Dynamic Integration Capability with Alliance Performance in Learning Framework

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Abstract-*In a collaborative learning environment involving strategic alliances, the process of integration is critical. The main objective of this research is to conduct a comprehensive examination of dynamic integration capabilities (relationship capital, surfacing, joint learning structure, and knowledge acquisition), particularly in the context of learning within strategic alliances. This research is to answer how the public institution can stay competitive and improve their integration capability through strategic alliances in learning area specifically. This research is groundbreaking as it is the first to empirically examine all the learning framework's constructs, which includes relationship capital, surfacing, joint learning structure, and knowledge acquisition, in relation to dynamic integration capability and strategic alliance performance at the same time. The research utilized a quantitative method. The seven-point Likert scale survey was conducted through online to 83 respondents from 83 strategic alliances within a public institution in Indonesia from November 2023 to June 2024. Additionally, open-answered interviews with some respondents were organized to deepen the understanding of research findings. The research reveals that dynamic integration capability has a positive correlation with the performance of strategic alliances. Furthermore, it indicates that all constructs within the learning framework significantly impact dynamic integration capabilities. Among these, the construct of knowledge acquisition shows the strongest correlation with dynamic integration capability. The knowledge acquisition has the most significant impact on dynamic integration capability and suggested that public institutions and strategic alliances are effectively promoting cooperation through joint research projects and other similar activities to stay competitive.*

Keywords: Dynamic Integration Capability; Learning Framework; Strategic Alliance; Dynamic Capability.

1. INTRODUCTION

1.1 Background

Public institutions are required to operate efficiently and improve public services and innovation to generate public value, which eventually enhances their service performance and governance as competitive advantages (Popa et al., 2011). However, public institutions encounter various challenges when adopting technology to set up a digital government. Chen and Hsieh (2014) determined these challenges across three main areas: technological, organizational, and social aspects. The challenges applied to the social aspect entail culture, society, the digital divide, legal and economic factors, human resources, and the readiness of both public officials and citizens to adapt. Many individuals have trouble with a lack of skills and expertise, as well as problems related to leadership and reliability (Arief et al., 2021). To manage these problems, there is a need for a transformation in human capital and an organizational readiness for change. This includes the capacity to handle the potential negative effects on employee performance that may occur from the transformation process (Chrisanty et al., 2021). Furthermore, the capability to technology adoption has a positive effect on the resilience of company especially for small and medium-sized enterprises (SMEs) in Indonesia and Malaysia (Lestari et al., 2024).

In Industry 4.0, companies focus not only on technology but also on their capability to adapt, especially related to organizational structure and culture (Schuh et al., 2020). Gonzales-Perez and Ramirez-Montoya (2022) highlight that Education 4.0 relies on digital strategies, digital security, and robust infrastructure. This obliges employee's competence to fit in with current market conditions and enhance relevant skills, encouraging companies to customize their learning methods and ecosystems. In contrast to Industry 4.0, Industry 5.0 underlines research and innovation. According to Rada (2017), innovation is key to shifting towards a sustainable, human-centric, and resilient industry (Breque et al., 2021). Industry 5.0 is strongly correlated to Society 5.0, which advances discussions on cyber-physical systems while improving the relationship between people and technology to improve the quality of life and guarantee sustainable development (Roblek et al., 2021). An illustration of this trend is the use of Artificial Intelligence (AI) in talent development, as illustrated by Fu and Ji (2024) in their study of China's Triple Helix model, which delves into the functions of government and universities in AI talent development and their outcomes (AI development, enrolment, and faculty).

The integration capability becomes the crucial factor, which mediates the organization's resources and positively impacts its performance and value (Rashidirad & Salimian, 2020; Jiang, et al., 2015; Mikalef & Pateli, 2017). It is necessary for organizations to have both managerial and technological capabilities to improve their integrative capacity and create value through performance enhancement (Rashidirad & Salimian, 2020; Jiang et al., 2015; Mikalef & Pateli, 2017). Integrating capability refers to a company's ability to combine knowledge acquired into its operational capabilities. This process produces a shared understanding and collective sense-making, leading to improved performance and value creation (Rashidirad & Salimian, 2020; Mikalef & Pateli, 2017; Jiang et al., 2015; Pavlou & El Sawy, 2011). Eventually, integrating capability authorizes organizations to generate value by combining, acquiring, and utilizing resources from their alliances.

Learning skills have become crucial competencies within organizations, working side by side with literacy skills and life skills (Gonzales-Perez & Ramirez-Montoya, 2022). Organizations need these learning skills to improve their dynamic capabilities, making them more responsive and adaptive to environmental changes. Learning skills contain all the creativity and innovation, critical thinking, problem-solving, communication, and also collaboration.

According to Furnival et al. (2019), collaboration between firms allows them to blend their resources to generate value by securing the alignment of their assets. This collaborative work can be considered a competitive strategy for organizations. Performance and innovation enhancements are important for private companies and public institutions that aim to continue to be competitive and sustainable (Hijal-Moghrabi et al., 2020).

