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The Mediating Impact of High Level of Innovation among the Knowledge and Training of the Employees in SMEs of Thailand

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ABSTRACT

The goals linked with this article is to examine the role of knowledge management policies, knowledge acquisition and employee training on the business performance of the employee of SMEs in Thailand. The goals also include the inspection of the mediating role of high-level innovation among the links of knowledge management policies and business performance, knowledge acquisition, and business performance and, employee training and business performance. The innovation related employees of SMEs in Thailand are the respondents and data were gathered from them by using the questionnaires and PLS-SEM was used to check the hypotheses. The findings exposed that knowledge management policies, knowledge acquisition, and employee training have positive nexus with business performance. The results also show that the high level of innovation positively mediates among the links of knowledge management policies and business performance, knowledge acquisition, and business performance and, employee training and business performance. These findings give the help to the new researchers in this area and also provide the guidelines to the regulation-making authorities that they must prepare the regulations to enhance the employees' interest in the adoption of nee innovation in the organization.

Keywords: Knowledge Management Policies, Employee Training, Knowledge Acquisition, Business Performance, High Level of Innovation.

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INTRODUCTION

The time of information plays a necessary job in the financial development and growth of all the enterprises. Among the entrance of the globalization, information has developed into an indefinable source producer of stable competitive advantage (Mee-ngoen, Sirariyakul, Limphothong, Tomcharoen, & Jermsittiparsert, 2020). Supervision of information, improvement and presentation in SMEs 142 and contributes to the creation of an academic center and to the financial behavior of organizations. In this area of study action, short and the medium size (SMEs) needs the removal of the information from each strange sources and home sources to get higher input in the workplace, further innovation and advance presentation (García-Morales, Ruiz-Moreno, & Llorens-Montes, 2007). Knowledge management (KM) is a full advance that includes imprisoning, receiving and exchange of knowledge in an organization the events, policies information and knowledge of the workers. In extra, information systems power the attitude of workers and make stronger a civilization base on the transfer and application of the knowledge. KM is a work that checks important strategies, skills, policies, and actions. The position of the company plan with the KM is important for additional price achieving outcomes. KM influences the trades system by rising success, making a sweet situation among workers, and ensuring trade's competitiveness and sustainability (Jansen, Van Den Bosch, & Volberda, 2006).

On the other hand, KM is not amply general in SMEs, mostly by the need for planning, preparation need of economic property, dislike to convert civilization, doubt regarding advantages and skill pettiness, which are usual in these governments. A logical number of observed researches have analyzed the crash of KM and advances in SMEs. On the other hand, the connection between advance and presentation is at rest a broad field for the examination. Working on the KM has located minimum stress on the advantages start in the SMEs, the greater part of the students give attention to huge governments (García-Morales, Matías-Reche, & Hurtado-Torres, 2008). In extra, smallest accepting of how organizations make, move and use information has to lead to complexity in exchanging information into an aggressive advantage. The complexity in a measure the KM in SMEs gives a sensible detail for the shortage of observed researches in these increasing disciplines. By the huge power of KM in the growth and advance of SMEs, it is significant to advance this kind of research more frequently (Damanpour & Evan, 1984).

The purpose of this job is to importantly study the connection between innovation, KM and presentation in SMEs in the country of Thailand. In the present aggressive worldwide situation, it is vital to study the answer factors that change the advance and development of these organizations (Mazzola, Bruccoleri, & Perrone, 2012). Thy study questions that we try to the solution are as follow: 1 does information running power innovation actions in SMEs? 2. Does trade innovation apply any power to the SME presentation? The text reveals that KM can aid SMEs to well increase workers, recover innovation process, product size, make happy clients and so get the governmental victory. This document collects the text on KM in two paths. First, we study the KM in the part of SMEs and judge their connection with the presentation and innovation. This feature indicates the regain of chance for SMEs to start for an advance that adds to the growth of being competitiveness and funds (Lindgreen et al., 2008). Secondly, we study the innovation method in the government and their likely mediate position for getting growth and bigger success in SMEs. This document is developed in the next way. The first branch shows the arrangement of the academic structure, an analysis of observed research available in

the text, and the hypotheses to literature. The second branch explains the method, the example, and the validation of the changeable used. The third branch shows the outcome of the hypothesis. Lastly, the conclusions and the conversation of the research are presented (López-Nicolás & Meroño-Cerdán, 2011).

Table 1: Adoption of Innovation Impact on Sales in Thailand

	R&D Spending $US Million	Sales $US Million	Intensity % of Sales
Apple	1333	42905	3.1
Google	2893	23651	12.0
3M	1293	23123	5.6
GE	3300	155777	2.1
Toyota	7822	204363	3.8
Microsoft	9010	58437	15.4
P&G	2044	79029	2.6
IBM	5820	95759	6.1
Samsung	6002	109541	5.5
Intel	5653	35127	16.1

