

GREEN INTELLECTUAL CAPITAL AND RICH DIGITAL ECO-DYNAMIC TO IMPROVE E-BUSINESS SMES' INNOVATION PERFORMANCE

¹YUNIARTY*
¹RIDHO BRAMULYA IKHSAN
¹HARTIWI PRABOWO
²JULIATER SIMARMATA

¹Management Department, BINUS Online Learning, Bina Nusantara University, Jakarta, Indonesia 11480

²Post Graduate Program, Institut Transportasi dan Logistik, Jakarta, Indonesia

yuniarty@binus.ac.id, ridho.bramulya.i@binus.ac.id, hartiwi2200@binus.ac.id, juliaters@gmail.com

Received: April 22, 2025; Revised: August 08, 2025; Accepted: September 12, 2025

Abstract: *This research investigates the impact of green intellectual capital, dynamic capability, IT ambidexterity, environmental uncertainty, and RICH on the innovation performance of entrepreneurial small and medium-sized enterprises (SMEs). Focusing on Indonesian e-business SMEs, this study aims to deepen comprehension of the elements fostering innovation within SME entrepreneurship. Data were gathered from 313 SME entrepreneurs via online questionnaires and analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS). The study identifies key determinants influencing the improvement of innovation performance among Indonesian e-business SMEs and offers recommendations for its enhancement. Findings indicate that IT ambidexterity, environmental uncertainty, RICH, and green intellectual capital exert a significant positive effect on dynamic capability. Furthermore, dynamic capability, IT ambidexterity, environmental uncertainty, RICH, and green intellectual capital all demonstrate a substantial positive influence on innovation performance, with green intellectual capital emerging as the most impactful contributor. Ultimately, these insights can empower businesses to develop novel products and implement innovative marketing strategies, thereby expanding their market reach and customer base.*

Keywords: E-Business, Green Intellectual Capital, Innovation, IT Ambidexterity, Resources, SME

INTRODUCTION

Innovation entails not only the creation of high-quality products but also the development of novel offerings that align with evolving market preferences. Enterprises capable of innovation are more adept at adapting to changing environments, fostering the enhancement of new capabilities, and ultimately boosting overall business performance. A significant majority of

businesses in Indonesia, up to 75 percent, have not engaged in technology and innovation ([Ahdia 2022](#)). The preliminary survey indicates that the innovation performance of these businesses is deemed unsatisfactory. An evaluation of the perceptions of business actors in Indonesia, in comparison to their self-assessment of innovation performance, is depicted in Figure 1. The results show that small and medium-sized enterprises (SMEs) exhibit

below-average innovation performance, characterized by inadequate introduction of new products, limited expansion of product offerings, insufficient engagement in new technology domains, and a lack of effective measures to enhance yields or reduce material consumption. The identified shortcomings highlight the imperative for SMEs to adapt their innovation approaches to better align with market demands.

Innovation creates value, and in particular, SMEs have a more substantial impact on younger companies, traditionally SMEs in the early stages of their life cycles ([Rosenbusch et al. 2011](#)). By focusing on innovation performance, SMEs can enhance their productivity and competitiveness in the market. As a crucial strategic mechanism, innovation plays a substantial role in fostering business development. Businesses that are innovative have skills and ways of acting that help them deal with market problems and economic changes ([Cefis and Ciccarelli 2005](#)). SMEs' innovation performance can be measured through product and marketing innovation performance measurements ([Aksoy 2017](#)). SMEs operating in a constantly changing business landscape need to innovate to adapt to new market demands, technologies, and customer preferences ([Yousaf et al. 2023](#)). In a competitive market, this ability to change is key to their survival and growth.

The ability to foster creativity and increase innovation for e-business SMEs in Indonesia is needed to grow and compete. By focusing on innovation performance, SMEs can foster collaboration and knowledge sharing among stakeholders, leading to increased innovation and improved business outcomes. Innovative ideas and new information come from collaboration strategies in SMEs ([Audretsch et al. 2023](#)).

Innovation means putting ideas into action, which can lead to new goods or services or improvements to ones that already exist. Fundamental technologies often revolutionize business practices, giving rise to entirely new models over extended periods. The gradual and consistent adoption of innovations triggers waves of technological and institutional transformations, albeit at a slower pace initially. Indonesia boasts numerous skilled individuals in the creative sector, with innovative content continuously emerging from the efforts of young people across diverse fields each day. This wealth of creativity represents an invaluable, boundless resource of significant economic worth. Consequently, the government emphasizes the importance of Intellectual Property Rights awareness among the general populace, particularly those engaged in the creative economy ([Kemenparekraf 2021](#)).

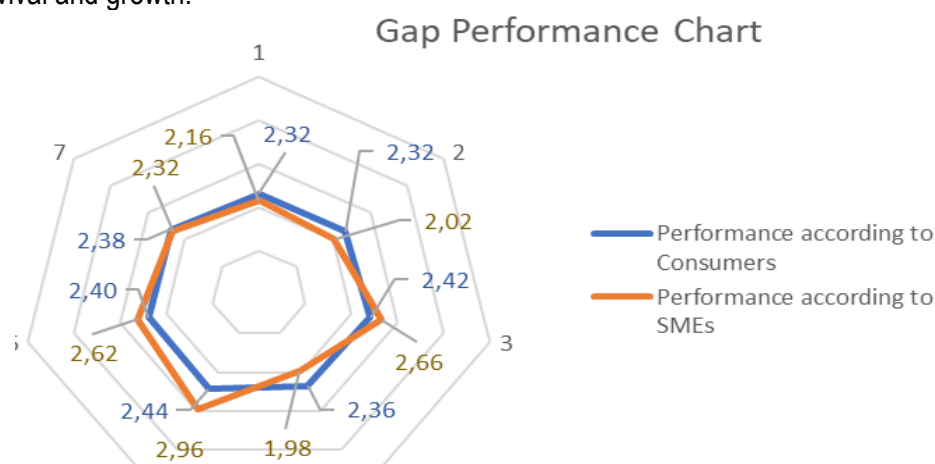


Figure 1. Performance Analysis Chart based on Consumer Responses and SME Responses

1. Introducing a new product.
2. Expand product range.
3. Opening new markets.
4. Entering the field of new technology.
5. Improving the quality of existing products.
6. Reducing production costs.
7. Increase yields or reduce material consumption.

Previous researchers have demonstrated the impact of dynamic capability ([Kaya et al. 2020](#); [Mikalef et al. 2020](#); [Khan and Mir 2019](#)), IT ambidexterity ([Soto-Acosta et al. 2018](#); [Ortiz de Guinea and Raymond 2020](#); [Lennerts et al. 2020](#)), and environmental uncertainty ([Lin et al. 2016](#); [Roper and Tapinos 2016](#); [Kalyar et al. 2019](#)) on innovation performance. Financial well-being and job satisfaction are also impacted by the resource-induced coping heuristic (RICH), as demonstrated in earlier research ([Lanivich et al. 2020](#)). Other researchers proved its impact on business financial performance, perceptions of entrepreneurial success ([Lanivich 2015](#)), and entrepreneurial orientation ([Adomako 2021](#)). RICH has been proven in several studies to contribute to innovation performance ([Yuniarty, Gautama So, et al. 2022](#); [Yuniarty, So, et al. 2022](#)). However, past study neglected the importance of an organization's knowledge, skills, and competencies in developing and implementing environmentally friendly policies.

This paper presents a novel contribution to the discourse on sustainable business practices by investigating the critical role of green intellectual capital in enhancing organizational innovation performance, particularly within Indonesian e-business SMEs in the creative industries. As environmental sustainability becomes a strategic imperative, businesses are increasingly embedding eco-conscious practices into their innovation agendas. Green intellectual capital, comprising knowledge, skills, and innovative capabilities directed toward sustainable practices, emerges as a distinctive and influential factor in fostering

innovation ([Lin and Mao 2023](#)). By investigating the relationship between green intellectual capital and innovation performance, this paper contends that organizations cultivating a culture of environmental consciousness not only contribute to ecological well-being but also drive substantial innovation ([Sukirman and Dianawati 2023](#)).

In light of the rising digitization of the economy, actors in the creative sector must acknowledge the vital relevance of comprehending intangible intellectual property rights (IPR). The widespread usage of social media greatly increases the potential of intellectual property theft while also providing chances for innovative ideas to become viral ([Kemenparekraf 2021](#)). The discussion delves into the mechanism by which green intellectual capital stimulates the creation of eco-innovations. This, in turn, boosts a firm's competitive edge and overall operational success. From this novel viewpoint, the study champions a fundamental change in recognizing and fostering green intellectual capital's capacity to propel sustainable and groundbreaking strategies within modern corporate environments.