The learning framework includes four elements: relationship capital, surfacing, joint learning structures, and knowledge acquisition (Morrison & Mezentseff, 1997). The process of learning requires repetition and experimentation that is related and achieved from the organizational internal and external environment (Rashidirad & Salimian, 2020). Process learning can be implemented internally by having multifunctional employee training, knowledge database maintenance, and knowledge sharing. The external process learning is by having relationships with customers and suppliers and the international joint venture that can customize the business direction (Rashidirad & Salimian, 2020). Therefore, the learning framework contains the process that comes from both internal and external learning. The first construct in the learning framework is relationship capital, which is a unique relationship on a personal or company level and is developed by mutual trust, respect, friendliness, and a closely interactive relationship featuring both mutual respect and trust (Paul et al., 2006). Kurniasari and Lestari (2024) found that customer trust impacted the technology of ERP System Managerial Adoption. The second construct is surfacing, which is the way people learn to surface, challenge, and adapt the mental models referred to assumptions, images, and generalizations to acknowledge the world and the actions they will take (Morison & Mezentseff, 1997). The third construct is a joint learning structure, and based on Galeazzo et al., (2016) is a structure for sharing knowledge among both parties (the firms and their strategic partners). The last construct is knowledge acquisition, which is a process of grouping external knowledge acquisition into direct market exchange and cooperation agreements or strategic alliances (Ortiz et al., 2018). Chrisanty et al. (2023) found that all constructs in the learning framework influence the dynamic learning capability.

However, most previous research didn't examine all the constructs in the learning framework together in creating the dynamic integration capability, especially in learning areas that involve strategic alliances. They have tested the constructs partly in different research's frameworks. They also usually examined the constructs in a business framework since the strategic alliance activity is usually conducted by a company to increase its performance. This research empirically studies all the constructs in the learning framework that impact dynamic integration capability and strategic alliance performance. The public institution intends to enhance its competitive advantage by establishing strategic alliances (domestically and internationally) in the domain of learning. Consequently, the institution's dynamic capability plays a crucial role in enabling these strategic alliance activities. This research was performed within public institutions in Indonesia and aims to answer the research question: How can dynamic integration capability impact strategic alliance performance within a comprehensive learning framework that includes relationship capital, surfacing, joint learning structure, and knowledge acquisition? The research is arranged into several segments: a literature review and hypotheses, methodology, analysis and research results, including the conclusion, which contains managerial recommendations, limitations, and future research directions.

1.2 Background Literature Review

1. *Relationship Capital: Creating Dynamic Integration Capability*

The first construct in the learning framework is relationship capital, which encompasses trust, respect, and friendliness on both a personal and an enterprise level, as well as a closely interactive relationship characterized by mutual respect and trust between partners that fosters a unique relationship resource (Shan et al., 2018). The benefit of having a good relationship is not only in reducing transaction and supervision costs but also in acquiring unique knowledge (Lenart-Gansiniec, 2016). A company's good relationship is the ability to coordinate with all related parties (Paul et al., 2006). The interpretation of relationship capital is a unique relationship built by mutual trust, respect, and friendliness, as well as a closely interactive relationship featuring mutual respect and trust between.

Coordination also becomes important for the company and should be conducted by the leader (Osterberg, 1993). Nguyen et al. (2021) also found that coordination, commitment, trust, and frequency of interaction have a significant impact on inter-organizational relationship performance. It all indicates that the management coordination role through its relationship with all parties, including strategic alliances, is important for the organization and its alliance performance. Therefore, this study tested the effects of relationship capital together with other constructs in the learning framework to dynamic integration capability empirically, especially in public institution's learning areas. Correspondingly, we can conclude that: H1: Relationship Capital is positively related to dynamic integration capability.

2. *Surfacing: Creating Dynamic Integration Capability*

The second construct in the learning framework is surfacing. Morison and Mezentseff (1997) defined the surfacing as the way people learn to surface or reveal the real condition, challenge or testing the existing assumptions, and adapt the mental models related to assumptions, images, and generalizations to understand the world and know what actions that they will take.

The learning process in surfacing is acquiring, encoding, sharing, and internalizing proprietary technology or information related to alliance and alliance management (Yue et al., 2018). Yue et al. (2018) mention that the process of acquiring is the process of information or proprietary technology translation from individuals into implicit or explicit information. The information or knowledge acquisition will be shared with other employees or managers with the next process called encoding. The creation and use of information resources with examples: alliance criteria, lists, or manuals to procure action or decisions for a future alliance condition (Yue et. al., 2018). The following process is the information sharing process. The information sharing process is the knowledge exchange and sharing process with individuals in related interior departments in the enterprise (Yue et al., 2018). The last process is information internalization. The information internalization is a process to expedite an organization's alliance proprietary technology to become individual information (Yue et al., 2018). Therefore, surfacing has an impact on dynamic integration capability and strategic alliance performance. This study tested the effects of surfacing together with other constructs in the learning framework on dynamic integration capability empirically, especially in public institution's learning areas. Correspondingly, we can conclude that: H2: Surfacing is positively related to dynamic integration capability.

3. *Joint Learning Structure: Creating Dynamic Integration Capability*

The third construct is the structure for sharing knowledge for both the company and its strategic alliances. The organizational learning structure consists of strategic alignment, goals management systems, and teamwork for problem-solving (Galeazzo et al., 2016). Galeazzo et al. (2016) defined, first, the strategic alignment as a process to enhance the company's capability through products and process improvement. Second, the teamwork for problem solving is the team in an organization that has a mutual understanding of, a common language and improves the organizational climate to solve problems. Third, the goals management system is the way of organization achieves its goals by shaping decisions and actions rewards and incentives. It all indicated that the company needs to create a system that will achieve the company's goal by influencing the employee's decisions and actions through rewards and incentives.

