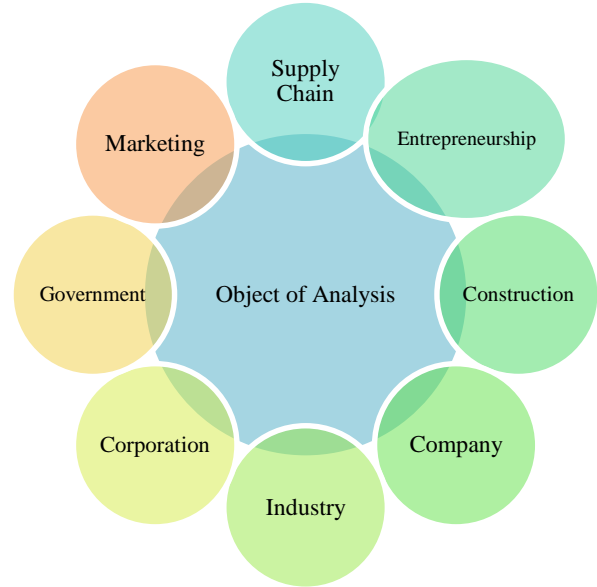
Information in Figure 3 shows that the intensity (frequency) of the analysis focus is still partial. This can be seen from the highest intensity of the relationship pattern, namely the effect of IT dynamic capacity on the competitive performance of 11 journals (61.11%) as reported by [Azzam et al. \(2023\)](#); [Wibisono and Supoyo \(2023\)](#); [Awwad et al. \(2022\)](#); [Majhi et al. \(2022\)](#); [Stolze and Sailer \(2022\)](#); [Fadhilah and Subriadi \(2021\)](#); [Bagus et al. \(2021\)](#); [Ma et al. \(2021\)](#); [Conboy et al. \(2020\)](#); [Goh and Arenas \(2020\)](#). Followed by IT flexibility on competitive performance of 27.78% as reported by [Al-Taweel \(2023\)](#); [Mikalef et al. \(2021\)](#); [Shukla and Sushil, \(2020\)](#). Meanwhile, the simultaneous relationship model is still very limited with a contribution of only 11.11% as carried out by [Afandi \(2020\)](#).

The findings indicate a strong emphasis on the relationship between IT dynamic capability and competitive performance, while the roles of IT flexibility and the combined model require further exploration. This partial intensity suggests opportunities for future research to deepen the understanding of these relationships and their implications for competitive strategy.

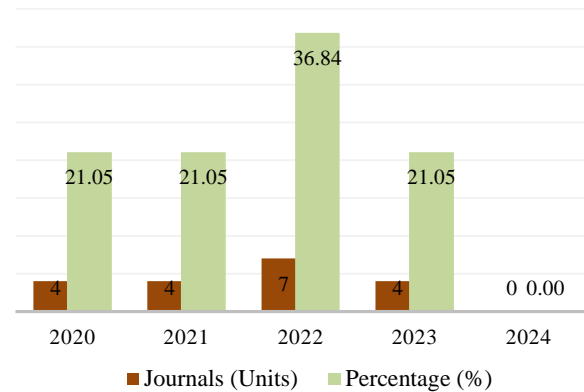
The next finding is about the field or type of public organization that is the object of the investigation. The results of the analysis show that eight types of organizational fields are the focus of the researcher as referred to in Figure 4.

Judging from the intensity, organizations in the form of companies and industries are the most dominant (30%), followed by the company scale in a corporation.

**Review of Agricultural Enterprises:** 19 journals have been identified that discuss the practices of IT dynamic capabilities, IT flexibility, and IT-based competitive performance (digitalization) in the case of agricultural businesses. The journals that published the most in 2022 were 7 journals or 36.84% of the total journals. Meanwhile, the other journals were relatively stable (21.05%). More complete information is presented in Figure 5.