The key novelty of this study lies in proposing green intellectual capital as an integrated construct that advances innovation theory by incorporating both sustainability and digital eco-dynamic dimensions. By doing so, the research introduces a fresh theoretical lens through which innovation performance can be understood in the digital and environmental age. The study focused on understanding the mechanisms by which innovation performance is elevated in Indonesian small and medium-sized enterprises. It seeks to address issues with innovation performance in Indonesia's creative industries, specifically in the craft, fashion, and culinary sub-sectors, by offering insightful information and useful applications.

The foundation of Joseph Schumpeter's theory of innovation (2013), also referred to as the innovation theory of profit, is the idea of

"creative destruction," which describes how innovation leads to the development of a free-market economy. According to [Schumpeter \(2013\)](#), an entrepreneur's primary duty is to introduce innovations, which are any new regulations that lower manufacturing costs overall or raise demand for products or services. He maintained that to raise living standards, entrepreneurial innovation and experimentation continuously upend the status quo and create new equilibria. According to Schumpeter's idea, market strength derived from innovation could provide better outcomes than only price competition ([Schumpeter et al. 2013](#)). He also emphasized the importance of factors such as political freedom, secure property rights, and the ability to assemble and invest capital in fostering innovation ([Sweezy 1943](#)).

Dynamic capability means that a company can combine, improve, and rearrange its internal and external capabilities to adapt to quickly shifting conditions. Organizations must successfully manage their resources through their acquisition, development, and protection to do this. A behavioral and cognitive framework known as the Resource-Induced Coping Heuristic (RICH) guides how decision-makers respond to resource limitations or opportunities. RICH facilitates the alignment of resources with environmental demands by promoting strategic responses based on resource awareness and optimization. Fostering dynamic capability requires this connection, as it enables prompt invention and adaptability.

Research has indicated that RICH has an impact on resource development, acquisition, and protection—all of which are critical for dynamic capability ([Yuniarty, So, et al. 2022](#); [Yuniarty, Gautama So, et al. 2022](#)). By promoting efficient resource management, RICH can help organizations maximize the value of their resources, leading to improved dynamic capability. As a result, this study suggests:

H₁: RICH has a positive effect on dynamic capability.

Innovation performance is closely linked to an organization's ability to spot and seize entrepreneurial chances, which are necessary to stay ahead of the competition in ever-changing markets. Decision-makers' interpretations and reactions to opportunities and challenges pertaining to resources are influenced by the Resource-Induced Coping Heuristic (RICH). According to this perspective, RICH improves strategic thinking and cognitive flexibility, allowing people to spot new opportunities even when resources are limited. By promoting the swift identification and strategic harnessing of entrepreneurial prospects, RICH aims to bolster the growth of dynamic capabilities and elevate innovation performance.

RICH has also been found to impact entrepreneurial opportunity recognition, which is crucial for dynamic capability ([Lanivich 2015](#)). By improving the capacity to recognize and seize entrepreneurial possibilities, it is possible for RICH to help the growth of dynamic skills and innovation performance. As a result, this study suggests:

H₂: RICH has a positive effect on innovation performance.

An entrepreneur should use IT to boost operating efficiency by better understanding how things are changing in the market and making management more effective ([Johnson and Schaltegger 2019](#)). Entrepreneurial behavior has required exploration and exploitation at a deeper level to achieve a competitive advantage ([Cenamor et al. 2019](#)). One important example of dynamic capability is organizational ambidexterity, which means being able to look for new chances and use existing resources at the same time. When it comes to information technology (IT), IT ambidexterity enables businesses to effectively leverage their existing IT resources while simultaneously exploring new technologies. Enhancing total dynamic capability requires constant innovation, learning, and strategic agility, all of which are supported by this dual capability.

According to dynamic capability theory, ambidexterity is a crucial dynamic capability that helps businesses adjust to shifting market conditions ([O'Reilly and Tushman 2008](#)). Furthermore, it has been revealed that organizational ambidexterity is a sort of dynamic capacity that demonstrates route dependence, demonstrating its strong and favorable correlation with firm performance ([Zhou et al. 2021](#)). Consequently, this study proposes:

H₃: IT ambidexterity has a positive effect on dynamic capability.

The ability of an organization to notice, respond to, and influence technological and market changes is inextricably linked to its innovation performance. This competence is aided by IT ambidexterity, which achieves a balance between discovering new digital solutions and maximizing existing IT resources. Organizations can better detect new threats, monitor supplier and competitor activity, and identify innovative opportunities by striking this balance. Enhancing innovation performance, particularly in rapidly changing situations, requires these detection and response capabilities.

Additionally, by using sensing capabilities, dynamic capabilities—such as IT ambidexterity—may impact organizational performance and effectiveness by enabling organizations to quickly identify risks, identify suppliers and competitors, and detect new and technically significant opportunities ([Kareem and Alameer 2019](#)). Therefore, this study proposes:

H₄: IT ambidexterity has a positive effect on innovation performance.

Businesses are being pushed to develop new strategies due to digitalization ([Sawy et al. 2016](#)), and firm initiatives are being digitized from management to operations ([Sia et al. 2016](#)). Organizations are compelled to enhance their sensing, learning, and adaptation capabilities when markets are volatile and external circumstances shift rapidly. Dynamic

capabilities are even more crucial in these kinds of settings since businesses need to be more flexible and forward-thinking to stay competitive. Higher environmental uncertainty can therefore encourage firms to actively develop and implement dynamic capabilities.

The beneficial impact of strategic foresight on an organization's dynamic capabilities is amplified by the presence of environmental volatility, especially when navigating unpredictable market conditions ([Han et al. 2023](#)). Therefore, we propose:

H₅: Environmental uncertainty has a positive effect on dynamic capability.

Rapid and erratic changes in markets, technology, and regulations are examples of environmental uncertainty, which can both hinder and encourage innovation. Businesses are compelled to become more proactive, enhance their sensing capabilities, and explore environmentally and technologically innovative solutions in response to such uncertainty. Therefore, to stay competitive and relevant, organizations, particularly SMEs, may be compelled to innovate more aggressively due to environmental uncertainty.

Additionally, SMEs' dynamic skills can be improved when entrepreneurs perceive increased degrees of environmental unpredictability, which will benefit the company's eco-innovation ([Haarhaus and Liening 2020](#)). Additionally, sensing capabilities and dynamic capabilities can impact organizational performance and effectiveness by enabling organizations to identify risks promptly, identify suppliers and competitors, and detect new and technically significant opportunities—especially in uncertain environmental conditions ([Kareem and Alameer 2019](#)). Therefore, we propose:

H₆: Environmental uncertainty has a positive effect on innovation performance.

The novel contribution of this study lies in proposing green intellectual capital as a theoretical construct that extends the innovation literature by integrating eco-centric and digital dynamics.

An organization's intangible assets are increasingly influencing its dynamic capability, especially in the environmental setting. Enhancing a company's ability to recognize, capture, and reorganize resources in response to ecological concerns requires green intellectual capital, which encompasses environmental knowledge, expertise, creative capability, and sustainability-oriented skills. Green intellectual capital promotes the growth of green dynamic capabilities by cultivating an internal culture of environmental awareness and creativity. These skills enable businesses to stay competitive in markets driven by sustainability, adapt to environmental changes, and comply with legal requirements.

The knowledge, proficiencies, and inventive initiatives a company possesses concerning environmental responsibility are known as its green intellectual capital, representing its crucial intangible holdings ([Chen et al. 2019](#)). Green intellectual capital also includes the skills, relationships, and other things that people and groups within a company have that are connected to innovation or protecting the environment ([Tonay and Murwaningsari 2022](#)). Companies leverage green intellectual capital to build green dynamic capability, which enables them to combine, enhance, and restructure resources as the environment evolves ([Antwi-Boateng et al. 2023](#)). Consequently, this study proposes

H₇: Green intellectual capital has a positive effect on dynamic capability.

