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Advancing scientific inquiry through data reuse: Necessary condition analysis with archival data

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Abstract

This article discusses the importance of reusing existing data in research. In addition to reuse data for replication of earlier findings and for answering extended or new research questions, we propose a third application of data reuse: studying the phenomenon from an alternative causal perspective. We focus on the reuse of data with a necessity causal perspective (“if not X, then not Y”) as employed in necessary condition analysis (NCA). Such reuse of data offers additional insights compared with those obtained from the conventional probabilistic causal perspective (“if X, then probably Y”) as employed in regression analysis. NCA is gaining recognition in various fields, including strategic management. Reusing data for conducting NCA is an efficient way to get new causal insights. We provide recommendations on how to use NCA with existing data and emphasize the importance of transparency when reusing data.

KEYWORDS

archival data, causal perspective, data reuse, extension, NCA, necessary condition analysis, replication

JEL CLASSIFICATION

C12, C18, M10

1 | INTRODUCTION

The ever-expanding volume of available data in today's research landscape presents an intriguing paradox. While the drive for novel data collection remains undiminished, the benefits of reusing existing data are increasingly being acknowledged. Not only does data reuse ensure efficient validation and replication of earlier findings, it also allows for answering extended or novel research questions (Köhler and Cortina, 2023). Yet, the academic community often fails to appreciate the full potential of such efforts. Block et al.'s (2022) recent examination revealed that replication studies that do not reproduce original outcomes are less cited, indicating a potential confirmation bias. This weakens the important role of replication in strengthening scientific validity.

Replication in strategic management, as highlighted by Bettis et al. (2016), is not a massive exercise. From exact data and method replication to merely echoing the conclusions of a previous study, the spectrum of replication is vast. However, the most stringent form of replication—leveraging identical data and research methodology—can be instrumental in identifying anomalies in the original study or even pointing to the implications of the statistical tools deployed. Data reuse permits the use of different research methods, offering varied insights. And, as statistical methodologies evolve, some conclusions might stand challenged.

Beyond replication, reusing existing data facilitates probing into extended or new research dimensions, thereby economizing on time, funding, and effort inherent in fresh data collection processes.

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Yet, reusing the same dataset across multiple publications needs to be done with care. When multiple studies are published using the same data and this appears to be done solely for amplifying academic output without genuine intent of discovery, a practice also known as “salami slicing,” this may raise ethical concerns (Beautils & Karlsson, 2013; Van Raaij, 2018).

This article aims to contribute to the methodological debate on data reuse by introducing a third dimension to it: adopting an alternative causal perspective, namely the necessary condition analysis (NCA; Dul, 2016). NCA is a method that uses necessity logic to analyze data. It provides a new perspective on cause–effect relationships. Traditionally, data are analyzed through a probabilistic lens, emphasizing the average relationship between causative and resultant variables. By embracing a necessity perspective, it is possible to identify indispensable elements without which a particular outcome remains elusive. Such an approach offers deeper insights, shifting the focus from general probability to pinpointing critical conditions. The NCA approach is relevant for theory and practice. If a necessary condition is identified, it should be part of any theory that intends to predict an outcome. If the necessary condition is not part of the theory there is a risk of erroneous predictions as the outcome cannot exist if the condition is absent. An identified necessary condition also helps practitioners to prioritize their actions. If a necessary condition is not in place, the outcome cannot exist, and the necessary condition becomes a bottleneck if it is absent. Any action that is not focused on the bottleneck will be ineffective and a waste of effort.

This discussion article focuses on reusing data with NCA, rather than on discussing the method of NCA itself (we refer the reader who is not familiar with NCA to several sources). The article is structured as follows. First, we present a discussion around replication studies and data reuse. Then, we explain necessity causality and present the opportunities provided by NCA. Finally, we offer clear guidance and advice to scholars interested in data reuse with NCA. We conclude the article with editorial reflections on what lies next for data reuse in the area of strategic change.

