

Analysis of human capital as moderating role on the strategic orientation, operational resilience, and innovation capability to organizational longevity mediated by innovation performance

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Abstract: One of the focuses of the 2030 Sustainable Development Goals (SDGs) is the creation and distribution of good quality education by paying attention to sustainable school organizations. Sustainability is an interesting issue from a literature perspective. Research on sustainability is of interest because not many organizations are immune to disruption. Industries that practice moral stewardship face sustainability challenges. This research aims to examine the influence of variables such as strategic orientation, operational resilience, innovation capabilities, innovation performance, and human capital on the sustainability of school organizations. The theoretical framework is based on the resource-based view and stakeholder theory because it is directly related to organizational sustainability. The sampling technique uses probability sampling, where each sample element is given the same opportunity to be included in the sample. The probability sampling technique employs cluster sampling, where private schools are divided into subgroups based on city regional administration. The research analysis unit is private high schools in Jakarta Province. The one-shot cross-sectional method is used as the Structural Equation Modeling (SEM) data analysis technique, utilizing Partial Least Squares (PLS) software. The results show that the strategic orientation variable has a significant influence on innovation performance. The innovation capability variable is a predictor that could have a significant influence on innovation performance. The operational resilience variable has a significant influence on sustainable longevity. The human capital variable significantly moderates innovation performance and longevity. The operational resilience variable does not have a significant influence on innovation performance. The strategic orientation variable does not have a significant influence on sustainable longevity. The innovation performance variable also does not have a significant influence on sustainable longevity.

Keywords: *Human capital, Innovation performance, Innovation capability, Organization sustainability longevity, Operational resilience, Strategic orientation.*

1. Introduction

Several terms that have developed in the field of psychology today are widely used as analogies to describe events in the business field. Longevity of organization is an interesting issue from a theoretical point of view. According to Garrido-Moreno, et al. [1]; Chowdhury, et al. [2]; Xi, et al. [3] and Alkhatib and Valeri [4]. The organization's ability to prepare, survive and recover to its original position is increasingly important. In term of theoretical view, corporate sustainable longevity (CSL) could not be separated from corporate longevity (CL) as the preceding concept. CSL refers to what enables a company to achieve longevity. CL refers to the longevity of the company compared to the average age of the company [5]. During pandemic, school organization has significant decline in the

number of students. This phenomenon becomes ironic because there are a lot of factors caused this school organization on the verge of decline.

This is not a local concern, but also globally CL has fallen markedly in recent decades Anthony, et al. [6] and Kuenen, et al. [7]. Onwuzuligbo and Nnabuife [8] indicated that a significant positive correlation exists between sustainability factors and the longevity of 225 organizations on the Nigerian capital market. The study recommends that organizations should recognize specific sustainability factors associated with the company's longevity. The organization's existence was closely linked to the impact of internal and external changing factors. Simons and Chabris [9] laureates of the Nobel Prize in psychology, coined the phrase "counting passes while watching the gorilla" referring to the promotion of flawless performance and adjusting to varying circumstances. In this scene, the gorilla emits a sense of annoyance or poses a threatening danger. Birkie [10] highlights the importance of both proactive and reactive skills in handling disruptions, defining this as operational resilience. Lowering the chances of distraction and enhancing endurance can be accomplished by fostering adaptability or boosting adaptability.