Green product ([Rasmen Adi et al. 2022](#); [Ikhsan et al. 2023](#); [Handayani et al. 2018](#); [Rizkiatami et al. 2023](#)) and green marketing ([Ramli et al. 2020](#)) are contributors to

consumers' purchase behavior. The growth of Environmental, Social, and Governance (ESG) innovation and its effect on companies' sustainability success are both greatly affected by cultural factors. Companies can enhance their overall performance and make their efforts more sustainable and effective by integrating ESG practices with their cultural values and norms ([Hasanah et al. 2024](#)). Green intellectual capital is critical to keeping the company's emphasis on regulatory processes and efforts targeted at meeting corporate sustainability goals ([Tonay and Murwaningsari 2022](#)). Green intellectual capital greatly enhances an organization's dynamic capability. It enables it to pursue green innovation projects and successfully address environmental concerns, ultimately improving performance and competitiveness. Consequently, this study proposes:

H₈: Green intellectual capital positively affects innovation performance.

According to the research, innovation performance is favorably and considerably impacted by dynamic capability. An organization's dynamic skills include its ability to adapt to changes in its environment, draw lessons from past mistakes, and deal with new opportunities and issues ([Farzaneh et al. 2022](#)). Several studies have shown that dynamic powers affect how well and how effectively an organization works. One way that they do this is by encouraging new ideas and creativity ([Ferreira et al. 2020](#)). Furthermore, dynamic capabilities have been linked to the development of innovative forms of competitive advantage, emphasizing their role in driving innovation and ultimately impacting organizational performance. Consequently, this study proposes

H₉: Dynamic capability has a positive effect on innovation performance.

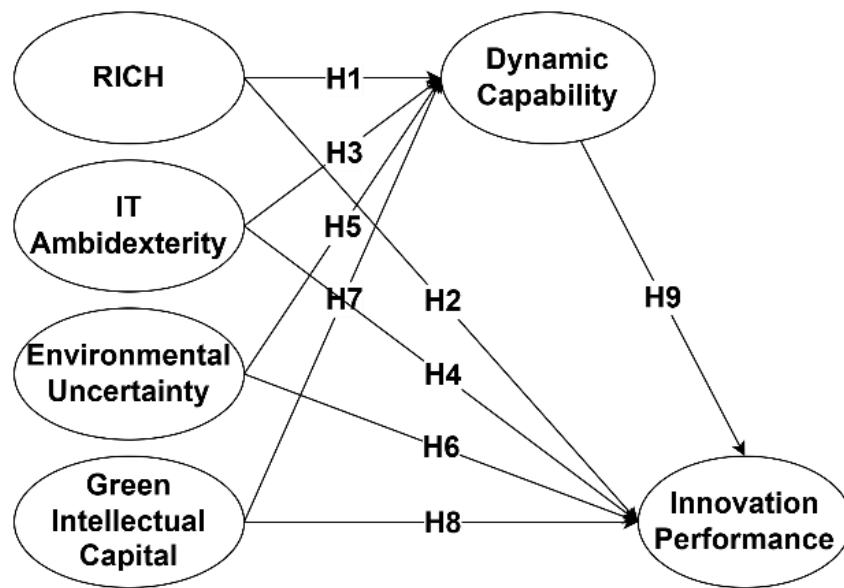


Figure 2. Theoretical Framework

Thus, as pictured in Figure 2, this research will examine the effect of dynamic capability, IT Ambidexterity, environmental uncertainty, RICH, and green intellectual capital on innovation performance.

METHOD

This research adopts a verificative and explanatory research design, employing a quantitative approach to measure sample variables constructed to represent the broader population. Data collection was conducted within a single point in time, following a cross-sectional methodology, wherein data was gathered once to address the research objectives without repetition.

The analysis unit was fashion, culinary, and craft creative economy SMEs. These creative economy SMEs are also e-business, with business locations spreading in the top six provinces with the largest number of SMEs in Indonesia. Proportionate random sampling is the

sample selection technique employed. Proportionate stratified random sampling has the advantage of being the most effective probability design. It also ensures that all groups are sufficiently sampled to enable group comparisons.

The approach becomes exceedingly sensitive when the sample size surpasses 400, rendering it challenging to obtain suitable goodness-of-fit estimates. Therefore, it is recommended to maintain a minimum sample size of 200 when the model has six constructs or fewer, each with three or more observed variables (Hair et al. 2019). The precision required for the study and the desired confidence level influence sample size. A sample size of 313 may provide a reasonably narrow confidence interval, especially if the study aims for a commonly used confidence level (e.g., 95%).

Table 1. Distribution of Locations and Types of Business

		Location						Total
		Bali	Banten	Jakarta	West Java	Central Java	East Java	
Fashion	Count	8	21	28	28	9	8	102
	%	7,8%	20,6%	27,5%	27,5%	8,8%	7,8%	100%
Culinary	Count	7	33	74	25	10	18	167
	%	4,2%	19,8%	44,3%	15,0%	6,0%	10,8%	100%
Craft	Count	16	7	10	4	3	4	44
	%	36,4%	15,9%	22,7%	9,1%	6,8%	9,1%	100%
Total	Count	31	61	112	57	22	30	313
	%	9,9%	19,5%	35,8%	18,2%	7,0%	9,6%	100%

Six Indonesian provinces—Bali, Banten, Jakarta, West Java, Central Java, and East Java—are the focus of this study. These regions serve as the country's main creative economy hubs, exhibiting the highest density of small and medium-sized enterprises (SMEs) in creative sectors like fashion, crafts, and culinary arts. They are vital for innovation, job creation, and cultural preservation. Only SMEs with at least three years of operation were included to ensure reliable innovation performance data. The distribution of locations and types of businesses of the respondents is presented in Table 1. Most respondents are in Jakarta and the culinary sector (74 businesses, 44.3%).

The indicators IPF1, IPF2, and IPF3 were adopted the research by [Aksoy \(2017\)](#), and IPF4 adopted the research by [Chen et al. \(2015\)](#). The measurements of environmental uncertainty were adopted from the research by [Syed et al. \(2020\)](#).

Measurements ITE 1, ITE 2, ITE3, ITT1, ITT2, and ITT3 were adopted the research by [Lee et al. 2015](#)) as well as ITE4 and ITT4 were adopted the research by [\(Cembrero and Sáenz 2018\)](#). Innovation capability measurements were adopted the research by [\(Zhang and Merchant 2020\)](#) and network capabilities measurements were adopted the research by [\(Mu et al. 2017\)](#).

Measurements of RICH was adopted the research by [\(Lanivich 2015\)](#). Green intellectual capital measurements were adopted the research by [\(Antwi-Boateng et al. 2023\)](#).

Structural Equation Modeling (SEM) Partial Least Squares is the statistical technique used in data analysis. SEM is a process that incorporates many measurable variables into an integrated model to estimate a number of dependent relationships between a collection of concepts or constructs ([Hair et al. 2019](#)).

SEM PLS is well-suited for predictive modeling. It is often preferred when the primary goal is to predict outcomes or when the emphasis is on understanding and explaining variance in dependent variables. SEM PLS is particularly suitable for studies with complex models and relationships between latent variables. It allows for the incorporation of formative and reflective constructs, providing flexibility in capturing the intricacies of theoretical frameworks ([Hair et al. 2019](#)). This study first ensures validity (convergent and discriminant validity) and reliability to assess the consistency and stability of a measurement instrument or model.

RESULTS AND DISCUSSIONS

To verify the validity of the indicators for the purpose of measuring the variables in this study, a validity test is used. The validity test illustrates the methodology for measuring a construct by utilizing the precision of the measuring instrument. The Standardized Factor Loading (SFL) of an indicator is considered to have strong validity when more than 0.70 (shown in O - Outer Loading in Table 2). However, an SFL value of more than 0.50 or a

P-Value of less than 0.05 is acceptable ([Sarstedt et al. 2021](#)).

Composite Reliability (CR) with an acceptable threshold > 0.70 is used to verify that multiple items measuring the same construct are coherent and consistent. AVE with an acceptable threshold ≥ 0.50 means the construct demonstrates good convergent validity by explaining at least 50% of the variance in its indicators.

The internal consistency of the data is strongly suggested by the fact that all

Cronbach's Alpha results exceed 0.70. Increased construct dependability is indicated by Rho_A values exceeding 0.70. To illustrate the general reliability of each construct, the Composite Reliability (CR) scores are all greater than 0.70. All of the Average Variance Extracted (AVE) values are above 0.50, which suggests that the concepts have acceptable convergent validity. Specifically, each concept explains over fifty percent of the variance in its indicators (Table 2).