2 | DATA REUSE AND REPLICATION STUDIES

Researchers often choose to reuse existing data to answer their research questions. An obvious application is to validate earlier findings by using the same research question, data, and methodology of the original study to *replicate previous studies*. Reproducing earlier findings is an essential aspect of scientific research and contributes to the credibility of scientific knowledge (Köhler and Cortina, 2023). While such replication studies are recognized as vital for the advancement of knowledge in strategic management (Bettis et al., 2016; Ethiraj et al., 2016), they face challenges in acceptance and publication (Block et al., 2022; Tipu & Ryan, 2021). Indeed, a significant number of journals either implicitly or explicitly discourage replication studies. Out of 600 journals analyzed, only <5% were explicitly open to replication studies, while almost 40% implicitly discouraged them

(Tipu & Ryan, 2021). Block et al. (2022) indicate that replication studies that do not reproduce the original study's outcomes are cited less frequently than those that do. This reflects the infrequent occurrence of nonreplicated outcomes, suggesting a potential confirmation bias in management research. Essentially, the community mainly notices replication studies that affirm the original study's results. There appears to be a pressing need for a shift in academic culture and editorial policies to embrace and promote replication studies to advance our discipline.

In discussing the typology of replication studies in strategic management research, Bettis et al. (2016) point out how ideas about replication vary from employing the identical data and analysis as a previous study to generating outcomes broadly consistent with earlier research, with numerous variations in the middle. When it comes to data reuse, the most specific type of replication employs the same data and research methodology as the initial study. Such replication can indicate potential errors in the original study or that the results might be influenced by the statistical tools used. Another form is when the consistency of previous study outcomes using different research approaches is tested with identical data, providing insights into the resilience of the initial findings to different tools, models, and techniques. Due to advancements in statistical methods, it is possible that some previous results may not be replicated.

Data can also be reused for answering *extended or novel research questions*. For example, by adding control variables, mediators, or moderators to the original analysis, a deeper understanding of the phenomena of interest can be achieved. By analyzing new variables that were not analyzed in the original study, completely new research questions can be addressed. Reusing data to answer new research questions is an efficient way of doing research because it avoids the need for new data collection, which can be expensive, time-consuming, and labor-intensive. In any research field, reusing data to answer new research questions is possible. The researchers' own dataset can be reused, datasets can be obtained from other researchers, or from recognized bodies like the World Bank, which offers a wealth of economic, financial, and social datasets related to global development (<https://data.worldbank.org/>), or the Data Portal of the European Union that offers datasets related to EU policies, initiatives, and programs (<https://data.europa.eu/>). Furthermore, data can be found on platforms where researchers share their datasets, such as Harvard's Dataverse (<https://dataverse.org/>) or Figshare (<https://figshare.com/>). Moreover, several journals exist that describe and share data, such as Data in Brief (<https://www.journals.elsevier.com/data-in-brief>).

Reusing one's own data for the sole goal of *enhancing academic productivity*, for example, answering the same research question in different publications or by slicing datasets, is, instead, a questionable research practice (Beautils & Karlsson, 2013; Van Raaij, 2018).

In the following section, we propose a third way of using existing data: reuse data with a *new causal perspective* compared with the causal perspective that was used in the original analysis. The goal is to get a deeper understanding of the phenomenon of interest. Data are commonly analyzed with a probabilistic causal perspective in mind. For example, regression-based data analysis identifies “important” variables (with significant regression coefficients), and when inferring

causality, the important variable is assumed to increase the *probability* of the outcome. This causal perspective is common in quantitative research and allows making statements about the average relationship between the cause variable (X) and effect variable (Y) in a group of cases. By employing a *necessity* causal perspective; however, a cause X may be identified as a critical (essential, necessary) factor for the outcome Y that applies in each single case. The cause must be present to have the outcome. In other words, necessary variables must be present at a certain level to enable a certain level of the outcome, independent of the rest of the causal structure. If the right level is not present, the outcome will not occur, and the variable works as a bottleneck or constraint for the outcome. In the next section, we delve deeper into the concept of necessity causality.