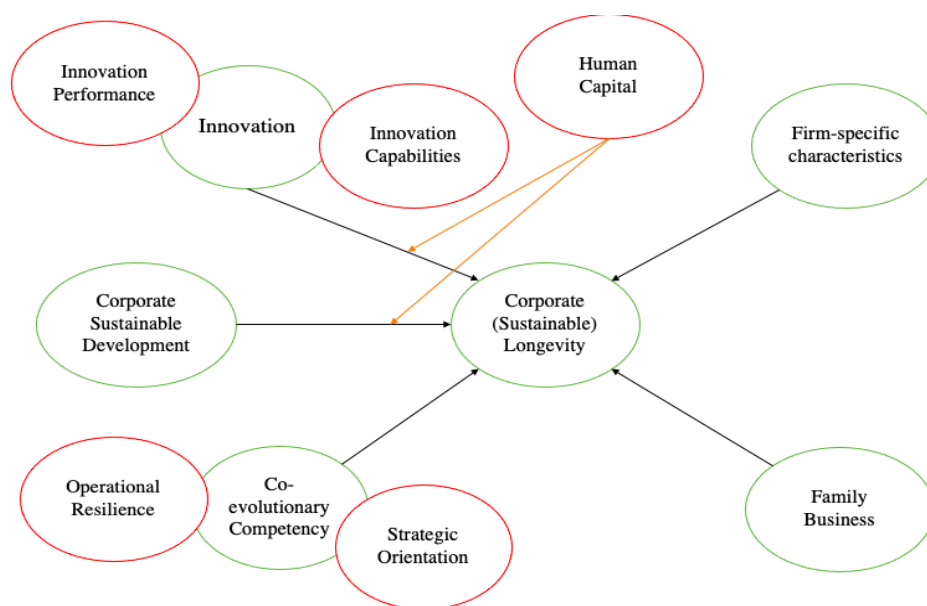


Figure 1.
Conceptual Framework.

This study aimed to examine if strategic orientation and operational resilience influence organization survival through innovation performance whether human capital enhances (moderates) the connection between strategic orientation, operational resilience, and innovation performance in the context of CSL as significant contribution of this research. According to Davis [11] the greatest shared challenge for businesses is longevity. Geus [12] highlights the importance of achieving corporate longevity (CL) and sustaining a balance of intricate organization traits in a volatile environment. In addition to the significance of CSL or CL, Joseph Schumpeter, a proponent of free market economics offers a contrasting perspective by downplaying the importance of CL because of creative destruction.

2. Literature Review

Davis [13] states that longevity is the biggest common challenges for organization. Geus [12] emphasizes need to obtain longevity and maintain a balance of complex organizational characters in a turbulent environment. Apart from CSL or CL is important, there is different viewpoint of Joseph

Schumpeter, a free-market economist who tends to ignore the value of a CL due to creative destruction. When innovation becomes routine, the growth will go slow and entrepreneurs would not feel the pressure to challenge the establishment. Furthermore, the capitalists will become bureaucrats or the ruling class and companies that try to maintain the establishment will be destroyed [14].

As stated by Ho, et al. [15] innovation through creative destruction driven by business rivalry complicates longevity. It is now common knowledge that some companies thrive while others struggle to survive over time due to bankruptcy. The Innosight research revealed crucial insights that typical CL in the S&P 500 dropped from 33 years in 1964 to 24 years in 2016. In addition, CL is projected to decrease to merely 12 years by 2027 [6]. In the realm of family businesses, only a small number of firms can endure over the long haul Hillebrand [16]; Hnátek [17]; Ahn [18] and Cressy [19]. Hnátek [17] indicates that roughly 70% of family businesses fail to persist into the second generation, while 90% are no longer managed by the third generation of the founding family. Another observation regarding multinational corporations by the Boston Consulting Group (BCG) reveals the lifespan of these companies varies between 40 to 50 years [7].

Freeman, et al. [20] described the organizational death model based on four principles: (i) organizational demise results from the interplay of external shocks and internal dynamics; (ii) an organization can face death at any moment; (iii) the dissolution of an organization represents just one scenario where it ceases to function as an independent entity; and (iv) organizations of similar ages in the same area exhibit varying mortality rates. Researchers performed investigations on the macro-business perspective regarding the connection between company size, duration, and profitability. Panza, et al. [21]; Esteve-Pérez and Mañez-Castillejo [22]; Cressy [19]; Audretsch [23]; Audretsch and Mahmood [24]; Audretsch, et al. [25]; Geroski [26] and Evans [27] up to the micro scope related to the legacy of family company founders, succession planning, leadership, ownership structure to longevity [18, 28-30] best competitive position, structural inertia, learning and adaptation [31, 32] and the effect of innovation on longevity regardless of company-specific characteristics such as age and size [33-39].

Earlier studies indicated the impact of prior variables ceased on organizational performance [36, 40] or culminated in innovation capabilities [41, 42]. In this study, innovation performance acts as mediating variable. This indicates while strategic direction and operational resilience directly affect longevity, it is expected that innovation performance will exert a larger influence or serve as a solution for the company's sustainability.