**Figure 4. Types of public organization analysis objects.**



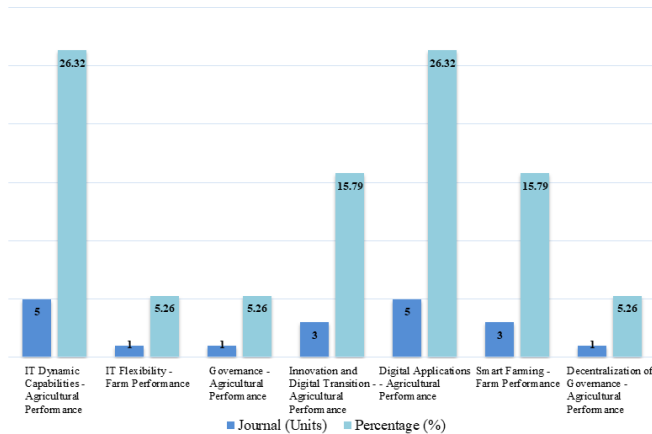
**Figure 5. Distribution of journal publications in agricultural business according to publication time.**

Interestingly, there have been no journal publications in 2024 on the topics of dynamic capabilities, IT flexibility, and competitive performance based on information technology in agricultural enterprises. This pattern mirrors the trend observed in public organizations regarding these same themes. This absence of recent publications may indicate a decreasing interest in studying this area.

In terms of the intensity of studies on dynamic capability and flexibility practices to improve the competitiveness of agricultural businesses, they are spread across seven study focuses. As seen in Figure 6, the highest are in two studies, namely IT dynamic capabilities - agricultural performance; and digital applications - agricultural performance, each five times or 26.32% of the total journals. Key contributions to this research include the works of [Charatsari et al. \(2023\)](#); [Charatsari et al. \(2022\)](#); [Lioutas and Charatsari \(2022\)](#);

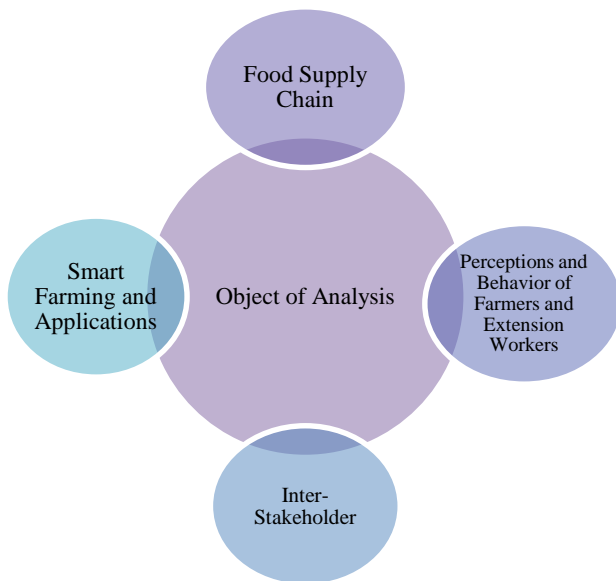


Bellon-Maurel *et al.* (2022); Zscheischler *et al.* (2022); Kvam *et al.* (2022); Sutherland and Labarthe, (2022); Giua *et al.* (2022); Musa and Basir (2021).



**Figure 6. Intensity of study of relationship models between variables in agricultural business.**

The lowest research intensity is observed in three relationship patterns: flexibility-agricultural performance, governance-agricultural performance, and decentralization of governance-agricultural performance, with each represented by only one journal (5.26%) (da-Silveira *et al.*, 2023; Brown *et al.*, 2023; Fielke *et al.*, 2020).



**Figure 7. Types of agricultural business analysis objects.**

In terms of the objects of study concerning dynamic capabilities and flexibility practices aimed at enhancing competitive agricultural businesses, four key areas are identified. Among these, the perception and behavior of

farmers and extension workers stand out as the most studied, accounting for 52.63% of the publications. This is followed by the supply chain and Smart Agriculture and Applications, each representing 21.05%. The least explored area is agricultural business stakeholders, which constitute 5.26%. A conceptual model of the intended study objects is illustrated in Figure 7.

**DISCUSSION**

The findings presented in Figure 2 indicate a decline in researchers' interest in analyzing the practices of dynamic capabilities, flexibility, and competitive performance based on information technology within public organizations. In contrast, agricultural businesses exhibit fluctuations in interest, as shown in Figure 5. Based on these patterns, it can be concluded that the discussion surrounding dynamic capabilities, flexibility, and competitive performance in agricultural enterprises is comparatively stronger than in public organizations, where a consistent decline has been observed throughout the study period.

This trend raises several speculations about the underlying reasons. For researchers, the consistency of the analyzed variables may suggest a sense of saturation, leading to a shift in focus toward other key variables that reflect ongoing dynamics in the field. However, it is important to acknowledge that this assumption is still tentative. Thus, advancing the discourse on theoretical evidence presents a challenging agenda for future research, as illustrated in Figure 8.