3 | NECESSITY CAUSALITY AND NCA

NCA is a method that employs necessity causality when analyzing data. The value of this causal perspective and NCA is widely acknowledged (e.g., Aguinis et al., 2020; Bergh et al., 2022), and the application of NCA in the business and management literature is rapidly growing (Dul et al., 2023). The method has been used as a stand-alone method, in combination with regression-based analysis such as multiple regression analysis or structural equation modeling, or in combination with qualitative comparative analysis (QCA). NCA has also been applied in the field of strategic management. Examples discussed in Dul et al. (2023) are Bouncken et al. (2020a), Cheng and Jiang (2022), Du and Kim (2021), Fredrich et al. (2019, 2022), Klimas et al. (2022), Ortigueira-Sánchez et al. (2022), Tho (2018, 2019), and Wang et al. (2023). Other recent examples are Bouncken et al. (2023), Bouzari et al. (2023), Conway (2019), Delgosha et al. (2021), Frezatti et al. (2022), Oyadomari et al. (2023), Qu et al. (2023), and Singh et al. (2023). Also, empirical studies and reviews in strategic management often recommend the use of necessity causal logic and NCA for future research (e.g., Bouncken, Fredrich, Ritala, & Kraus, 2020; Deist et al., 2023; Klimas et al., 2023; Lexutt, 2020; Swab et al., 2020).

The academic literature repeatedly describes causal relationships in terms of necessity, but the necessity of the relationship is not tested, or tested with a method that cannot test necessity (theory-method misfit). For example, in the field of operations and supply chain management, Bokrantz and Dul (2023) evaluated 157 theoretical necessity claims made in five top-tier journals of the field, showing that 58% of the claims were not tested, and if tested, 94% were not tested with a proper method [Correction added on 15 November 2023, after first publication: Citation to Bokrantz and Dul et al. (2023) has been corrected to Bokrantz and Dul (2023) in this sentence. The relevant reference details have been added to the reference section.]. In the field of strategic management, oftentimes untested theoretical necessity claims are also made, and this also applies to classic theories in this field. For example, in “The competitive advantage of nations” Porter (1998) states: “Advantages throughout the ‘diamond’ are necessary for achieving and sustaining competitive success” (p. 73), and Wernerfelt’s (1984) description of the resource-based view of the firm claims: “Briefly, the idea is, that to

enter the computer industry, it is necessary to first develop related skills in chips, an industry into which the Japanese could enter more easily, since they already possessed some of the required skills” (p. 179). Also, Teece’s description of dynamic capabilities is replete with necessary condition claims such as “Competences can provide competitive advantage and generate rents *only if* they are based on a collection of routines, skills, and complementary assets that are difficult to imitate” (Teece et al., 1997, p. 524, emphasis added) or “This paper draws on the social and behavioral sciences in an endeavor to specify the nature and micro-foundations of the capabilities necessary to sustain superior enterprise performance in an open economy with rapid innovation and globally dispersed sources of invention, innovation, and manufacturing capability.” (Teece, 2007, p. 1319). Yet, empirical evidence of these theories is mainly based on regression-based methods, evaluating the average effect relationship and not the necessity relationship that is claimed. Therefore, reusing datasets to test for necessity can be a major theoretical and empirical contribution to the field.

4 | GUIDANCE FOR DATA REUSE WITH NCA

By using NCA with existing data, it is possible to efficiently study a new research question or revisit an ongoing debate with a new causal perspective. This section guides researchers to make such a contribution.

Several steps are needed for using necessity causal logic and applying NCA with existing data (Figure 1).