Table 2. Convergent Validity and Reliability Tests

	Mean	O	M	STDEV	P Values	Cronbach's Alpha	rho_A	CR	AVE
IPF1 <- INOV	4,406	0,939	0,939	0,007	0,000	0,957	0,958	0,969	0,885
IPF2 <- INOV	4,409	0,936	0,935	0,007	0,000				
IPF3 <- INOV	4,393	0,944	0,944	0,006	0,000				
IPF4 <- INOV	4,428	0,944	0,944	0,007	0,000				
EVD1 <- ENVI	5,160	0,903	0,902	0,012	0,000	0,975	0,977	0,978	0,785
EVD2 <- ENVI	5,121	0,870	0,870	0,016	0,000				
EVD3 <- ENVI	5,073	0,899	0,898	0,012	0,000				
EVD4 <- ENVI	5,163	0,913	0,913	0,013	0,000				
EVC1 <- ENVI	5,294	0,895	0,894	0,013	0,000				
EVC2 <- ENVI	5,185	0,877	0,877	0,013	0,000				
EVC3 <- ENVI	5,160	0,870	0,868	0,016	0,000				
EVC4 <- ENVI	5,208	0,885	0,885	0,014	0,000				
EVM1 <- ENVI	5,163	0,861	0,859	0,018	0,000				
EVM2 <- ENVI	5,195	0,873	0,871	0,016	0,000				
EVM3 <- ENVI	5,208	0,878	0,876	0,017	0,000				
EVM4 <- ENVI	5,045	0,904	0,903	0,013	0,000				
ITE1 <- ITAB	5,112	0,866	0,866	0,017	0,000	0,951	0,953	0,959	0,746
ITE2 <- ITAB	5,058	0,845	0,845	0,020	0,000				
ITE3 <- ITAB	5,080	0,877	0,876	0,015	0,000				
ITE4 <- ITAB	5,131	0,872	0,871	0,016	0,000				
ITT1 <- ITAB	5,019	0,859	0,857	0,021	0,000				
ITT2 <- ITAB	5,042	0,871	0,869	0,019	0,000				
ITT3 <- ITAB	4,911	0,874	0,873	0,018	0,000				
ITT4 <- ITAB	5,019	0,847	0,845	0,026	0,000				
IPB1 <- DYCA	4,757	0,928	0,928	0,008	0,000	0,972	0,972	0,976	0,835
IPB2 <- DYCA	4,818	0,909	0,908	0,010	0,000				
IPB3 <- DYCA	4,709	0,921	0,921	0,010	0,000				
IPB4 <- DYCA	4,748	0,919	0,918	0,009	0,000				

NPB1 <- DYCA	4,473	0,912	0,912	0,009	0,000				
NPB2 <- DYCA	4,639	0,907	0,907	0,010	0,000				
NPB3 <- DYCA	4,521	0,906	0,906	0,010	0,000				
NPB4 <- DYCA	4,546	0,909	0,909	0,010	0,000				
ARC1 <- RICH	5,083	0,808	0,806	0,026	0,000	0,969	0,970	0,972	0,743
ARC2 <- RICH	5,086	0,819	0,817	0,028	0,000				
ARC3 <- RICH	5,032	0,829	0,827	0,024	0,000				
ARC4 <- RICH	4,965	0,878	0,877	0,015	0,000				
PRC1 <- RICH	5,150	0,882	0,882	0,014	0,000				
PRC2 <- RICH	5,198	0,902	0,902	0,011	0,000				
PRC3 <- RICH	5,166	0,869	0,869	0,015	0,000				
PRC4 <- RICH	5,083	0,878	0,877	0,015	0,000				
DRC1 <- RICH	5,064	0,871	0,870	0,015	0,000				
DRC2 <- RICH	5,045	0,882	0,882	0,013	0,000				
DRC3 <- RICH	5,000	0,866	0,865	0,016	0,000				
DRC4 <- RICH	5,013	0,856	0,855	0,019	0,000				
HCA1 <- GIC	4,879	0,903	0,902	0,013	0,000	0,957	0,957	0,965	0,823
HCA2 <- GIC	4,939	0,912	0,911	0,012	0,000				
HCA3 <- GIC	4,818	0,915	0,914	0,011	0,000				
SCA1 <- GIC	5,089	0,916	0,916	0,011	0,000				
SCA2 <- GIC	5,013	0,894	0,894	0,014	0,000				
SCA3 <- GIC	5,000	0,904	0,903	0,013	0,000				

Note: IPF - Product Innovation Performance; EVD - Environmental Dynamism; EVC - Environmental Complexity; EVM - Environmental Munificence; ITE - IT Capability for Exploration, ITT - IT Capability for Exploitation; IPB - Innovation Capability; NPB - Network Capability; ACR - Acquiring Resources; PRC - Protecting Resources; DRC - Developing Resources; HCA - Green Human Capital; SCA - Green Structural Capital; GIC - Green Intellectual Capital; O - Outer Loading; M - Sample Mean; STDEV - Standard Deviation; * $p < \alpha$ 5%

The discriminant validity was evaluated using the Fornell-Larcker criterion. The findings show that the square root of the Average Variance Extracted (AVE) for each construct is bigger than its correlations with other constructs. This indicates that each concept exhibits higher variance with its own indicators than with other constructs in the model, demonstrating adequate discriminant validity. The Heterotrait-Monotrait Ratio (HTMT) matrix in PLS also demonstrates discriminant validity, suggesting

that the measurement value should be less than 0.90 (as shown in Table 3). As a result, the discriminant validity of the six constructs was valid.

As shown in Figure 3, the next step was hypothesis testing to make sure the indicators showed strong construct validity (convergent and discriminant validity) and reliable construct. P-values less than 5% indicated that the hypotheses were supported (Table 4).

Table 3. Discriminant Validity using Fornell-Larcker and Heterotrait-Monotrait Ratio

	Fornell-Larcker Criterion						Heterotrait-Monotrait Ratio (HTMT)				
	DYCA	ENVI	GIC	INOV	ITAB	RICH	DYCA	ENVI	GIC	INOV	ITAB
DYCA	0.914										
ENVI	0.403	0.886					0.410				
GIC	0.378	0.293	0.907				0.391	0.299			
INOV	0.393	0.365	0.393	0.941			0.406	0.374	0.410		
ITAB	0.355	0.399	0.345	0.381	0.864		0.368	0.412	0.360	0.395	
RICH	0.438	0.309	0.461	0.376	0.317	0.862	0.449	0.316	0.478	0.387	0.331

H1 was supported, and RICH positively affects dynamic capability (path coefficient 0.258 and P-value $0.000 < 0.05$). The RICH and dynamic capability measure cognitive properties that mitigate uncertainty. Furthermore, RICH provides the foundation for effective strategy formulation for firms with an entrepreneurial approach (Lanivich 2015). The entrepreneurial landscape is hazy and unclear when it is not completely known. Entrepreneurs' cognitive assessments may involve analyzing prospects or prospective hazards, resulting in the appraisal of authentic opportunities and risks. There may be reinforcement when an organization's procedures integrate directions for obtaining, sustaining, and creating resources. This allows

additional combinations of competitive advantages that generate resources.

H2 was supported, and RICH positively affects innovation performance (path coefficient 0,131 and P-value $0.047 < 0.05$). SMEs' ability to acquire, protect, and develop resources will impact their ability to win the competition. The development of resources is the most indicative of what SMEs in Indonesia do among the three elements of RICH. A competitive advantage in digitalization is more closely associated with the development of talent, culture, and strategy than with technical challenges (Sawyer et al. 2016; Li et al. 2018). Operational capacity is the capacity of a company to incorporate digital technology into its business processes and procedures (Chuang and Lin 2015; Xue 2014).