Based on the findings presented in Figure 3, the investigation of dynamic capabilities, flexibility, and competitive performance based on information technology in public organizations remains relatively partial. In contrast, research in agricultural businesses, as shown in Figure 6, encompasses a broader and deeper range of objects. This comprehensive approach significantly enhances the empirical understanding of dynamic capabilities, flexibility, and competitive performance within the agricultural sector.

Building on this foundation, future research should focus on agricultural business practices to better explain IT capabilities and flexibility. Following the suggestions of Al-Taweel (2023); Awwad *et al.* (2022), conducting comparative studies from various perspectives would be particularly valuable. The greater the diversity of study objects, the stronger the theoretical generalizations will be, leading to more robust implementations of practices within organizations.

The next implication pertains to the consideration of variables in both public organizations and agricultural businesses. Future research agendas should adopt a multivariable approach, with multivariate analysis being highly beneficial. As noted by Charatsari *et al.* (2023); Brown *et al.* (2023), the implications of IT in agriculture involve various stakeholders and sectors. Therefore, a multivariate approach is essential for



effectively explaining the dynamic capabilities and flexibility of IT across different contexts.

The results of the comparative synthesis between public organizations and agricultural businesses have led to the development of a conceptual model, which serves as a roadmap for future research, as presented in Figure 8. The elements outlined in this figure can be utilized as variables or dimensions for further investigation, while also emphasizing the importance of diversity in study objects to enhance the generalizability of the resulting theories.

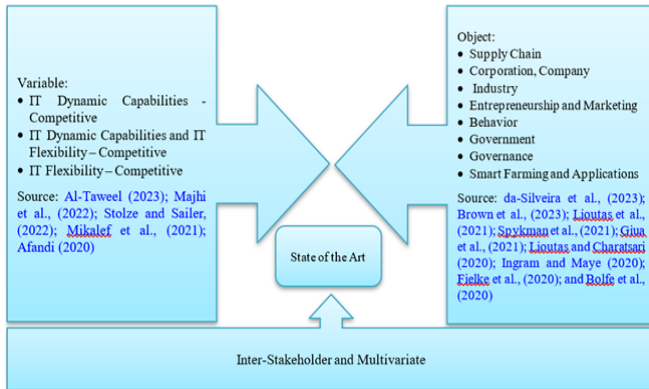


Figure 8. Conceptual framework for future research.

**Conclusion:** The investigation of dynamic capability practices, flexibility, and competitive performance based on information technology (digitalization) is more dynamic and widespread in agricultural businesses, while still recognizing the value of research in the public sector. This indicates that studying the public sector offers significant opportunities for developing new theories, particularly when employing comparative and multivariate approaches.

In contrast, the challenges faced by agricultural business practices are expected to intensify in the future, as this sector is highly influenced by external factors such as climate variability, shifts in economic structures, and unpredictable developments in information technology. Conversely, assessments in the public sector tend to focus more on the perceptions of organizational members, especially utilizing established data settings from the outset.

Future comparative studies will mark a new chapter in updating findings and addressing the research saturation that appears to have decreased quantitatively. Key recommendations include focusing on inter-stakeholder dynamics and employing multivariate approaches using the variables and objects outlined in Figure 8.

**Author Contribution:** The first author is the main contributor, while the other authors act as supervisors during the research.

**Conflict of Interest:** This study does not involve people (samples) and there are no sponsors, so there is a guarantee that this study is free from conflicts of interest.

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**Availability of data and material:** Data is openly available in the repository.

**Consent to participate:** The author has approved the contents of the manuscript for publication as stated in the author's statement.

**Informed consent:** N/A

**Consent for publication:** The author has approved the contents of the manuscript for publication as stated in the author's statement.