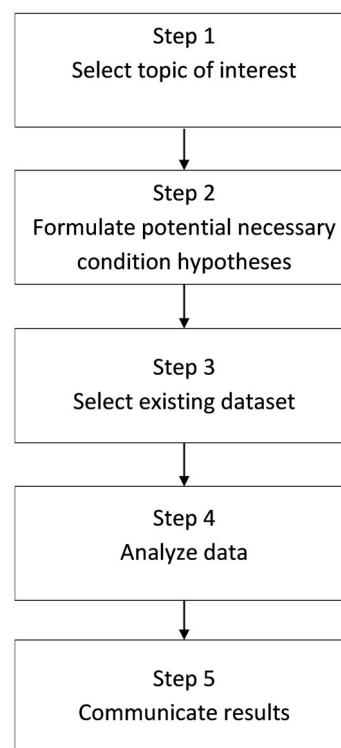


FIGURE 1 Steps for conducting necessary condition analysis with existing data (adapted from Dul, 2020).

4.1 | Select the topic of interest

In the first step, the researcher selects the substantive topic to be analyzed from the perspective of necessity. Since any research area has relevant necessary conditions (Goertz & Starr, 2002), the topic selection is unlimited and can be driven by the researcher's interest.

4.2 | Formulate potential necessary condition hypotheses

In the second step, one or more potential necessary condition hypotheses are formulated. Explicit or implicit suggestions for necessary condition hypotheses may be present in the topic's literature. If not, the researcher can be creative and imaginary to formulate a necessary condition hypothesis. First, an outcome of interest (Y) is selected. Next, known or expected factors that may influence the outcome (X's) are evaluated one by one in a thought experiment by raising the question: can Y exist without X? Finally, the answer helps to formulate the necessary condition hypothesis: the thought experiment may reject the necessity hypothesis (it is possible to have Y without X), may keep the hypothesis (when there is Y there is also X), may keep the hypothesis but only by allowing a few exceptions or may keep the hypothesis by limiting the theoretical domain of the hypothesis (boundary conditions) to exclude the exceptions. This thought exercise may lead to the formulation of necessary condition hypotheses worthy of empirical evaluation.

4.3 | Select existing dataset

In the third step, an existing dataset is selected that includes scores for the variables X and Y that are part of the hypothesis. Because a necessary condition operates in isolation from the rest of the causal structure, there is no need to include control variables or potential confounders in the analysis. The data can be any quantitative scores that represent X and Y of the hypothesis. Examples include scores from Likert scales, construct scores from factor analysis, construct scores from measurement models of structural equation modeling, set membership scores of QCA, and so forth. Data are the input to NCA as NCA does not have a measurement model. NCA does not pose new requirements for the data, which makes the method attractive for data reuse. The quality of the results of NCA depends on the quality of the data, which means that the researcher should be aware of the quality of the sampling procedure that was used during the data collection and the reliability and validity of the measurement scores. Data reuse for NCA can be done in a separate study or in a combined multi-method study where the same dataset is used for all methods.

4.4 | Analyze data

Several guidelines exist for conducting the data analysis of NCA (Dul, 2020, 2021). In short, the researcher first makes and visually

inspects an XY scatter plot and observes whether there is an empty space in the expected corner. The expected corner depends on the formulation of the necessary condition hypothesis. For example, if the presence or a high value of X is necessary for the presence or a high value of Y, then the expected empty space is in the upper-left corner. Next, depending on the type of data (discrete or continuous) and other considerations, a specific ceiling line is selected, which serves as the borderline between the empty space and the space where observations are possible. After deciding on the threshold values for the *p*-value (usually .05) and the necessity effect size (usually .10), the NCA software is used to draw the ceiling line, estimate the effect size, and estimate the *p*-value. If a significant necessary condition is found, a subsequent bottleneck analysis can be done with the software using NCA's bottleneck table.

4.5 | Communicate results

Both "positive" and "negative" results of the hypothesis testing approach are interesting for communication with others, for example, in publications. A researcher's acceptance of the hypothesis that X is necessary for Y means that condition X must always be present to have Y (must have). If a theory wants to predict outcome Y, the theory must include the necessary condition. If in practice, an outcome Y is desirable, the necessary condition must be in place at the right level, as can be seen in the bottleneck analysis. If not, the outcome will not occur, and acting on other factors than the bottleneck is a waste. A researcher's rejection of the hypothesis that X is necessary for Y is interesting as well. It means that X may be important, but not necessary for Y (nice to have). It is possible to achieve Y without X because the absence of X could be compensated by another factor. For communication of the results, the researcher can follow existing guidelines for reporting NCA (Dul et al., 2023).