Operational resilience plays a role in this research model as operational disruption is now seen as a complex event that must be integrated into the decision-making process aimed at establishing strategies for competitive advantage [10]. This research considers human capital as a key element influencing the effectiveness or in-effectiveness of moderating strategic orientation and operational resilience to enhance innovation performance. Typically, human capital factors are considered as antecedent variables [43-50].

Building upon the proposal from earlier studies, future research is anticipated to investigate how various factors relate to life sustainability across different types of companies to form a comprehensive understanding of CSL [5]. Within diverse economic, industrial and geographic contexts, linked to the degree of innovation [36, 37] by enhancing strategic elements, recognizing external influences, developing dynamic capabilities, and bolstering human resources [18, 21, 28, 33].

3. Method

The study employed a quantitative research method by examining causal relationship that may provide a solution for the management of the analyzed company. The information acquired from participants via survey method by completing a questionnaire utilizing a sample intended to illustrate the traits of the population being examined. The focus of this study is on private school organizations in Jakarta, Indonesia. Additionally, the information and details obtained from the gathered questionnaires examined using PLS-SEM data analysis methods. This study was performed utilizing the one-shot or cross-sectional approach, a research technique executed over a brief period and in a specific location. The study's sample includes 192 private schools functioning in Jakarta, Indonesia. The method of sampling employed was simple random sampling, featuring margin of error of 10% within a population of 375 schools. The survey was created utilizing using the 5-point Likert Scale, with 1 indicating strongly unfit and 5 indicating strongly fit. This research formulates hypotheses that examined in the following manner:

H₁: Strategic orientation has positive affect to innovation performance.

Sahi, et al. [51] highlights how strategic orientation can enhance business performance. Stieglitz, et al. [52] describe how significance of exploration and strategic flexibility differs based on environmental dynamics. Dynamic environments are intricate adaptive systems. Razavi and Attarnezhad [53] explored the idea of organizational innovation to pinpoint different strategies and handle innovation, adapt, manage the organizations the foundation of innovation management. Organizations must keep evolving with altering environmental circumstances, as an untimely response can greatly harm business operations [54].

H₂: Operational resilience has positive affect to innovation performance.

Achour, et al. [55] noted that various stakeholders aim to engage in innovative methods to foster an integrated approach to resilience and sustainability. Teixeira and Werther [56] asserts that a robust organization predicts and responds to innovations in response to disruptive industrial shifts. Market needs and the business climate leading to operational disturbances can also serve as a positive motivation for adopting more eco-friendly production concerning raw material usage Colwill, et al. [57]. Alves, et al. [58] mentioned that high-tech companies generally prioritize innovation by technology. There are additional organizations that are more focused on market approval when innovating. Zawislak, et al. [59] discovered that both high-tech and low-tech organizations were able to restore greater capacities.

H₃: Innovation capability has positive affect to innovation performance.

Innovation performance is key to ensuring a responsible and sustainable future. Organizations that face challenges without the support of innovation would experience uncontrollable impacts from social misalignment [60]. Innovation capabilities in order to support sustainability as measured through performance need to be implemented by an organization in order to compete. Previous research Ho, et al. [15] and Li and Lin [61] shows a positive correlation between innovation capability and innovation performance. Innovation capabilities implemented in the form of creativity affects innovation performance [62, 63]. Innovative attitude is an organization's strategic orientation in creating the right behavior to achieve superior performance.

H₄: Strategic orientation has positive affect to corporate sustainable longevity.

Panza, et al. [21] states that organizations that last longer than the average age of the others indicate that the organization could drive a cycle of change, be it economic, political, or social. Ladeira, et al. [64] divides the strategic orientation for failure recovery into three constructs: recovery strategy, recovery behavior, and recovery performance. Organization must build core competencies through the application of quality practices, competitive pricing policies and cost effectiveness, marketing, appropriate basic strategies, product innovation, and prediction of buyer behavior for high customer satisfaction to survive [65-67].

H₅: Operational resilience has positive affect to corporate sustainable longevity.

The fusion of resilience and sustainability demands an extensive, meticulous process with complete commitment Achour, et al. [55]. Birkie, et al. [68] demonstrates that resilience minimizes the chance of performance decline caused by disruptions. Gunasekaran and Ngai [69] highlights the significance of operational resilience for CL by enhancing efficiency, minimizing environmental effects, and preventing sudden disruptions. Cirera, et al. [70] explored further the effect of the technology capability model on sustainable competitive advantage.