Table 4. Structural Model Analysis (Inner Model)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Decision
RICH -> DYCA	0,258	0,257	0,063	4,081	0,000	H1 accepted
RICH -> INOV	0,131	0,131	0,066	1,989	0,047	H2 accepted
ITAB -> DYCA	0,131	0,134	0,066	2,001	0,045	H3 accepted
ITAB -> INOV	0,167	0,168	0,070	2,394	0,017	H4 accepted
ENVI -> DYCA	0,228	0,228	0,058	3,910	0,000	H5 accepted
ENVI -> INOV	0,146	0,148	0,069	2,110	0,035	H6 accepted
GIC -> DYCA	0,148	0,147	0,062	2,364	0,018	H7 accepted
GIC -> INOV	0,175	0,175	0,067	2,601	0,009	H8 accepted
DYCA -> INOV	0,151	0,155	0,070	2,150	0,032	H9 accepted

Note: *Significant at $p < \alpha$ 5%

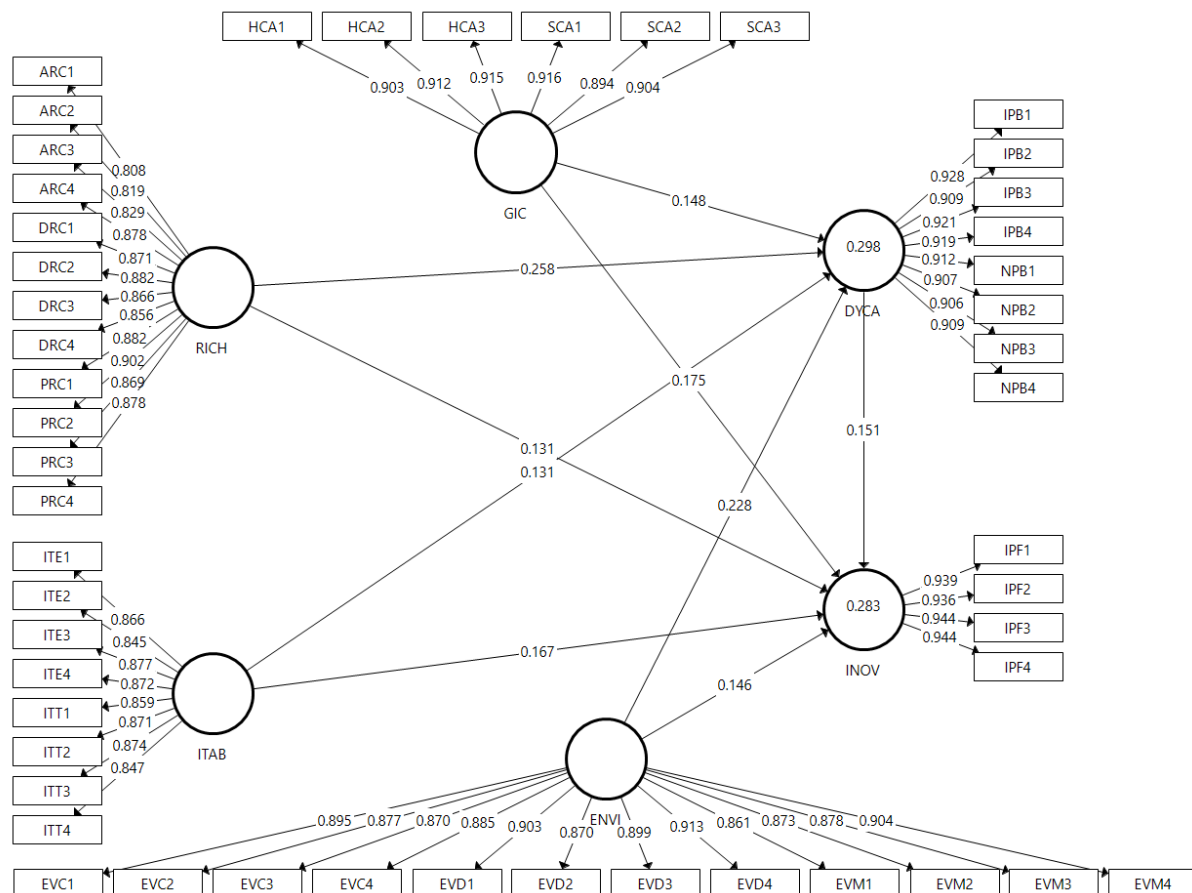


Figure 3. Standardized Estimates Model

H3 was supported, and IT ambidexterity positively affects dynamic capability (path coefficient 0,131 and P-value $0.045 < 0.10$). Information technology should be encouraged as a corporate culture ([Chuang and Lin 2015](#)) to guide the company toward digitalization. The system's sources and skills are required to execute the digital business plan successfully ([Karimi and Walter 2016](#)). In order to encourage broader use of digital platforms, the organizational structure is essential ([Yunis et al. 2018](#)).

H4 was supported, and IT ambidexterity positively affects innovation performance (path coefficient 0,167 and P-value $0.040 < 0.05$). The organization of internal and external knowledge improves the capacity to anticipate market trends and respond promptly to demand. As a result, preserving diverse skills from various

sources systematically stimulates innovation, providing long-term success and value resolution for the organization ([Wareham et al. 2014](#)).

H5 was supported, and environmental uncertainty positively affects dynamic capability (path coefficient 0,228 and P-value $0.000 < 0.05$). Innovation capabilities of SMEs are defined by their engagement in specific processes, including concept generation, feasibility analysis of ideas, consumer feedback and complaints, as well as the examination of competitor offerings and economic trends. The term emphasizes behaviors capable of producing new knowledge and creativity ([Castillo-Vergara and Lema 2022](#)). As a result, new services or modifications to current ones may be designed and offered in the future.

H6 was supported, and environmental uncertainty positively affects innovation performance (path coefficient 0,146 and P-value $0.035 < 0.05$). The development of innovation capability or acts that can lead to innovation is based on interest, or innovation performance, defined as creating economic value as a consequence of new or updated services. Therefore, firms may have excellent innovation skills, such as idea creation, economic trend research, as well as customer suggestion and complaint analysis. However, they fail to successfully turn the outputs of those activities into new services or improvements ([Neely et al. 2001](#)). Environmental dynamism significantly impacts a company's innovativeness ([Andersson et al. 2020](#)). The larger the incentive to innovate and prosper, the more dynamic or complicated the environment ([Freel 2005](#)).

H7 was supported, and green intellectual capital positively affects dynamic capability (path coefficient 0,148 and P-value $0.018 < 0.05$). Green intellectual capital refers to intangible assets, knowledge, competences, and experiences related to environmental conservation and sustainable innovation ([Chen et al. 2019](#)). It encompasses knowledge, skills, and connections about environmental conservation and sustainable innovation, as well as green human capital, structural capital, and relational capital. Research indicates that green intellectual capital will assist businesses in developing green dynamic capabilities, which are defined as the capacity to build, integrate, and modify resources in response to changes in the environment. This has a favorable impact on the company's success and sustainability ([Widyastuti et al. 2021](#)). Therefore, green intellectual capital shows a pivotal role in fortifying an organization's dynamic capability, enabling effective responses to environmental challenges, and fostering green innovation

initiatives, ultimately resulting in improved performance and competitiveness ([Abrudan et al. 2022](#)).

H8 was supported, and green intellectual capital positively affects innovation performance (path coefficient 0,175 and P-value $0.009 < 0.05$). Research indicates that green intellectual capital is crucial for cultivating green dynamic capabilities. These capabilities empower businesses to integrate, reconfigure, and construct resources in adaptation to environmental shifts, thereby positively influencing their sustainability and success. Furthermore, green intellectual capital boosts innovation by strengthening absorptive capacity—an organization's ability to assimilate, integrate, and utilize novel knowledge and information ([Liu et al. 2022](#)). Consequently, green intellectual capital is essential for enhancing an organization's innovation performance, allowing it to effectively combat environmental challenges and pursue green innovation initiatives. This, in turn, enhances competitiveness and promotes improved performance ([Tran et al. 2023](#)).

H9 was supported, and dynamic capability positively affects innovation performance (path coefficient 0,151 and P-value $0.032 < 0.05$). Participating in the network may speed up the pace of invention and encourage new levels of creativity. Network capabilities, in particular, have been shown to improve the innovation performance of organizations and SMEs ([Verreyne et al. 2019](#); [Zeng et al. 2010](#); [Mitrega et al. 2017](#)). The ability to create a network is critical to the success of SMEs ([Parida and Örtqvist 2015](#)). In the meantime, SMEs improve entrepreneurial performance by fostering the interchange of knowledge, the reduction of costs, the acceleration of innovation, the acquisition of reputation, and the identification of opportunities ([Lin and Lin 2016](#)).

CONCLUSION

This research has elucidated the intricate interactions among dynamic capability, IT ambidexterity, environmental uncertainty, resource-induced coping heuristic (RICH), and green intellectual capital in influencing innovation performance inside businesses. The results show how important these factors are for determining an organization's capacity to grow in a way that is sustainable and mindful of the environment.

Dynamic capability has become a vital factor in innovation success, emphasizing the significance of an organization's capacity to adapt, integrate, and restructure resources in response to fluctuating environmental conditions. The research emphasizes the significance of IT ambidexterity in fostering innovation by effectively managing both exploratory and exploitative activities within the information technology sector.

Environmental uncertainty has been identified as a challenging yet essential factor that significantly impacts innovation performance. The research highlights the need for organizations to navigate and thrive in uncertain environments to achieve successful innovation outcomes.