Therefore, the joint learning structure has an impact on dynamic integration capability and strategic alliance performance. This study tested the effects of surfacing together with other constructs in the learning framework to dynamic integration capability empirically, especially in public institution's learning areas. Correspondingly, we can conclude that: H3: Joint Learning Structure is positively related to dynamic integration capability.

4. *Knowledge Acquisition: Creating Dynamic Integration Capability*

The last construct in the learning framework is knowledge acquisition. The knowledge acquisition consists of direct market exchange and cooperation agreements or strategic alliances (Ortiz et al., 2018). Direct market exchange (contracting) is the fastest acquisition characteristic that is conducted through external research and development and direct acquisition (licensing and consulting, recruitment of staff with specific knowledge, and company acquisition (Davenport & Prusak, 1998). The other dimension is cooperation agreement. The cooperation agreement is the acquisition method for complex and specialized knowledge and requires development in the learning area (Savino et al., 2017).

Therefore, knowledge acquisition has an impact on dynamic integration capability and strategic alliance performance. This study tested the effects of surfacing together with other constructs in the learning framework to dynamic integration capability empirically, especially in public institution's learning area. Correspondingly, we can conclude that: *H4: Knowledge Acquisition is positively related to dynamic integration capability.*

5. *The Dynamic Integration Capability: Creating Strategic Alliance Performance*

Two other constructs outside the learning framework are dynamic integration and strategic alliance performance. The integrating capability is the company's ability to combine knowledge, acquired by learning capabilities and deploying resources available in business alliances into a company's operational capabilities by creating shared understanding and collective sense-making which leads to performance improvement and creating value (Rashidirad & Salimian, 2020; Mikalef & Pateli, 2017; Jiang et al., 2015). The integrating capability can create value by combining, acquiring, and deploying resources from the alliances. Rashidirad and Salimian (2020) also found that learning capability has a positive impact on a company's ability to create value. The performance especially the strategic alliances need to be measured from time to

time since the feedback will give suggestions for improvement in some of the critical areas. The measurement of alliance performance can be conducted with two methods which are the objective method by analyzing the secondary data (Glaister & Buckley, 1998), and the subjective method by asking the person directly involved in handling the day-to-day alliance matters (Dhaundiyal & Coughlan, 2020).

From all the literature above, the empirical study is only on dynamic integration capability and strategic alliance performance but has never been empirically tested together with other constructs in the learning framework, especially in the learning area. In addition, also to answer the Research Question: "Do the dynamic integration capabilities affect strategic alliance's performance?", the proposed hypothesis research is: H5: Dynamic integration capability is positively related to strategic alliance performance.

1.3 Research Framework

The research model can be seen in Figure 1. The research model and summary of the five hypotheses are:

H1 Relationship Capital is positively related to Dynamic Integration Capability

H2 Surfacing is positively related to Dynamic Integration Capability

H3 Joint Learning Structure is positively related to Dynamic Integration Capability

H4 Knowledge Acquisition is positively related to Dynamic Integration Capability

H5 Dynamic Integration Capability is positively related to Strategic Alliance Performance