**SDG's addressed:** Goal 17, strong institutions and partnerships to achieve the goals.

## REFERENCES

- Afandi, W. 2020. IT flexibility, capabilities, and it-business alignment: do organizational characteristics and context matter? *Journal of Theoretical and Applied Information Technology* 98: 3837-3852.
- Al-Taweel, Z. 2023. The impact of information technology flexibility on the competitive performance of ports through the mediating role of supply chain capabilities (An analytical study on a sample of individuals working in Umm Qasr port). *The Gulf Economist* 39:201-242.
- Alwi, S., Lapipi, Jasman, L. Fariki, Asrul, Hasddin and A. Ishak. 2024. Revealing the impact of the mining industry on food crop subsector production in Indonesia; Direction of human resource development in the agricultural sector. *Journal of Global Innovations in Agricultural Sciences* 12:883-891.
- Awwad, A.S., O.M.A. Ababneh and M. Karasneh. 2022. The mediating impact of IT capabilities on the association between dynamic capabilities and organizational agility: The case of the Jordanian IT sector. *Global Journal of Flexible Systems Management* 23:315-330.
- Azzam, I., A. Alserhan, Y. Mohammad, N. Shamaileh and S. Al-Hawary. 2023. Impact of dynamic capabilities on competitive performance: A moderated-mediation model of entrepreneurship orientation and digital leadership. *International Journal of Data and Network Science* 7:1949-1962.



- Bagus, H.C., M. Ilham, A. Eliyana, T. Handriana, N. Fatimah and L.T. Herbayu. 2021. Dynamic capabilities information technology enabler for performance organization. *Library Philosophy and Practice* 4901:1-30.
- Bellon-Maurel, V., E. Lutton, P. Bisquert, L. Brossard, S. Chambaron-Ginhac, P. Labarthe, P. Lagacherie, F. Martignac, J. Molenat, N. Parisey, S. Picault, I. Piot-Lepetit and I. Veissier. 2022. Digital revolution for the agroecological transition of food systems: A responsible research and innovation perspective. *Agricultural Systems* 203:103524.
- Boyd, B.K and A.M. Solarino. 2016. Ownership of corporations: A review, synthesis, and research agenda. *Journal of Management* 42:1282-1314.
- Brown, C., A. Regan and S. van der Burg. 2023. Farming futures: Perspectives of Irish agricultural stakeholders on data sharing and data governance. *Agriculture and Human Values* 40:565-580.
- Carlborg, P., D. Kindström and C. Kowalkowski. 2014. The evolution of service innovation research: A critical review and synthesis. *The Service Industries Journal* 34:373-398.
- Cash, P.J. 2018. Developing theory-driven design research. *Design Studies* 56:84-119.
- Charatsari, C., A. Michailidis, M. Francescone, M.D. Rosa, D. Aidonis, L. Bartoli, G.L. Rocca, L. Camanzi and E.D. Lioutas. 2023. Do agricultural knowledge and innovation systems have the dynamic capabilities to guide the digital transition of short food supply chains? *Information* 15:1-13.
- Charatsari, C., E.D. Lioutas, A. Papadaki-Klavdianou, A. Michailidis and M. Partalidou. 2022. Farm advisors amid the transition to agriculture 4.0: Professional identity, conceptions of the future and future-specific competencies. *Sociologia Ruralis* 62:335-362.
- Chukwuere, J.E. 2023. Exploring literature review methodologies in information systems research: A comparative study. *Education & Learning in Developing Nations* 1:74-82.
- Conboy, K., P. Mikalef, D. Dennehy and J. Krogstie. 2020. Using business analytics to enhance dynamic capabilities in operations research: A case analysis and research agenda. *European Journal of Operational Research* 28: 656-672.
- Da-Silveira, F., S.L.C. da-Silva, F.M. Machado, J.G.A. Barbedo and F.G. Amaral. 2023. Farmers' perception of barriers that difficult the implementation of agriculture 4.0. *Agricultural Systems* 208:103656.
- Diaby, A and K. Sylwester. 2014. Bureaucratic competition and public corruption: Evidence from transition countries. *European Journal of Political Economy* 35:75-87.
- Fadhilah, A.N and A.P. Subriadi. 2021. Measuring dynamic capabilities of IT resources. *International Journal on Advanced Science, Engineering and Information Technology* 11:1132-1142.
- Fariki, L., M. Natsir, M. Mustarum, L.D. Suriadi, Hasddin and W. Sultraeni. 2024. Assessing the impact of ICT infrastructure on card-based non-cash transaction volumes in Indonesia. *Journal of Global Innovations in Agricultural Sciences* 12:545-554.
- Fielke, S., B. Taylor and E. Jakku. 2020. Digitalisation of agricultural knowledge and advice networks: A state-of-the-art review. *Agricultural Systems* 180:102763.
- Galvan, J.L and M.C. Galvan. 2017. Writing literature reviews: A guide for students of the social and behavioral sciences, 7nd ed. Routledge., New York.
- Giua, C., V.C. Materia and L. Camanzi. 2022. Smart farming technologies adoption: Which factors play a role in the digital transition? *Technology in Society* 68:101869.
- Goh, J. M and A.E. Arenas. 2020. IT value creation in public sector: How IT-enabled capabilities mitigate tradeoffs in public organisations. *European Journal of Information Systems* 29:25-43.
- Gong, Y., J. Yang and X. Shi. 2020. Towards a comprehensive understanding of digital transformation in government: Analysis of flexibility and enterprise architecture. *Government Information Quarterly* 37:101487.
- Han, J. H., Y. Wang and M. Naim. 2017. Reconceptualization of information technology flexibility for supply chain management: An empirical study. *International Journal of Production Economics* 187:196-215.
- Jahan, N., S. Naveed, M. Zeshan and M.A. Tahir. 2016. How to conduct a systematic review: A narrative literature review. *Cureus* 8:1-8.
- Kaur, V. and V. Mehta. 2016. Knowledge-based dynamic capabilities: A new perspective for achieving global competitiveness in IT sector. *Pacific Business Review International* 1:95-106.
- Kaur, V and V. Mehta. 2017. Dynamic capabilities for competitive advantage. *Paradigm* 21:31-51.
- Kosztján, Z.T., T. Csizmadia and A.I. Katona. 2021. Similar-systematic iterative multilayer review method. *Journal of Informetrics* 15:1-19.
- Kumar, R.L. and A.C. Stylianou. 2014. A process model for analyzing and managing flexibility in information systems. *European Journal of Information Systems* 23:151-184.
- Kvam, G.T., R.M.B. Hårstad and E.P. Stræte. 2022. The role of farmers' microAKIS at different stages of uptake of digital technology. *Journal of Agricultural Education and Extension* 28:671-688.
- Lame, G. 2019. Systematic literature reviews: an introduction, ICED19. In: *Proceedings of the 22<sup>nd</sup>, International Conference on Engineering Design*