RICH has been found to impact entrepreneurial opportunity recognition, which is crucial for innovation performance, thereby positively influencing innovation performance. By promoting efficient resource management, RICH can help organizations maximize the value of their resources, leading to improved innovation outcomes.

Green intellectual capital is acknowledged as a crucial enabler of innovation performance, particularly in environmentally sustainable endeavors. The study shows how important environmental protection knowledge, skills, and intangible assets are for encouraging new ideas and making a business run better overall. It is good for green creativity to have green intellectual capital. Businesses can get an edge over their competitors by making it easy to

make technologies and products that are better for the environment. The research suggests that green intellectual capital advances innovation theory by fostering the development of ecologically sustainable practices and products.

These findings collectively offer a comprehensive picture of the complex interrelations of dynamic capability, IT ambidexterity, environmental uncertainty, RICH, and green intellectual capital in shaping innovation performance. Organizations aiming to improve their innovation skills and performance should examine the synergistic effects of these aspects and design strategies that leverage their interaction. This research has significance for practitioners, politicians, and scholars, providing actionable insights for promoting innovation in a dynamic, technology-driven, and environmentally aware business context.

The study contributes to the body of research on innovation by examining how various concepts—including dynamic capability, IT ambidexterity, environmental uncertainty, RICH, and green intellectual capital—impact overall innovation performance. A broader framework for understanding innovation in environments that are complicated and changeable is introduced. This study contributes to the body of knowledge on sustainable innovation theory by demonstrating the significance of green intellectual capital to long-term success. It also helps connect the dots between being environmentally responsible and successful innovation. According to the study, resource-induced coping heuristics (RICH) play a bigger role in spotting opportunities and are directly linked to innovation success, which was not previously looked into.

While this research has provided valuable insights into the relationships among dynamic capability, IT ambidexterity, environmental uncertainty, relational innovation capability (RICH), and green intellectual capital on innovation performance, several avenues exist for further investigation. Investigate

potential moderating factors that may influence the strength or direction of the relationships observed in this study. Explore the cultural dimensions that may affect the effectiveness of these factors in diverse cultural contexts. Integrate quantitative and qualitative research

methodologies to enhance comprehension of the contextual elements that may affect the identified correlations. Technological advancements may introduce new variables or alter the dynamics of existing relationships.

REFERENCES:

- Abrudan, Denisa Bogdana, Nosheen Rafi, Dana Codruta Daianu, and Masood Nawaz Kalyar. 2022. "Linking Green Intellectual Capital with Green Innovation: Examining the Roles of Green Dynamic Capabilities and 'Motivation to Achieve Legitimacy.'" *Agricultural Economics (Zemědělská Ekonomika)* 68 (7): 250–58. <https://doi.org/10.17221/97/2022-AGRICECON>.
- Adomako, Samuel. 2021. "Resource-Induced Coping Heuristics and Entrepreneurial Orientation in Dynamic Environments." *Journal of Business Research* 122 (September): 477–87. <https://doi.org/10.1016/j.jbusres.2020.09.026>.
- Ahdiat, Adi. 2022. "The Biggest Challenges for SMEs, from Expansion to Innovation." 2022. Diunduh tanggal 17 Agustus 2025, <https://databoks.katadata.co.id/datapublish/2022/12/06/tantangan-terbesar-ukm-dari-ekspansi-sampai-inovasi>.
- Aksoy, Hasan. 2017. "How Do Innovation Culture, Marketing Innovation and Product Innovation Affect the Market Performance of Small and Medium-Sized Enterprises (SMEs)?" *Technology in Society* 51:133–41. <https://doi.org/10.1016/j.techsoc.2017.08.005>.
- Andersson, Marius, Oystein Moen, and Per Olaf Brett. 2020. "The Organizational Climate for Psychological Safety: Associations with SMEs' Innovation Capabilities and Innovation Performance." *Journal of Engineering and Technology Management* - JET-M 55:101554. <https://doi.org/https://doi.org/10.1016/j.jengtecman.2020.101554>.
- Antwi-Boateng, Cosmos, Henry Kofi Mensah, and Sampson Asumah. 2023. "Eco-Intellectual Capital and Sustainability Performance of SMEs: The Moderating Effect of Eco-Dynamic Capability." *Cogent Business and Management* 10 (3): 2258614. <https://doi.org/10.1080/23311975.2023.2258614>.
- Audretsch, David B., Maksim Belitski, Rosa Caiazza, and Phillip Phan. 2023. "Collaboration Strategies and SME Innovation Performance." *Journal of Business Research* 164 (September):114018. <https://doi.org/10.1016/j.jbusres.2023.114018>.
- Castillo-Vergara, Mauricio, and Domingo Lema. 2022. "Creativity in SMEs: A Overview and Agenda for Future Research." *Brazilian Business Review* 19 (4): 431–53. <https://doi.org/10.15728/bbr.2022.19.4.5.en>.
- Cefis, Elena, and Matteo Ciccarelli. 2005. "Profit Differentials and Innovation." *Economics of Innovation and New Technology* 14 (1–2): 43–61. <https://doi.org/10.1080/1043859042000232160>.
- Cembrero, David, and Josune Sáenz. 2018. "Performance Outcomes of Interaction, Balance, and Alignment between Exploration and Exploitation in the Technological Innovation Domain." *International Journal of Business Innovation and Research* 15 (1): 14–33. <https://doi.org/10.1504/IJBIR.2018.088464>.
- Cenamor, Javier, Vinit Parida, and Joakim Wincent. 2019. "How Entrepreneurial SMEs Compete through Digital Platforms: The Roles of Digital Platform Capability, Network Capability and Ambidexterity." *Journal of Business Research* 100 (December 2018): 196–206. <https://doi.org/10.1016/j.jbusres.2019.03.035>.
- Chen, Shiou-Yu, Kuo-Chung Shang, Kung-Don Ye, and Hsin-Yi Yu. 2019. "Green Dynamic Capabilities-the Necessity between Green Intellectual Capital and Firm Performance: Evidence from Taiwan's Manufacturing Sector." *Corporate Management Review* 39 (2): 33–63. <https://doi.org/0.3966/102873102019123902002>.
- Chen, Yang, Yi Wang, Saggi Nevo, Jose Benitez-Amado, and Gang Kou. 2015. "IT Capabilities and Product Innovation Performance: The Roles of Corporate Entrepreneurship and Competitive Intensity." *Information and Management* 52 (6): 643–57. <https://doi.org/10.1016/j.im.2015.05.003>.