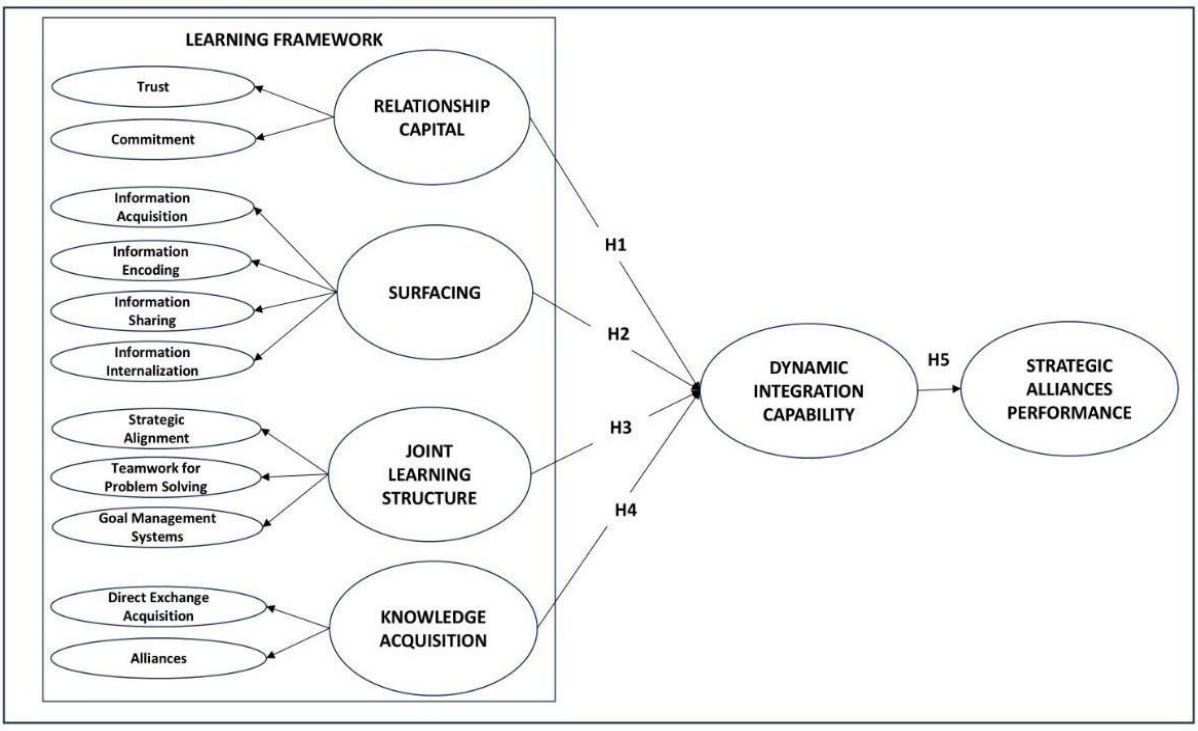

Figure 1. Research Model

Source: Authors self-work

2. RESEARCH METHODOLOGY

2.1 Methodology

The variable measurements for each construct were adapted from previous studies. The strategic alliance performance variable measurement was adapted from Dhaundiyal and Coughlan (2020), the dynamic integration capability variable measurement was adapted from Rashidirad and Salimian (2020), relationship capital variable measurement was adapted from Nguyen et al. (2021), surfacing variable measurement was adapted from Yue et al. (2018), joint learning structure variable measurement was adapted from Galeazzo et al. (2016), knowledge acquisition variable measurement was adapted from Ortiz et al. (2018). All the constructs in this study are the Strategic Alliance Performance (SAP) construct; Dynamic Integration Capability (DIC) construct; Relationship Capital (RC) construct with Trust and Commitment as its dimensions; Surfacing (S) construct with Information Acquisition, Information Encoding, Information Sharing, and Information Internalization as it's dimensions; Joint Learning Structure (JLS) construct with Strategic Alignment, Teamwork for Problem-Solving, and Goal Management System as it's dimensions; Knowledge Acquisition (KA) with Direct Exchange Acquisition and Alliances as it's dimensions.

The seven-point Likert scale ranging from (1) "strongly disagree" to (7) "strongly agree" was used to measure each variable. All questions were adjusted with the public institution context and through wording tested before going to the pre-test by 35 respondents (all have the same profile as the target respondents). From the pre-test result, the questioners have good reliability and validity figures and didn't need any changes. The final questioners can be seen in the table below.

Table 1. Questioners List

No	Code	Questions
Relationship Capital		
1.	**Trust**	
	RCT_1	We trust that the alliance institution's decisions are beneficial for both parties.
	RCT_2	We trust the alliance institution's professional competence and abilities.
	RCT_3	We trust the alliance institution's ability to implement the objectives.
	RCT_4	We highly trust the alliance institution through the formal contracts.
2.	**Commitments**	

No	Code	Questions
	RCC_1	We have a strong sense of loyalty to the relationships with the alliance institution.
	RCC_2	We dedicate enough resources to maintain the relationships with the alliance institution.
	RCC_3	We always try to improve the management of the relationships with the alliance institution.
	RCC_4	We will definitely continue the relationships with the alliance institution.
Surfacing		
3.	**Information Acquisition**	
	SIA_1	In alliance with the alliance institution, we archived all the history and information of the alliance.
	SIA_2	In alliance with the alliance institution, we record all important results and problems in the alliance in text or other forms (e.g. manually recorded, dashboard system).
	SIA_3	In alliance with the alliance institution, we regularly report major events to the organisation management team.
4.	**Information Encoding**	
	SIE_1	In alliance with the alliance institution, we form and gradually improve our organisation's method of managing the alliance.
	SIE_2	In alliance with the alliance institution, we have an alliance manual and other documents to guide decision-making during the alliance period.
	SIE_3	In alliance with the alliance institution, we summarised the experience of the alliance that spreads to all other alliances
5.	**Information Sharing**	
	SIS_1	In alliance with the alliance institution, we regularly exchange alliance information and experiences (e.g. webinars, policy news, workshops) with other colleagues of our organisation.
	SIS_2	In alliance with the alliance institution, we often exchange information and experience from the alliance (such as through webinars, policy news, and workshops) with the managerial staff of our organisation's other alliances via an informal process.
	SIS_3	In alliance with the alliance institution, our organisation encourages us to share alliance management experience (such as through webinars, policy news, and workshops) with other managerial staff in our organisation.
6.	**Information Internalization**	
	SII_1	In alliance with the alliance institution, we provide information on training and research programmes for employees participating in the alliance.
	SII_2	In alliance with the alliance institution, we provide external training for employees participating in the alliance.