Moreover, best practices related to data reuse across multiple publications should be followed (Van Raaij, 2018). Most importantly, the principles of Transparency, Consistency, and Accumulation should be honored. In the case of NCA with archival data, these principles would translate into at least the following best practices:

1. Provide full transparency that the data have been used before in earlier analyses.
2. Provide transparency on the origins of the data, including details such as age (especially when the data is somewhat older).
3. Operationalize NCA's X and Y concepts in a way that is consistent with earlier analyses, especially when comparing the NCA results to the results of earlier analyses.
4. Where inconsistencies arise, provide transparency about the reasons behind such inconsistencies.
5. Write a new publication in such a way that it builds on earlier work that uses the data, ensuring that the accumulation of knowledge takes place.

5 | CONCLUSIONS AND FUTURE RESEARCH QUESTIONS

The call for innovative research often drowns the echoes of revisiting and reinterpreting the already discovered, and yet, as our exploration suggests, there lies immense potential in reusing existing data through alternative lenses. NCA can offer new insights when single datasets are approached with diverse causal perspectives. While replication improves the foundations of our scientific endeavors and addressing extended research questions deepens our understanding, employing NCA showcases how existing data can be a source of novel causal insights. We call to researchers, particularly in the fields related to strategic management, to recalibrate their stance on data reuse, not only for efficiency but also for the deeper understanding it can provide.

We believe that there are many opportunities to apply necessity causal logic and NCA on the topic of “strategic change,” providing not only new theoretical understanding but also a more fine grained and practically applicable knowledge. For example, scholars might explore how specific organizational structures act as necessary conditions for successful strategic change in multinational corporations (Loonam et al., 2018). Another intriguing avenue could be to determine if there is a necessary threshold of leadership commitment required to drive strategic change in startups versus established firms (Samara et al., 2023). The role of organizational culture as a necessary condition in the adaptation and adoption of strategic change initiatives is also worth investigating (Mendy, 2020). Additionally, questions arise about whether specific technological infrastructures are indispensable for digital transformations within traditional industries (Balakrishnan & Das, 2020). Stakeholder engagement's role as a necessary precondition for strategic shifts in sustainability-focused enterprises is another area of interest (Kallmuenzer et al., 2023). Delving into the necessary conditions in terms of employee skills and competencies for the successful implementation of radical versus incremental strategic changes can provide valuable insights. It may also be insightful to determine if there is a necessary level of market maturity required for firms to pivot their strategies in emerging markets (Siaw et al., 2022). External market pressures, such as regulatory changes or economic downturns, might serve as necessary triggers for strategic realignments. Furthermore, understanding if there are specific internal communication strategies essential for gaining buy-in during major strategic overhauls is crucial. Finally, examining how the presence of certain innovation ecosystems acts as a necessary foundation for firms looking to shift towards more disruptive strategies can shed light on the prerequisites for strategic innovation.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Not applicable.