- (ICED19), Delf. The Netherlands, 5-8 August 2019 pp. 1633-1642.
- Lim, W.M., S. Kumar and F. Ali. 2022. Advancing knowledge through literature reviews: 'what', 'why', and 'how to contribute. *The Service Industries Journal* 42:481-513.
- Lioutas, E.D. and C. Charatsari. 2022. Innovating digitally: The new texture of practices in agriculture 4.0. *Sociologia Ruralis* 62:250-278.
- Lioutas, E.D., C. Charatsari and M.D. Rosa. 2021. Digitalization of agriculture: A way to solve the food problem or a trolley dilemma? *Technology in Society* 67: 101744.
- Luft, J.A., S. Jeong, R. Idsardi and G. Gardner. 2022. Literature reviews, theoretical frameworks, and conceptual frameworks: An introduction for new biology education researchers. *CBE-Life Sciences Education* 21: 1-10.
- Ma, F., F. Khan, K.U. Khan and S.X. Yun. 2021. Investigating the impact of information technology, absorptive capacity, and dynamic capabilities on firm performance: An empirical study. *Sage Open* 11:1-18.
- Majhi, S. G., A. Anand, A. Mukherjee and N.P. Rana. 2022. The optimal configuration of IT-enabled dynamic capabilities in a firm's capabilities portfolio: A strategic alignment perspective. *Information Systems Frontiers* 24:1435-1450.
- Mikalef, P. 2014. Developing it-enabled dynamic capabilities: A service science approach. *Lecture Notes in Business Information Processing* 194:87-100.
- Mikalef, P. 2018. IT-enabled dynamic capabilities, environmental uncertainty, and competitive performance: A configurational approach., IR, Americas Conference on Information Systems 2018. *Digital Disruption, AMCIS 2018, New Orleans, USA* pp. 1-10.
- Mikalef, P., M. Boura, G. Lekakos and J. Krogstie. 2019. Big data analytics capabilities and innovation: The mediating role of dynamic capabilities and moderating effect of the environment. *British Journal of Management* 30:272-298.
- Mikalef, P and A. Pateli. 2017. Information technology-enabled dynamic capabilities and their indirect effect on competitive performance: Findings from PLS-SEM and fsQCA. *Journal of Business Research* 70:1-16.
- Mikalef, P., A. Pateli and R. van-de-Wetering. 2021. IT architecture flexibility and IT governance decentralisation as drivers of IT-enabled dynamic capabilities and competitive performance: The moderating effect of the external environment. *European Journal of Information Systems* 30:512-540.
- Mohammad, W.M.W and S. Wasiuzzaman. 2021. Environmental, social and governance (ESG) disclosure, competitive advantage and performance of firms in Malaysia. *Cleaner Environmental Systems* 2:100015.
- Musa, S.F.P.D and K.H. Basir. 2021. Smart farming: Towards a sustainable agri-food system. *British Food Journal* 123:3085-3099.
- Palmatier, R.W., M.B. Houston and J. Hulland. 2018. Review articles: Purpose, process, and structure. *Journal of the Academy of Marketing Science* 46:1-5.
- Pappas, I. O., P. Mikalef, M. N. Giannakos, J. Krogstie and G. Lekakos. 2017. Social media and analytics for competitive performance: A conceptual research framework. *Lecture Notes in Business Information Processing* 263:209-218.
- Perry, A and N. Hammond. 2002. Systematic review: The experience of a PhD student. *Psychology Learning and Teaching* 2:32-35.
- Persson, A and J. Stirna. 2015. Advanced information systems engineering workshops, In: *Proceedings CAiSE 2015 International Workshops*, 8-9 Jun. 2015. Stockholm, Sweden pp. 53-63.
- Pursell, E and N. McRae. 2020. How to perform a systematic literature review: a guide for healthcare researchers, practitioners and students. Springer., Berlin.
- Ravitch, S.M and M. Riggan. 2016. Reason & rigor: How conceptual frame-works guide research. Sage., Los Angeles, USA.
- Rodell, J.B., H. Breitsohl., M. Schröder and D.J. Keating. 2016. Employee volunteering: A review and framework for future research. *Journal of Management* 42:55-8.
- Saputra, Y. J., L.O.M. Harafah, A.W. Nusantara, M. Masaruddin, M.Y. Balaka, F. Saranani, Armawaddi., Lapipi and H. Hasddin. 2024. Catalyzing development in agricultural-based regions: Exploring the impact of business licensing, governance, and public trust in the agricultural logistics. *Journal of Global Innovations in Agricultural Sciences* 12:595-603.
- Sio, U.N., K. Kotovsky and J. Cagan. 2015. Fixation or inspiration? A meta-analytic review of the role of examples on design processes. *Design Studies* 39:70-99.
- Shukla, S.K and Sushil. 2020. Evaluating the practices of flexibility maturity for the software product and service organizations. *International Journal of Information Management* 50:71-89.
- Snyder, H. 2019. Literature review as a research methodology: An overview and guidelines. *Journal of Business Research* 104:333-339.
- Stolze, A and K. Sailer. 2022. Advancing HEIs' third-mission through dynamic capabilities: The role of leadership and agreement on vision and goals. *Journal of Technology Transfer* 47:580-604.
- Sutherland, L.A and P. Labarthe. 2022. Introducing 'microAKIS': A farmer-centric approach to understanding the contribution of advice to agricultural innovation. *Journal of Agricultural Education and Extension* 28:525-547.