H₆ Human capital strengthens the innovation capability of innovation performance.

Meijerink and Bondarouk [45] demonstrated that an increased level of human resources leads to a greater level of competitive advantage. Buenechea-Elberdin, et al. [50] indicated that intellectual capital is the primary catalyst for innovation performance and competitive edge. Khadan [71] discovered that organizations struggle to locate new employees who can engage in all forms of innovation. The most commonly utilized indicators of innovation performance include the quantity of ideas and initiatives, alongside the count of awards presented to employees for the idea proposed [72]. Job qualifications and work demands on employees transformed with advent of the communication technology era, emphasizing skills like communication, technical abilities, adaptability, and creativity Ahmad, et al. [5]. Nilsson and Ritzén [73] advocate for reflective sessions on results, encouraging conversations about what generates value and promoting new behaviors like collaboration across functions.

H₇ Human capital strengthens innovation performance for corporate sustainable longevity

Wojan, et al. [35] demonstrate that establish processing organizations have a significant interest in a wider innovation focus. Ortiz-Villajos and Sotoca [34] expressed that a substantial innovation within the organization positively influences the likelihood of business survival. Within control variable, the size of organization and ages of the leader while managing the business emerged as the most significant factors affecting business continuity. Geus [12] demonstrated the typical lifespan of an organization is significantly less than its life expectancy as business strategic and practices rely excessively on economic reasoning and terminology. It is crucial to focus on the organization as a collective of individuals engaged in business. Innovation serves as the principal strategic aspect for organizations to foster growth, enhance profitability, and ensure survival Rajapathirana and Hui [36]. Meijerink and Bondarouk [45] demonstrated that an elevated qualification level in human resources leads to an increased level of competitive advantage. Human capital offers value, enhancing human cognitive awareness, creativity, and social innovation, making it the key factor in resource productivity and sustainability [74].

H₈ Innovation performance has positive affect to corporate sustainable longevity.

Decreased inventory and production may diminish operational resilience in the face of a sudden disruption [69]. Organizational innovation drives business growths and leads to sustainability within the organization Carayannis, et al. [75]. Ortiz-Villajos and Sotoca [34] indicated the major innovation within the organization favorably impacts the likelihood of maintaining business sustainability. The longevity of a growing business is an indication that creativity, innovation, and flexibility are essential for survival Gupta, et al. [76]. Santos and Brito [77] stated that companies that successfully reconstruct their capabilities and innovate are able to compete and survive. Wojan, et al. [35] shows that long-lasting processing organization are interested in non-innovation strategies towards innovation orientation. Research by Wojan, et al. [35] provide evidence that substantive innovation is important for buildingsustainability.

4. Discussion

The data analysis model used in this research is PLS-SEM with two main parts, namely measurement model and structural model. The projected loading value serving as the validity coefficient

for all constructs variables of each variables has a significance probability greater than the alpha significance level of 0.05. It might be understood that every construct variable within each latent variable is valid. The outcomes of testing data reliability for each statement item revealed an alpha significance probability value exceeding 0.05 and a critical ratio significance above 1.65. It may be construed that all construct variables exhibit reliability.