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REFERENCES

- Aguinis, H., Ramani, R. S., & Cascio, W. F. (2020). Methodological practices in international business research: An after-action review of challenges and solutions. *Journal of International Business Studies*, 51(9), 1593–1608.
- Balakrishnan, R., & Das, S. (2020). How do firms reorganize to implement digital transformation? *Strategic Change*, 29(5), 531–541.
- Beaufils, P., & Karlsson, J. (2013). Legitimate division of large datasets, salami slicing and dual publication. Where does a fraud begin? *Orthopaedics & Traumatology: Surgery & Research*, 2(99), 121–122.
- Bergh, D. D., Boyd, B. K., Byron, K., Gove, S., & Ketchen, D. J., Jr. (2022). What constitutes a methodological contribution? *Journal of Management*, 48(7), 1835–1848.
- Bettis, R. A., Helfat, C. E., & Shaver, J. M. (2016). The necessity, logic, and forms of replication. *Strategic Management Journal*, 37(11), 2193–2203.
- Block, J. H., Fisch, C., Kanwal, N., Lorenzen, S., & Schulze, A. (2022). Replication studies in top management journals: An empirical investigation of prevalence, types, outcomes, and impact. *Management Review Quarterly*, 73, 1109–1134.
- Bokrantz, J., & Dul, J. (2023). Building and testing necessity theories in supply chain management. *Journal of Supply Chain Management*, 59, 48–65.
- Bouncken, R. B., Fredrich, V., & Kraus, S. (2020). Configurations of firm-level value capture in cooptation. *Long Range Planning*, 53(1), 101869.
- Bouncken, R. B., Fredrich, V., Ritala, P., & Kraus, S. (2020). Value-creation-capture-equilibrium in new product development alliances: A matter of cooptation, expert power, and alliance importance. *Industrial Marketing Management*, 90, 648–662.
- Bouncken, R. B., Fredrich, V., Sinkovics, N., & Sinkovics, R. R. (2023). Digitalization of cross-border R&D alliances: Configurational insights and cognitive digitalization biases. *Global Strategy Journal*, 13, 281–314.
- Bouzari, P., Gyenge, B., Ebrahimi, P., & Fekete-Farkas, M. (2023). Problem solving and budget allocation of SMEs: Application of NCA approach. *Computation*, 11(3), 48.
- Cheng, W., & Jiang, Y. (2022). Falling in the same predicament again? A network embeddedness perspective of organizational failure recidivism in special treatment firms. *Management Decision*, 61(3), 815–837.
- Conway, E. (2019). Should we expect exemplary integrated reporting to increase Organisational ESG ratings? In D. Crowther, S. Seifi, & T. Wond (Eds.), *Responsibility and governance* (pp. 135–162). Springer.
- Deist, M. K., McDowell, W. C., & Bouncken, R. B. (2023). Digital units and digital innovation: Balancing fluidity and stability for the creation, conversion, and dissemination of sticky knowledge. *Journal of Business Research*, 161, 113827.
- Delgosha, M. S., Saheb, T., & Hajiheydari, N. (2021). Modelling the asymmetrical relationships between digitalisation and sustainable competitiveness: A cross-country configurational analysis. *Information Systems Frontiers*, 23, 1317–1337.
- Du, Y., & Kim, P. H. (2021). One size does not fit all: Strategy configurations, complex environments, and new venture performance in emerging economies. *Journal of Business Research*, 124, 272–285.
- Dul, J. (2016). Necessary condition analysis (NCA) logic and methodology of “necessary but not sufficient” causality. *Organizational Research Methods*, 19(1), 10–52.
- Dul, J. (2020). *Conducting necessary condition analysis*. Sage.
- Dul, J. (2021). Advances in necessary condition analysis. https://bookdown.org/ncabook/advanced_nca2/
- Dul, J., Hauff, S., & Bouncken, R. B. (2023). Necessary condition analysis (NCA): Review of topics in recent research and suggestions for good practice. *Review of Managerial Science*, 17(2), 683–714.