- Chuang, Shu Hui, and Hong Nan Lin. 2015. "Co-Creating e-Service Innovations: Theory, Practice, and Impact on Firm Performance." *International Journal of Information Management* 35 (3): 277–91. <https://doi.org/10.1016/j.ijinfomgt.2015.01.002>.
- Farzaneh, Mandana, Ralf Wilden, Leila Afshari, and Gholamhossein Mehralian. 2022. "Dynamic Capabilities and Innovation Ambidexterity: The Roles of Intellectual Capital and Innovation Orientation." *Journal of Business Research* 148 (September):47–59. <https://doi.org/10.1016/j.jbusres.2022.04.030>.
- Ferreira, Jorge, Arnaldo Coelho, and Luiz Moutinho. 2018. "Dynamic Capabilities, Creativity and Innovation Capability and Their Impact on Competitive Advantage and Firm Performance: The Moderating Role of Entrepreneurial Orientation." *Technovation* 92–93 (April): 102061. <https://doi.org/https://doi.org/10.1016/j.technovation.2018.11.004>.
- Freel, Mark S. 2005. "Perceived Environmental Uncertainty and Innovation in Small Firms." *Small Business Economics* 25 (1): 49–64. <https://doi.org/10.1007/s11187-005-4257-9>.
- Haarhaus, Tim, and Andreas Liening. 2020. "Building Dynamic Capabilities to Cope with Environmental Uncertainty: The Role of Strategic Foresight." *Technological Forecasting and Social Change* 155 (September 2019): 120033. <https://doi.org/10.1016/j.techfore.2020.120033>.
- Hair, J F, W C Black, B J Babin, and R E Anderson. 2019. "Multivariate Data Analysis." *Hampshire, United Kingdom*.
- Han, Xiang, Beibei Yue, and Zhiwei He. 2023. "Thriving in Uncertainty: Examining the Relationship between Perceived Environmental Uncertainty and Corporate Eco-Innovation through the Lens of Dynamic Capabilities." *Frontiers in Environmental Science* 11 (June): 1196997. <https://doi.org/10.3389/fenvs.2023.1196997>.
- Handayani, Naniek Utami, Hery Suliantoro, and Satria Dani Ansari. 2018. "Faktor Penentu Kesadaran Konsumen Dalam Pembelian Produk Kertas Bertanda Eco-Label." *MIX: Jurnal Ilmiah Manajemen* 8 (3): 477. <https://doi.org/10.22441/mix.2018.v8i3.003>.
- Hasanah, Uswatun, and Tri Jatmiko Wahyu Prabowo. 2024. "The Impact Of Culture In Shaping ESG Disclosure: A Systematic Review Of Multinational Practices." *Jurnal Bisnis Dan Akuntansi* 26 (2): 345–60. <https://doi.org/10.34208/jba.v26i2.2632>.
- Ikhsan, Ridho Bramulya, Laranza Destami Br Sinukaban, Radindya Citta Dinegoro, Rania Ramadhanty Annur, and Yudi Fernando. 2023. "The Impact of Pro-Environment Belief and Personal Norm toward the Beauty Purchase Behavior." *MIX: Jurnal Ilmiah Manajemen* 13 (2): 268. https://doi.org/10.22441/jurnal_mix.2023.v13i2.002.
- Johnson, Matthew P, and Stefan Schaltegger. 2019. "Entrepreneurship for Sustainable Development: A Review and Multilevel Causal Mechanism Framework." *Entrepreneurship Theory and Practice*, November, 1042258719885368. <https://doi.org/10.1177/1042258719885368>.
- Kalyar, Masood Nawaz, Imran Shafique, and Bashir Ahmad. 2019. "Effect of Innovativeness on Supply Chain Integration and Performance: Investigating the Moderating Role of Environmental Uncertainty." *International Journal of Emerging Markets* 15 (2): 362–86. <https://doi.org/10.1108/IJOEM-09-2018-0486>.
- Kareem, Mohanad Ali, and Alaa Abdulameer Ahmed Alameer. 2019. "The Impact of Dynamic Capabilities on Organizational Effectiveness." *Management and Marketing* 14 (4): 402–18. <https://doi.org/10.2478/mmcks-2019-0028>.
- Karimi, Jahangir, and Zhiping Walter. 2016. "Corporate Entrepreneurship, Disruptive Business Model Innovation Adoption, and Its Performance: The Case of the Newspaper Industry." *Long Range Planning* 49 (3): 342–60. <https://doi.org/10.1016/j.lrp.2015.09.004>.
- Kaya, Bahar, A Mohammed Abubakar, Elaheh Behraves, Harun Yildiz, and Ibrahim Sani Mert. 2020. "Antecedents of Innovative Performance: Findings from PLS-SEM and Fuzzy Sets (FsQCA)." *Journal of Business Research* 114:278–89. <https://doi.org/https://doi.org/10.1016/j.jbusres.2020.04.016>.
- Kemenparekraf. 2021. "Pentingnya Pemahaman Hak Kekayaan Intelektual Dalam Ekonomi Kreatif." 2021. Diunduh tanggal 17 Agustus 2025, <https://www.kemenparekraf.go.id/ragam-ekonomi-kreatif/Pentingnya-Pemahaman-Hak-Kekayaan-Intelektual-dalam-Ekonomi-Kreatif>.

- Khan, Sher Jahan, and Ajaz Akbar Mir. 2019. "Ambidextrous Culture, Contextual Ambidexterity and New Product Innovations: The Role of Organizational Slack and Environmental Factors." *Business Strategy and the Environment* 28 (4): 652–63. <https://doi.org/10.1002/bse.2287>.
- Lanivich, Stephen E. 2015. "The RICH Entrepreneur: Using Conservation of Resources Theory in Contexts of Uncertainty." *Entrepreneurship: Theory and Practice* 39 (4): 863–94. <https://doi.org/10.1111/etap.12082>.
- Lanivich, Stephen E., Andrew Bennett, Stacey R. Kessler, Nancy McIntyre, and Adam W. Smith. 2021. "Rich with Well-Being: An Entrepreneurial Mindset for Thriving in Early-Stage Entrepreneurship." *Journal of Business Research* 124 (January): 571–580. <https://doi.org/10.1016/j.jbusres.2020.10.036>.
- Lee, One Ki, Vallabh Sambamurthy, Kai H. Lim, and Kwok Kee Wei. 2015. "How Does IT Ambidexterity Impact Organizational Agility?" *Information Systems Research* 26 (2): 398–417. <https://doi.org/10.1287/isre.2015.0577>.
- Lennerts, Silke, Anja Schulze, and Torsten Tomczak. 2020. "The Asymmetric Effects of Exploitation and Exploration on Radical and Incremental Innovation Performance: An Uneven Affair." *European Management Journal* 38 (1): 121–34. <https://doi.org/10.1016/j.emj.2019.06.002>.
- Li, Liang, Fang Su, Wei Zhang, and Ji Ye Mao. 2018. "Digital Transformation by SME Entrepreneurs: A Capability Perspective." *Information Systems Journal* 28 (6): 1129–57. <https://doi.org/10.1111/isj.12153>.
- Lin, Feng-Jyh, and Yi-Hsin Lin. 2016. "The Effect of Network Relationship on the Performance of SMEs." *Journal of Business Research* 69 (5): 1780–84. <https://doi.org/10.1016/j.jbusres.2015.10.055>.
- Lin, Han, Saixing Zeng, Haijian Liu, and Chao Li. 2016. "How Do Intermediaries Drive Corporate Innovation? A Moderated Mediating Examination." *Journal of Business Research* 69 (11): 4831–36. <https://doi.org/10.1016/j.jbusres.2016.04.039>.
- Lin, Jiabao, and Minyi Mao. 2023. "How Does Digital Transformation Affect Sustainable Innovation Performance? The Pivotal Roles of Digital Technology-business Alignment and Environmental Uncertainty." *Sustainable Development* 32 (4): 3163–3181. <https://doi.org/10.1002/sd.2830>.
- Liu, Danping, Xiao Yu, Mei Huang, Shaohua Yang, Salmi Mohd Isa, and Mao Hu. 2022. "The Effects of Green Intellectual Capital on Green Innovation: A Green Supply Chain Integration Perspective." *Frontiers in Psychology* 13 (June): 830716. <https://doi.org/10.3389/fpsyg.2022.830716>.
- Mikalef, Patrick, Adamantia Pateli, and Rogier van de Wetering. 2020. "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 (5): 512–540. <https://doi.org/10.1080/0960085X.2020.1808541>.
- Mitrega, Maciej, Sebastian Forkmann, Ghasem Zaefarian, and Stephan C. Henneberg. 2017. "Networking Capability in Supplier Relationships and Its Impact on Product Innovation and Firm Performance." *International Journal of Operations & Production Management* 37 (5): 577–606. <https://doi.org/10.1108/IJOPM-11-2014-0517>.
- Mu, Jifeng, Ellen Thomas, Gang Peng, and Anthony Di Benedetto. 2017. "Strategic Orientation and New Product Development Performance: The Role of Networking Capability and Networking Ability." *Industrial Marketing Management* 64:187–201. <https://doi.org/https://doi.org/10.1016/j.indmarman.2016.09.007>.
- Neely, Andy, Roberto Filippini, Cipriano Forza, Andrea Vinelli, and Jasper Hii. 2001. "A Framework for Analysing Business Performance, Firm Innovation and Related Contextual Factors: Perceptions of Managers and Policy Makers in Two European Regions." *Integrated Manufacturing Systems* 12 (2): 114–24. <https://doi.org/10.1108/09576060110384307>.
- O'Reilly, Charles A., and Michael L. Tushman. 2008. "Ambidexterity as a Dynamic Capability: Resolving the Innovator's Dilemma." *Research in Organizational Behavior* 28 (January):185–206. <https://doi.org/10.1016/j.riob.2008.06.002>.
- Ortiz de Guinea, Ana, and Louis Raymond. 2020. "Enabling Innovation in the Face of Uncertainty through IT Ambidexterity: A Fuzzy Set Qualitative Comparative Analysis of Industrial Service SMEs." *International Journal of Information Management* 50 (November 2018): 244–60. <https://doi.org/10.1016/j.ijinfomgt.2019.05.007>.