- Tricco, A.C., J. Antony, W. Zarin, L. Strifler, M. Ghassemi, J. Ivory and S.E. Straus. 2015. A scoping review of rapid review methods. *BMC Medicine* 13:1-15.
- Tseng, S. M and P. S. Lee. 2014. The effect of knowledge management capability and dynamic capability on organizational performance. *Journal of Enterprise Information Management* 27:158–179.
- Van de Wetering, R and P. Mikalef. 2017. The effect of strategic alignment of complementary IT and organizational capabilities on competitive firm performance. *Lecture Notes in Business Information Processing* 303:115-126.
- Waheed, A and Q. Zhang. 2022. Effect of CSR and ethical practices on sustainable competitive performance: A case of emerging markets from stakeholder-theory perspective. *Journal of Business Ethics* 175:837-855.
- Wibisono, H and M. Supoyo. 2023. Business transformation: Exploring dynamic capabilities, technological innovation, and competitive advantage through the lens of resource-based view in construction services companies. *Journal of Contemporary Administration and Management* 1:263-270.
- Zscheischler, J., R. Brunsch., S. Rogga and R.W. Scholz. 2022. Perceived risks and vulnerabilities of employing digitalization and digital data in agriculture—socially robust orientations from a transdisciplinary process. *Journal of Cleaner Production* 358:132034.