- Ethiraj, S. K., Gambardella, A., & Helfat, C. E. (2016). Replication in strategic management. *Strategic Management Journal*, 37(11), 2191–2192.
- Fredrich, V., Bouncken, R. B., & Kraus, S. (2019). The race is on: Configurations of absorptive capacity, interdependence and slack resources for interorganizational learning in coopetition alliances. *Journal of Business Research*, 101, 862–868.
- Fredrich, V., Bouncken, R. B., & Tiberius, V. (2022). Dyadic business model convergence or divergence in alliances? A configurational approach. *Journal of Business Research*, 153, 300–308.
- Frezatti, F., Mucci, D. M., & Bido, D. D. S. (2022). Structure of planning and control artifacts and their accuracy in Brazilian family businesses. *BAR-Brazilian Administration Review*, 19(3), e210080.
- Goertz, G., & Starr, H. (2002). *Necessary conditions: Theory, methodology, and applications*. Rowman & Littlefield.
- Kallmuenzer, A., Kraus, S., Bouncken, R., & Reinwald, D. (2023). Ecological and social sustainable change through corporate social responsibility: The enabling role of employees. *Strategic Change*, 32(4–5), 153–166.
- Klimas, P., Czakon, W., & Fredrich, V. (2022). Strategy frames in coopetition: An examination of coopetition entry factors in high-tech firms. *European Management Journal*, 40(2), 258–272.
- Klimas, P., Sachpazidu, K., & Stańczyk, S. (2023). The attributes of cooperative relationships: What do we know and not know about them? *European Management Journal* (in press).
- Köhler, T., & Cortina, J. M. (2023). Constructive replication, reproducibility, and generalizability: Getting theory testing for JOMSR right. *Journal of Management Scientific Reports*, 27550311231176016.
- Lexutt, E. (2020). Different roads to servitization success—a configurational analysis of financial and non-financial service performance. *Industrial Marketing Management*, 84, 105–125.
- Loonam, J., Eaves, S., Kumar, V., & Parry, G. (2018). Towards digital transformation: Lessons learned from traditional organizations. *Strategic Change*, 27(2), 101–109.
- Mendy, J. (2020). Demystifying misted mirrors to investigate emerging people issues in SMEs: Implications for strategic change. *Strategic Change*, 29(1), 35–45.
- Ortigueira-Sánchez, L. C., Welsh, D. H., & Stein, W. C. (2022). Innovation drivers for export performance. *Sustainable Technology and Entrepreneurship*, 1(2), 100013.
- Oyadomari, J. C. T., Bido, D. D. S., Mendonça Neto, O. R. D., Aguiar, A. B. D., & Dultra-de-Lima, R. G. (2023). Relationships among strategically aligned performance indicators, controls, and performance. *Revista Contabilidade & Finanças*, 34(91), e1618.
- Porter, M. E. (1998). *The competitive advantage of nations*. The Free Press.
- Qu, X., Qin, X., & Wang, X. (2023). Construction of frugal innovation path in the context of digital transformation: A study based on NCA and QCA. *Sustainability*, 15(3), 2158.
- Samara, I., Nandakumar, M. K., O'Regan, N., & Almoumani, H. M. (2023). Governance diversity: Its impact on strategic variation and results. *Strategic Change*, 32(1), 29–42.
- Siaw, D., Botchie, D., & Sarpong, D. (2022). A review of micro-practices in commodity value chains in the global south. *Strategic Change*, 31(1), 89–98.
- Singh, A. K., Jain, N. K., Sharma, M. G., & Nigam, S. (2023). Reconceptualization of absorptive capacity as potential and realized absorptive capacity for project-based organizations. *International Journal of Project Management*, 41(2), 102449.
- Swab, R. G., Sherlock, C., Markin, E., & Dibrell, C. (2020). “SEW” what do we know and where do we go? A review of socioemotional wealth and a way forward. *Family Business Review*, 33(4), 424–445.
- Teece, D. J. (2007). Explicating dynamic capabilities: The nature and micro-foundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28, 1319–1350.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18, 509–533.
- Tho, N. D. (2018). Firm capabilities and performance: A necessary condition analysis. *Journal of Management Development*, 37(4), 322–332.
- Tho, N. D. (2019). Strategic orientations and firm innovativeness: A necessary condition analysis. *Baltic Journal of Management*, 14(3), 427–442.
- Tipu, S. A. A., & Ryan, J. C. (2021). Are business and management journals anti-replication? An analysis of editorial policies. *Management Research Review*, 45(1), 101–117.
- Van Raaij, E. M. (2018). Déjà lu: On the limits of data reuse across multiple publications. *Journal of Purchasing and Supply Management*, 24(3), 183–191.
- Wang, G., Zhang, H., Zeng, S., Meng, X., & Lin, H. (2023). Reporting on sustainable development: Configurational effects of top management team and corporate characteristics on environmental information disclosure. *Corporate Social Responsibility and Environmental Management*, 30, 28–52.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5, 171–180.

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