No	Code	Questions
	SII_3	In alliance with the alliance institution, employees participating in the alliance are entitled to use all the alliance information of our organisation.
Joint Learning Structure		
7.	**Strategic Alignment**	
	JLSSA_1	In alliance with the alliance institution, in our organisation, the goals, objectives, and strategies of the alliance are communicated to us.
	JLSSA_2	In alliance with the alliance institution, potential alliance objectives are screened for consistency with our business strategy.
	JLSSA_3	In alliance with the alliance institution, at our organisation, the alliance process is kept in step with our business strategy.
	JLSSA_4	In alliance with the alliance institution, we believe that focusing on the long-term alliance will lead to better overall performance than focusing exclusively on short-term goals.
	JLSSA_5	In alliance with the alliance institution, we routinely review and update a long-range strategic plan for alignment with the alliance.
	JLSSA_6	In alliance with the alliance institution, our organisation's functions work interactively.
	JLSSA_7	In alliance with the alliance institution, the functions in our organisation cooperate to resolve conflicts between them when they arise.
	JLSSA_8	In alliance with the alliance institution, we emphasise the importance of good organisational inter-functional relationships.
	JLSSA_9	In alliance with the alliance institution, we are not encouraged to communicate well with different functions in the organisation. (Reverse Question)
8.	**Teamwork for problem solving**	
	JLSTS_1	In alliance with the alliance institution, we encourage employees to work together to achieve alliance common goals, rather than encourage competition among individuals.
	JLSTS_2	In alliance with the alliance institution, we form teams to solve alliance problems.
	JLSTS_3	In alliance with the alliance institution, employee teams are encouraged to try and solve alliance problems independently as much as possible.
	JLSTS_4	In alliance with the alliance institution, we are encouraged to make suggestions related to the alliance on improving performance at this organisation.
	JLSTS_5	In alliance with the alliance institution, we encourage employees to exchange opinions and ideas related to the alliance.

No	Code	Questions
	JLSTS_6	In alliance with the alliance institution, we encourage employees to work as a team related to this alliance.
9.	**Goals Management Systems**	
	JLSGS_1	In alliance with the alliance institution, our reward system truly recognises the people who contribute the most to our organisation related to the alliance.
	JLSGS_2	In alliance with the alliance institution, the incentive system at this organisation is fair at rewarding people who accomplish company objectives through the alliance.
	JLSGS_3	In alliance with the alliance institution, the incentive system at this organisation encourages us to reach the organisation's goals through the alliance.
	JLSGS_4	In alliance with the alliance institution, our incentive system encourages us to pursue the organisation's objectives vigorously through the alliance.
Knowledge Acquisition		
10.	**Direct Exchange Acquisition**	
	KAD_1	In alliance with the alliance institution, we get the exquisites n the technological development organisation.
	KAD_2	In alliance with the alliance institution, we obtain knowledge of the alliance institution's professional experience.
	KAD_3	In alliance with the alliance institution, we obtain knowledge from the external consultants or the alliance institution.
	KAD_4	In alliance with the alliance institution, we do not usually acquire technological licences. (Reverse Question)
	KAD_5	In alliance with the alliance institution, we acquire complex technology or knowledge and incorporate it into equipment, specialised machinery, or systems.
11.	**Alliances**	
	KAA_1	In alliance with the alliance institution, we develop alliances and cooperation with other organisations.
	KAA_2	In alliance with the alliance institution, we develop alliances and cooperation with the organisation's supply chain function.
	KAA_3	In alliance with the alliance institution, we develop alliances and cooperation with participants in the development of joint research projects.
Dynamic Integration Capability		
13.	**Dynamic Integration Capability**	
	DICC_1	In alliance with the alliance institution, we use networks as knowledge resources
	DICC_2	In alliance with the alliance institution, we are forthcoming in contributing our input to the group
	DICC_3	

No	Code	Questions
	DICC_4	In alliance with the alliance institution, we carefully interrelate our actions to each other to meet changing conditions In alliance with the alliance institution, we record and integrate historical methods and experiences in handling organization issues
Strategic Alliances Performance		
15.	**Strategic Alliances Performance**	
	SAP_1 SAP_2 SAP_3 SAP_4 SAP_5 SAP_6	The objectives for which this partnership with the alliance institution was established are being met. We are satisfied with the strategic alliance performance of the alliance with the alliance institution. The alliance institution appears to be satisfied with the performance of the alliance. We are satisfied with the overall performance of the alliance with the alliance institution. The alliance institution does not appear satisfied with the overall performance of the alliance. (Reverse Question) Our organisation's capabilities have been greatly enhanced due to the alliance with the alliance institution.

Source: Authors self-work

2.2 Responden Profile

The online survey was conducted on 127 strategic alliances from both domestic and foreign entities (90 domestic and 37 foreign), and since those 127 strategic alliances are the whole population, then we used the non-probability sampling technique. The questioners are filled by the person in charge that comes from the list of strategic alliances of a public institution. All the strategic alliances have active collaboration status with the public institution. The online survey was sent to each of the 127 strategic alliances to their institution's email, and the process of data gathering was followed also by email reminders. The response rate is 65% since 86 of 127 strategic alliances were repossessed. From 86 strategic alliance respondents, only 83 strategic alliances were counted in this research since three strategic alliances were categorized as outliers (incomplete data more than 10%). The respondents mostly come from public institutions (44 respondents) and have been established for more than 20 years held more than five years term agreements (35 respondents), and collaborated with public institutions for more than three years (45 respondents). The detailed respondent information can be seen in Table 2. Respondent Profile.