- Parida, Vinit, and Daniel Örtqvist. 2015. "Technology-Based Small Flnteractive Effects of Network Capability, ICT Capability, and Financial Slack on Irm Innovation Performance." *Journal of Small Business Management* 53 (October):278–98. <https://doi.org/10.1111/jsbm.12191>.
- Ramli, Yanto, Dudi Permana, Mochamad Soelton, Swarmilah Hariani, and Tantri Yanuar. 2020. "The Implication Of Green Marketing That Influence The Customer Awareness Towards Their Purchase Decision." *MIX Jurnal Ilmiah Manajemen* 10 (3): 385. <https://doi.org/10.22441/mix.2020.v10i3.005>.
- Rasmen Adi, I Nyoman, Made Mulyadi, I Nengah Wirsu, I Nengah Dasi Astawa, and Made Setini. 2022. "Trust Is Felt to Be a Good Trigger in Marketing and Green Products in Generating Purchase Interest." *MIX: Jurnal Ilmiah Manajemen* 12 (2): 170. https://doi.org/10.22441/jurnal_mix.2022.v12i2.001.
- Rizkiatami, Azura, Yolanda Masnita, and Kurniawati Kurniawati. 2023. "Embracing Sustainability in Purchase Behavior Using the Theory of Planned Behavior." *MIX: Jurnal Ilmiah Manajemen* 13 (1): 15. https://doi.org/10.22441/jurnal_mix.2023.v13i1.002.
- Roper, Stephen, and Efsthios Tapinos. 2016. "Taking Risks in the Face of Uncertainty: An Exploratory Analysis of Green Innovation." *Technological Forecasting and Social Change* 112 (November):357–63. <https://doi.org/10.1016/j.techfore.2016.07.037>.
- Rosenbusch, Nina, Jan Brinckmann, and Andreas Bausch. 2011. "Is Innovation Always Beneficial? A Meta-Analysis of the Relationship between Innovation and Performance in SMEs." *Journal of Business Venturing* 26 (4): 441–57. <https://doi.org/10.1016/j.jbusvent.2009.12.002>.
- Sarstedt, Marko, Christian M Ringle, and Joseph F Hair. 2021. "Partial Least Squares Structural Equation Modeling." In *Handbook of Market Research*, 1–47. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-05542-8_15-2.
- Sawy, Omar A. El, Pernille Kræmmergaard, Henrik Amsinck, and Anders Lerbech Vinther. 2016. "How LEGO Built the Foundations and Enterprise Capabilities for Digital Leadership." *MIS Quarterly Executive* 15 (2): 141–66. <https://doi.org/10.4324/9780429286797-8>.
- Schumpeter, Joseph A, Christopher Ziemniewicz, and Carolina Pembroke. 2013. "Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship." Edited by Elias G. Carayannis. *Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship*, 66. <https://doi.org/10.1007/978-1-4614-3858-8>.
- Sia, Siew Kien, Christina Soh, and Peter Weill. 2016. "How DBS Bank Pursued a Digital Business Strategy." *MIS Quarterly Executive* 15 (2): 105. <https://aisel.aisnet.org/misqe/vol15/iss2/4>.
- Soto-Acosta, Pedro, Simona Popa, and Isabel Martinez-Conesa. 2018. "Information Technology, Knowledge Management and Environmental Dynamism as Drivers of Innovation Ambidexterity: A Study in SMEs." *Journal of Knowledge Management* 22 (4): 824–49. <https://doi.org/10.1108/JKM-10-2017-0448>.
- Sukirman, Anna Sutrisna, and Wiwiek Dianawati. 2023. "Green Intellectual Capital and Financial Performance: The Moderate of Family Ownership." *Cogent Business & Management* 10 (1): 2200498. <https://doi.org/10.1080/23311975.2023.2200498>.
- Sweezy, Paul M. 1943. "Professor Schumpeter's Theory of Innovation." *The Review of Economics and Statistics* 25 (1): 93. <https://doi.org/10.2307/1924551>.
- Syed, Tahir Abbas, Constantin Blome, and Thanos Papadopoulos. 2020. "Resolving Paradoxes in IT Success through IT Ambidexterity: The Moderating Role of Uncertain Environments." *Information and Management* 57 (6): 103345. <https://doi.org/10.1016/j.im.2020.103345>.
- Tonay, Clarissa, and Etty Murwaningsari. 2022. "Pengaruh Green Innovation Dan Green Intellectual Capital Terhadap Nilai Perusahaan Dengan Ukuran Perusahaan Sebagai Moderasi." *Jurnal Bisnis Dan Akuntansi* 24 (2): 283–94. <https://doi.org/10.34208/jba.v24i2.1484>.
- Tran, Tho Dat, Doan Minh Huan, Thi Thu Hien Phan, and Huong Lan Do. 2023. "The Impact of Green Intellectual Capital on Green Innovation in Vietnamese Textile and Garment Enterprises: Mediate Role of Environmental Knowledge and Moderating Impact of Green Social Behavior and Learning Outcomes." *Environmental Science and Pollution Research* 30 (30): 74952–65. <https://doi.org/10.1007/s11356-023-27523-y>.
- Verreyne, Martie-Louise, Allan M Williams, Brent W Ritchie, Sarel Gronum, and Kim S Betts. 2019. "Innovation Diversity and Uncertainty in Small and Medium Sized Tourism Firms." *Tourism Management* 72:257–69. <https://doi.org/10.1016/j.tourman.2018.11.019>.

- Wareham, Jonathan, Paul B Fox, and Josep Lluís Cano Giner. 2014. "Technology Ecosystem Governance." *Organization Science* 25 (4): 1195–1215. <https://doi.org/10.1287/orsc.2014.0895>.
- Widyastuti, Tri, Raden Parianom, Erwin Permana, and Fakultas Ekonomi dan Bisnis Universitas Bhayangkara. 2021. "Green Intellectual Capital and Sustainability Performance Companies in Indonesia." *Turkish Journal of Computer and Mathematics Education* 12 (14): 5555–65. <https://doi.org/10.17762/turcomat.v12i14.11686>.
- Xue, Ling. 2014. "Governance-Knowledge Fit and Strategic Risk Taking in Supply Chain Digitization." *Decision Support Systems* 62:54–65. <https://doi.org/10.1016/j.dss.2014.03.003>.
- Yousaf, Zahid, Mosab I. Tabash, Abdelmohsen A. Nassani, and Mohamed Haffar. 2023. "How Small and Medium Enterprises Achieve Innovation Performance? An Investigation of Influential Factors." *Journal of the Knowledge Economy* 14 (3): 3395–3408. <https://doi.org/10.1007/s13132-022-01004-y>.
- Yuniarty, Idris Gautama So, Sri Bramantoro Abdinagoro, and Mohammad Hamsal. 2022. "Exploring Extended Configuration of Digital Eco-Dynamic Influence on Small E-Business' Product Innovation." *JOIV: International Journal on Informatics Visualization* 6 (2–2): 546–52. <https://doi.org/10.30630/joiv.6.2-2.1145>.
- Yuniarty, Yuniarty, Idris Gautama So, Sri Bramantoro Abdinagoro, and Mohammad Hamsal. 2022. "Impact of the Extended Digital Eco-Dynamic on Innovation Performance: An Empirical Study on Small E-Businesses in Indonesia." *Frontiers in Psychology* 13 (March): 864530. <https://doi.org/10.3389/fpsyg.2022.864530>.
- Yunis, Manal, Abbas Tarhini, and Abdalnasser Kassar. 2018. "The Role of ICT and Innovation in Enhancing Organizational Performance: The Catalysing Effect of Corporate Entrepreneurship." *Journal of Business Research* 88 (December 2017): 344–56. <https://doi.org/https://doi.org/10.1016/j.jbusres.2017.12.030>.
- Zeng, S. X., X. M. Xie, and C. M. Tam. 2010. "Relationship between Cooperation Networks and Innovation Performance of SMEs." *Technovation* 30 (3): 181–94. <https://doi.org/10.1016/j.technovation.2009.08.003>.
- Zhang, Man, and Hemant Merchant. 2020. "A Causal Analysis of the Role of Institutions and Organizational Proficiencies on the Innovation Capability of Chinese SMEs." *International Business Review* 29 (2): 101638. <https://doi.org/10.1016/j.ibusrev.2019.101638>.
- Zhou, Luanping, Michael Yao-Ping Peng, Lijin Shao, Hsin-Yi Yen, Ku-Ho Lin, and Muhammad Khalid Anser. 2021. "Ambidexterity in Social Capital, Dynamic Capability, and SMEs' Performance: Quadratic Effect of Dynamic Capability and Moderating Role of Market Orientation." *Frontiers in Psychology* 11 (February): 584969. <https://doi.org/10.3389/fpsyg.2020.584969>.

This page is intentionally left blank