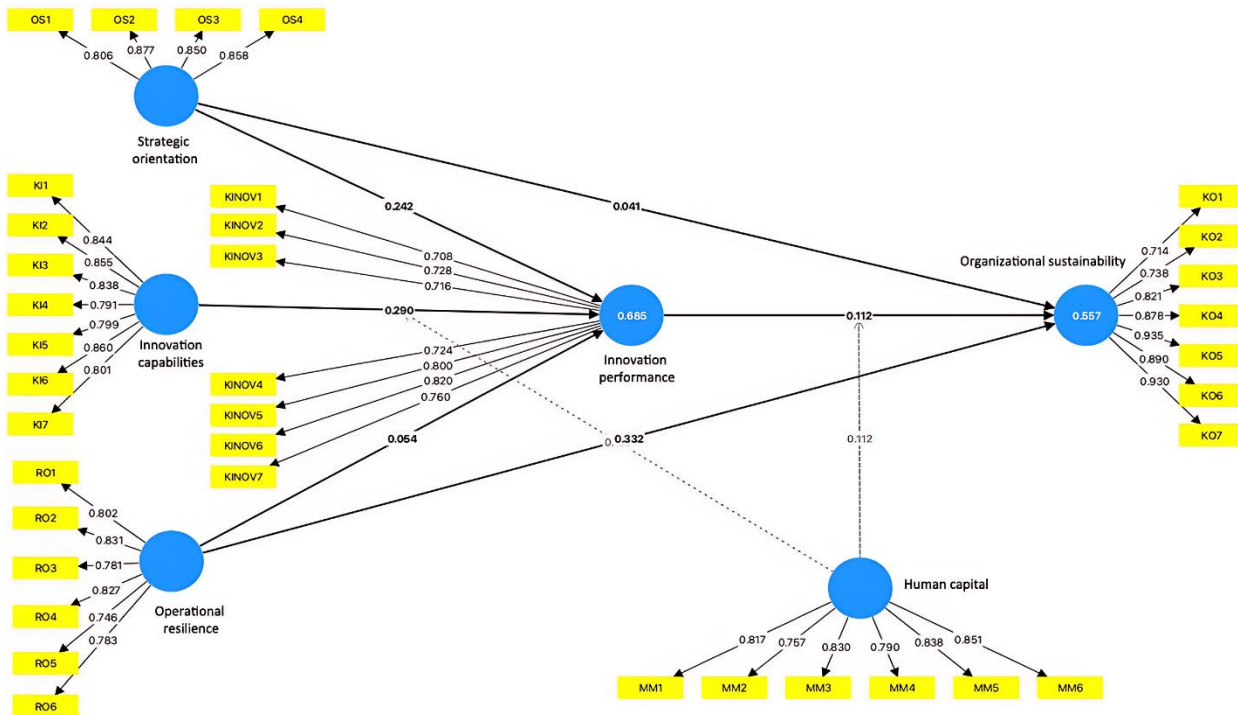


Figure 2. Model Testing.

Based on the results, it could be explained that the model is fit and is in accordance with the data indicates show a good fit or a very good fit or reach the recommended cut of value. The conclusion that could be drawn in this test is that research model is suitable for use at the next analysis stage.

H₉: The positive effect of strategic orientation on innovation performance.

Based on the results of bootstrapping testing with PLS-SEM, the p-value is 0.003 and t-value of 3.016. It could be interpreted that strategic orientation variable explains its effect on innovation performance variable. The unstandardized beta coefficient could be interpreted because the direction of the effect of causality is significant.

H₁₀: The positive effect of operational resilience on innovation performance.

Based on the results of bootstrapping testing with PLS-SEM, the p-value is 0.558 and t-value of 0.586. It could not be interpreted that operational resilience variable explains its effect on innovation performance variable. The unstandardized beta coefficient could be interpreted because the direction of the effect of causality is not significant.

H₁₁: The positive effect of innovation capability on innovation performance.

Based on the results of bootstrapping testing with PLS-SEM, the p-value is 0.000 and t-value of 4.286. It could be interpreted that innovation capability variable explains its effect on innovation

performance variable. The unstandardized beta coefficient could be interpreted because the direction of the effect of causality is significant.

H₁₂: The positive affect of strategic orientation on corporate sustainable longevity.

Based on the results of bootstrapping testing with PLS-SEM, the p-value is 0.725 and t-value of 0.352. It could not be interpreted that strategic orientation variable explains its effect on CSL variable. The unstandardized beta coefficient could not be interpreted because the direction of the effect of causality is not significant.

H₁₃: The positive affect of operational resilience on corporate sustainable longevity.

Based on the results of bootstrapping testing with PLS-SEM, the p-value is 0.005 and t-value of 2.791. It could be interpreted that operational resilience variable explains its effect on CSL variable. The unstandardized beta coefficient could be interpreted because the direction of the effect of causality is significant.

H₁₄: Human capital strengthens the innovation capability of innovation performance.

Based on the results of bootstrapping testing with PLS-SEM, the p-value is 0.000 and t-value of 3.838. It could be interpreted that human capital variable explains its effect on innovation capability to innovation performance variable. The unstandardized beta coefficient could be interpreted because the direction of the effect of causality is significant.