Table 2. Respondents Profile

Profile	Percentage	Items
1. Type of Ownership		
Public Institution	**53.01**	**44**
Private Organization	31.33	26
Others	13.25	11

Profile	Percentage	Items
Not Available	2.41	2
2. Establishment		
> 20 years	**83.13**	**69**
Between 6-20 years	14.46	12
< 5 years	0	0
Not Available	2.41	2
3. Agreement Period Term		
> 5 years term agreement	**42.17**	**35**
2-5 years term agreement	38.55	32
< 2 years term agreement	16.87	14
Not Available	2.41	2
4. Collaboration Timeframe		
> 3 years ago (before 2018)	**54.22**	**45**
Last year until now (between 2021 - 2022)	25.30	21
3 years ago (between 2018 - 2020)	18.07	15
Not Available	2.41	2
Total		**83**

Source: Authors self-work

2.3 Measurement Model Analysis

All data were analyzed in the measurement model and the structural model analysis with the detailed step below. The measurement model analysis is to evaluate the size and significance of loadings, reliability, and convergent and discriminant validity. Based on Hair (2019), the threshold for reliability is with Cronbach's alpha value ≥ 0.50 which represents "satisfactory to good" when interpreting internal consistency reliability results since this research is considered a social science research and based on calculation, all the construct are reliable and valid.

The constructs are valid and reliable if all the Cronbach's alpha, reliability, and Average Variance Extra (AVE) values are above the threshold (Cronbach's alpha: ≥ 0.50; Reliability: ≥ 0.70 and AVE ≥ 0.50). Based on the calculation, all constructs are valid and indicate that, on average, the constructs explain more than 50% of the variance of their indicators. Only one construct and one dimension have a validity value below the threshold which is constructed knowledge acquisition (Cronbach's alpha: 0.825 and AVE: 0.496) and dimension direct exchange acquisition (Cronbach's alpha: 0.593 and AVE: 0.418), but both have reliability values (0.873 and 0.749) that is still above the threshold. The construct and dimension still can be included since its reliability is above the threshold (≥ 0.5).

Based on the PLS Algorithm calculation for 63 indicators, the outer loading result also shows that most of the indicators are above the threshold, ≥ 0.708 (Hair, 2019) except for SAP5 (0.118), JLSSA9 (-0.057), and KAD4 (0.050). Those three indicators are reverse questions and some of the respondents submitted the answer mistakenly. The PLS Algorithm was recalculated for the remaining 60 indicators, after taking out those three indicators. All latent shown reliability since the Cronbach's Alpha's values are above the threshold, ≥ 0.7 (Hair, 2019) and all outer loading values are above the threshold, ≥ 0.5 (Hair, 2019) except for one dimension from exchange acquisition (Cronbach's alpha: 0.679 and AVE: 0.521) but still has good reliability values (0.810) that is still above the threshold (≥ 0.5) and that makes this dimension still can be included in the calculation.

The next assessment is the discriminant validity assessment and based on Hair (2019), the objective of the assessment is to measure the correlation of indicators of a construct represented by comparing it with other constructs in the research model. Hair (2019) set the threshold above 0.7 for a direct comparison of the AVEs of two constructs to the shared variance between the two constructs. Based on the Fornell-Larcker Criterion, all constructs already met the threshold after deleting 3 indicators: DICC4, KAD1, and JLST3. After deleting those indicators, each represents construct has a value above the other constructs, the example given for construct strategic alliance performance has the highest value (0.864) for its correlation with strategic alliance performance compared to the correlation value with other constructs. There is still one construct, surfacing, that has a value below joint learning structure (0.784 versus 0.820) but since this construct only has the remaining 3 indicators, this construct can be included in the calculation to make the construct well represented by their indicators.

Still, in discriminant validity assessment, the cross-loading assessment tries to measure that each indicator in the construct represents the highest value compared to the correlation value with other constructs. The example given in the cross-loading assessment for constructing strategic alliance performance has the highest value on its indicators SAP1 (0.872), SAP2 (0.899), SAP3 (0.808), SAP4 (0.935), SAP6 (0.802) for its correlation with strategic alliance performance compare to the correlation value with other constructs: relationship capital, surfacing, joint learning structure, knowledge acquisition, and dynamic learning capability. The last assessment in discriminant validity is the heterotrait-monotrait ratio (HTMT) assessment based on Hair (2019) defined as the mean value of the indicator correlations across constructs relative to the mean of the average correlations of indicators measuring the same construct with the threshold is ≤ 0.90 (Hair, 2019). The bootstrapping procedure was conducted with 500 subsamples default setting and based on the result showed that most of the indicators met the HTMT ratio threshold (≤ 0.9).

Table 3. Heterotrait-Monotrait Ratio (HTMT)

No	Variables	Strategic Alliance Performance	Dynamic Learning Capability	Relationship Capital	Surfacing	Joint Learning Structure	Knowledge Acquisition
1.	Strategic Alliances Performance	1					
2.	Dynamic Integration Capability	0.867					
3.	Relationship Capital	0.745	0.777				
4.	Surfacing	0.841	0.879	0.730			
5.	Joint Learning Structure	0.813	0.838	0.615	0.871		
6.	Knowledge Acquisition	0.831	0.893	0.773	0.864	0.821	

Source: Authors self-work

2.4 Structural Model Analysis

The next analysis is assessing the structural model analysis test that consists of assessing collinearity, evaluating the size and significance of the structural path relationship by assessing R^2, assessing the f^2 effect size, and evaluating the predictive relevance based on Q^2 (Hair, 2019).

The first assessment of collinearity is by evaluated the Variance Inflation Factor (VIF) value for each indicator that need to be below the threshold (3). When the value is 3 there are likely to indicate a problem and when the value is above 5 there are indicate high collinearity among the indicators. Based on the calculation, all indicator's value is below 3 except for Surfacing (4.267), Joint Learning Structure (3.330), and Knowledge Acquisition (3.244) but still acceptable since the value is still far below 5 (Hair, 2019).

The second assessment is to evaluate the size and significance of the structural path relationship by bootstrapping and value the R^2 that need to be above the threshold (>0.05). R^2 value is between 0 to 1. Since 0 indicated no relationship and 1 is perfect relationship and the higher the value indicate the greater explanatory power of the structural model. R^2 values of 0.75; 0.50 and 0.25 can be considered substantial, moderate, and weak, respectively. Based on the calculation, all R^2 values are above the threshold (>0.05). All the endogenous constructs have a moderate and substantial value since it's between 0.50 and 0.75. R^2 of the Strategic alliance performance is 0.572 (57.2%), and dynamic integration capability is 0.678 (67.8%).

The third assessment is to evaluate the f^2 effect size which is to determine if removing a predictor construct from the structural model has a substantive impact on the endogenous construct. Based on guidelines from Cohen (Hair, 2019), f^2 values of 0.02; 0.15, and 0.35; respectively represent small, medium, and large effects of an exogenous construct, and effect sizes of less than 0.02 indicate that there are no effects. After the calculation, all the endogenous constructs showed small and medium effects than the threshold (≥ 0.02). The effect size (f^2) of Dynamic Integration Capability:1.368; Relationship Capital: 0.067; Surfacing: 0.046; Joint Learning Structure: 0.053; Knowledge Acquisition: 0.059.

The fourth assessment is to assess the predictive relevance based on Q^2. The blindfolding procedure is conducted to obtain the Q^2 value. The value threshold is > 0 since it indicates that the path model's predictive accuracy is acceptable for that construct. After the calculation, all the endogenous constructs have a Q^2 value larger than zero and this indicates that the path model's predictive accuracy is acceptable. The Q^2 value assessment for all endogenous constructs is above zero: Strategic Alliances Performance (0.385) and Dynamic Integration Capability (0.461).

Hair (2019) mentioned that the path coefficient indicates a perfect positive relationship if the value is +1, no relationship if the value is 0, and a perfect negative relationship if the value is -1. Based on the calculation, all path coefficient values are positive since the path Coefficients are between -1 to 1, and all correlations are significant also since the T statistic is ≥ 1.96 (Hair, 2019). The result also showed that all correlations are connected since the P-Values are below the threshold which is ≤ 0.05 (Hair, 2019) which can be seen in Figure 2. Path Diagram below.

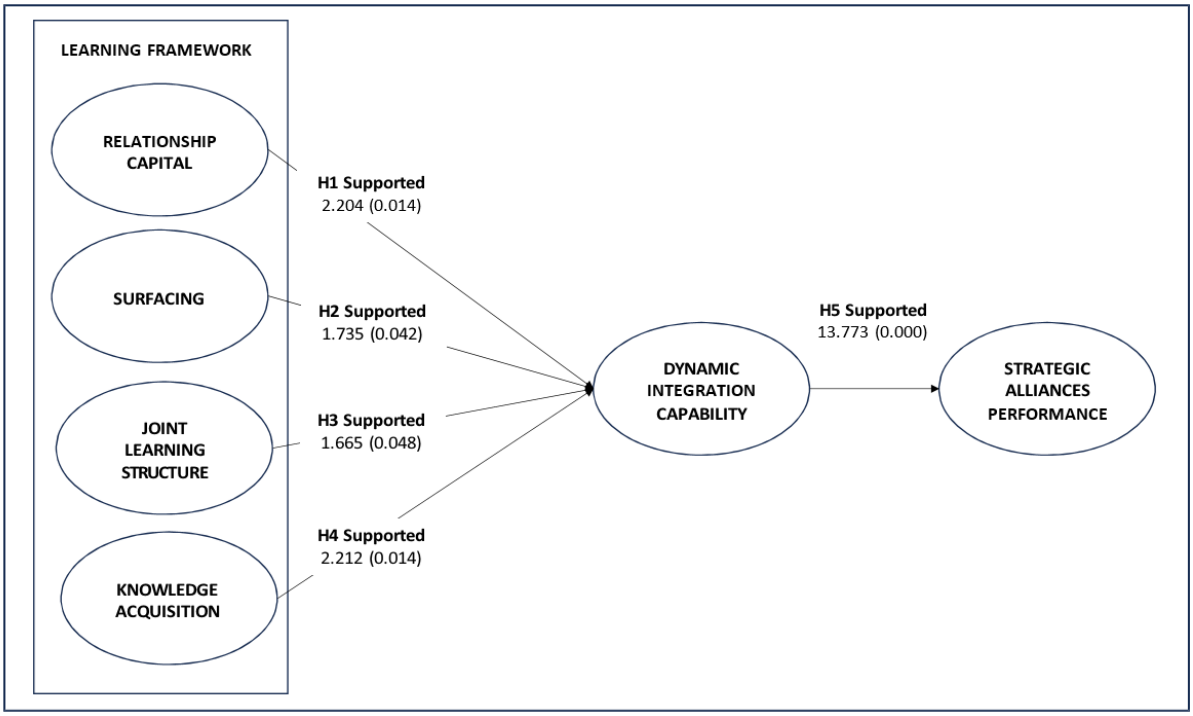

Figure 2. Path Diagram
Source: Authors self-work

3. RESEARCH RESULT AND DISCUSSION

The summary of the research results for five hypotheses can be seen in table below:

Table 4. Research Result Summary

	Hypotheses	t-Value	P-Value	Result
H1	*Relationship Capital is positively related to Dynamic Integration Capability*	2.204	0.014	Accepted
H2	*Surfacing is positively related to Dynamic Integration Capability*	1.735	0.042	Accepted
H3	*Joint Learning Structure is positively related to Dynamic Integration Capability*	1.665	0.048	Accepted
H4	*Knowledge Acquisition is positively related to Dynamic Integration Capability*	2.212	0.014	Accepted
H5	*Dynamic Integration Capability is positively related to Strategic Alliance Performance*	13.773	0.000	Accepted

Source: Authors self-work

Further investigation was carried out after analyzing the results from the quantitative data. Online interviews were conducted with public institutions and five of their strategic alliances. This action was taken to have a comprehension of the actual conditions. The interview's questions were focused on diverse aspects, including activities, processes, potential future initiatives, expected outcomes, and also key factors in the integration process.

Dynamic integration capability influences strategic alliance performance. The construct knowledge acquisition (t-value: 2.212; p-value: 0.014) has the most

significant effect on dynamic integration capability, while the construct joint learning structure (t-value: 1.665; p- value: 0.048) has the least. All the endogenous constructs demonstrated small to medium effects. The effect sizes (f^2) are as follows: Dynamic Integration Capability: 1.368, Relationship Capital: 0.067, Knowledge Acquisition: 0.059, Joint Learning Structure: 0.053, Surfacing: 0.046. The research findings show that knowledge acquisition has the most significant impact on dynamic integration capability, with a t-value of 2.212 and a p-value of 0.014. This is evident in the knowledge acquisition dimension, especially in relation to the question KAA_3: "In collaboration with the alliance institution, we develop partnerships and cooperation with participants for joint research projects." This question obtains the highest average score in the survey. These results suggested that public institutions and strategic alliances are effectively promoting cooperation through joint research projects, which significantly improve the knowledge acquisition process. Furthermore, the research's findings align with previous literature by Ortiz et al. (2018), which mention that external knowledge acquisition—through direct market exchanges and strategic alliance agreements—positively impacts strategic alliance performance through dynamic integration capability.

Joint learning structure is the construct with the lowest impact on dynamic integration capability (t-value of 1.665 and a p-value of 0.048). This is evident in the dimension of teamwork related to problem-solving, especially in the question JLSTS_1. In collaboration with the alliance institution, we encourage employees to work together to achieve common goals, rather than fostering competition among individuals. This result shows an opportunity for improvement, especially in our programs that promote teamwork. We should think carefully to performing an incentive program that supports teams to collaborate in achieving the alliance's objectives, rather than competing against one another.

The other area for enhancement lies within the relationship capital construct, especially regarding the trust dimension, as featured by question RCT_3. We trust the alliance institution's ability to implement our shared objectives. This proposes that we can improve our performance by determining a coordination program to define the particular objectives of each strategic alliance. Consequently, we can encourage the initiation of new knowledge that will escalate the effectiveness and utility of the strategic alliance itself. In addition, there is area for improvement in the surfacing construct, particularly related to the information internalization dimension, as indicated by question SII_3. Employees involved in the alliance are entitled to access all relevant information from our organization. We should give all employees with access to a knowledge-sharing platform, along with regular socialization of this knowledge through webinars, policy updates, and also workshops with colleagues. Finally, regarding the dynamic integration capability construct (t-value: 1.735; p-value: 0.042) from question DICC_3, we recognize the importance of interrelating our actions with those of the alliance institution to adapt to changing conditions. To enhance this aspect, both parties (the alliance institution and its partners) could arrange routine gatherings, workshops, or group discussions to coordinate and strategize for predicted changes.

4. CONCLUSION

4.1 Conclusion

The conclusions taken from the research findings indicate that all hypotheses have been accepted. This indicates that all constructs from the learning framework (relationship capital, surfacing, joint learning structure, and knowledge acquisition) impact the dynamic integration capability in learning area. Since most previous study didn't examine all the constructs in learning framework together and usually tested the constructs partly in a business framework. This research also give insight about dynamic integration capability that build by learning framework in public institution point of view while previous study mostly come from the private company's view.

Future studies could extend the area to include different sectors and types of organizations. Research could consider not only the learning area but also other significant domains, such as operations, innovation, and services. Different industries (manufacturing and services) and types of companies (private enterprises) that seek to acquire new knowledge or technology can also be explored. Longitudinal studies could also be a precious approach for future research, as they may contribute insights for enhancement over time. In addition, other dynamic capabilities, such as dynamic reconfiguration capability, deserve to explore further.

The empirical benefit of this research is to know at what construct that public institution need to focus on especially in a learning framework. This finding can make the public institution increase their dynamic integration capability which will lead to optimum achievement on their strategic alliances activities. This finding will create more efficiency process and investment for public institution. The theoretical benefit of this research is to enriched the understanding of dynamic integration capability that build by a complete learning framework through strategic alliances.

4.2 Implication/Limitation and Advices for Future Research

The limitations of this research come from the specific types of strategic alliances studied in the learning area, mainly prioritizing on joint research activities and collaborative learning programs (co-creating syllabus, discussions, and also other related activities). Furthermore, the research is specifically only to public institutions. The vary level of capability between public institution and its strategic alliances also become the limitation in this research. Those limitations above can be address with future research.

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