H₁₅: Human capital strengthens innovation performance for corporate sustainable longevity

Based on the results of bootstrapping testing with PLS-SEM, the p-value is 0.002 and t-value of 3.191. It could be interpreted that human capital variable explains its effect on innovation performance variable to CSL variable. The unstandardized beta coefficient could be interpreted because the direction of the effect of causality is significant.

H₁₆: The positive affect of innovation performance on corporate sustainable longevity.

Based on the results of bootstrapping testing with PLS-SEM, the p-value is 0.103 and t-value of 1.634. It could not be interpreted that innovation performance variable explains its effect on CSL variable. The unstandardized beta coefficient could be interpreted because the direction of the effect of causality is not significant.

The theoretical implications based on the model developed and the results of data analysis can strengthen theoretical concepts along with empirical support or get a different perspective based on the findings of this study on previous research. This research tries to fill various gaps found from previous research, as follows:

(i) This study adds to the concept of corporate sustainable longevity (CSL) beyond the idea of corporate longevity (CL). Research on CSL is still quite recent, as noted by lead author Ahmad, et al. [5]. The investigation of CSL cannot be separated from the comprehension of CL, as previously examined in various journal articles discussing the concept [11, 18, 21, 30, 37, 78, 79].

(ii) The study offers a different positioning of human capital as a moderating variable. In earlier studies, human capital variable was identified as a precursor variable to achieve the endogenous variable.

(iii) The operational resilience factor, as a new element, leads the CSL through innovation effectiveness. Achour, et al. [55] stated that merging resilience and sustainability necessitates a lengthy, thorough, and methodical process, mediated by innovation performance, as indicated by this study's results. Gunasekaran and Ngai [69] referred to it as a means of enhancing efficiency, minimizing environmental effects, and preventing severe disruptions. Cirera, et al. [70] and Alves, et al. [58] necessitate technological competencies. Birkie, et al. [68] demonstrates that operational

resilience aids in lowering the chances of performance decline due to disruption.

(iv) This study confirms that the variable of innovation performance is a crucial factor influencing school performance and CSL, despite conflicting findings in earlier studies regarding the effects of innovation on school performance, which often correlate with significant investments made by schools that yield enduring benefits [80]. Innovation is often regarded as the key element for achieving success in a competitive and global marketplace. This research highlights innovation performance as it pertains to the influence of antecedents or mediation in CSL, which in earlier contexts was understood as longevity but it's referred to CSL in this study [34].

The results of this research diminish the variability in the impact of innovation performance and CSL. Strategic orientation, innovative capabilities, and human capital greatly influence sustainability longevity. The presence of the innovation capability variable aimed at enhancing CSL is another innovation of this research, revealing that capabilities need to traverse innovation performance and be influenced by human capital prior to achieving CSL. These results present a novel viewpoint, illustrating that human capital serves various functions, including being independent or exogenous as well as mediating and moderating variables. This study introduces a new investigation into the factors influencing the variables that contribute to CSL achievement, specifically strategic orientation and innovation capabilities through innovation performance and human capital, which acts as moderating variable in relation to CSL.

5. Conclusion

The topic of longevity presents an intriguing challenge from theoretical perspective. The capacity of an organization to plan and function during disruption necessitates the capability to adapt changing and bounce back to its original state is growing ever more crucial. Private schools, alongside public schools, consistently encounter challenges related to the sustainability of their operations. As a crucial aspect of education, schools and their industry must receive strong support from technical, regulatory, and commercial viewpoints to prevent the education sector from experiencing a decline. In reaction to shifts in the business landscapes, it is crucial to focus on the elements that guarantee CSL. A key action that educational sectors need to adopt to reach CSL is to enhance innovation performance. School initiatives could be implemented to attain innovative performance through the enhancement of human capital. This study demonstrates that besides serving as a precursor to accomplishing CSL.

The scope of research could be expanded by obtaining more private school coverage to obtain more analytical opportunities, in addition diverse characteristics. For further research, more complete measure of CSL could be used inline with the increasing number of research on this topic, especially the topic of sustainability which is increasingly relevant. Comparing the results of the study with data collection at different times, it is possible to get findings and conclusions that strengthen this research, or even be different. This research model could also be used to apply to other industries to get the consistency.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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