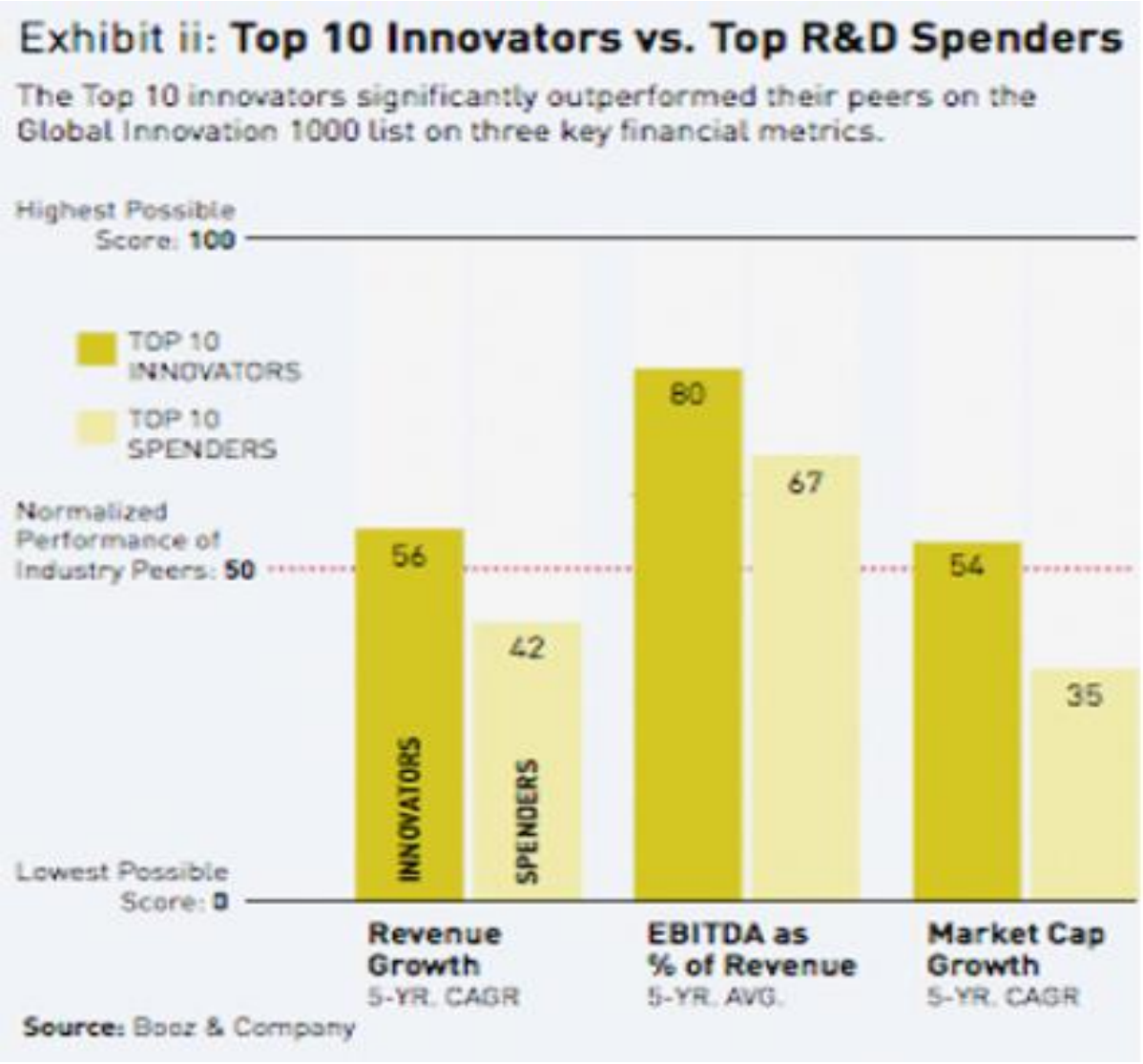

Figure 1. Adoption of Innovation Impact on Sales in Thailand

LITERATURE AND HYPOTHESIS DEVELOPMENT

KM has its start in a theoretical viewpoint based on the theory that occupies the absorptive ability of workers to be innovative (Jermsittiparsert & Boonratanakittiphumi, 2019; Saengchai, Sawasdee, & Jermsittiparsert, 2019). KM gives attention to extracting information from assets, competitors and skill R&D that produce an outcome in a government. Information is removing from mutually outside and inside the business using a twisted modal. This model occupies the members of each part of the

shapes of the government and allows them to get benefits (Makri, Lane, & Gomez-Mejia, 2006). Other theories only think of clear information as the income to produce output and innovation in a government. On the other hand, there is an approach that attention on clear information for the success of governmental goals. KM is a regular method to attain, use and divide creative information in the method of civilizing the presentation of government. KM is extremely vital for the rate of trade. KM encourages the move of knowledge for the aim of pretty the capacity of workers to rise the governmental civilization. This business plan is a successful method to support the advance and to raise success and competitiveness in trades of unlike sizes (Johannessen, Olaisen, & Olsen, 1999). In spite of aggressive instruments that produce aggressive benefit in trade, it is a trade's work that ruins in growth (Rosenbusch, Brinckmann, & Bausch, 2011).

Organizations on their method of knowledge have skilled phases and copy to advance their KM method. The text shows a huge success of methods to gauge in the governments (Pitt & Tucker, 2008). The most standard in the text is the personal-oriented and the trades' process-centric methods. These methods have been worn as a reference to decide the body of the context that structures our study method, which is planned to calculate information organization in the SMEs. The method gives attention to the personal and contributes to the shape of the width linked to the training and shape of being funds (Gluch, Gustafsson, & Thuvander, 2009). The guidance of the workers is a trade's work that rises academic funds and produces a high price for the government. The preceding method gives the root of our method with observe to the meaning and vitality of utilizing of ICT for governments for the gaining of information, the cargo space of the knowledge the civilization to divide it, and the gift to regulative the information (Yamin, Gunasekaran, & Mavondo, 1999). The information needs in a government must run and have a helpful shock on the attainment of business objectives are based on the realization and outstanding strategy and plain definition of policy in information organization. The detail and gaining of organization information are important to raise the capacity of the worker. Models that give attention to these methods carry our model in works of problems linked to the pitchy, including governmental civilization and the roles of information management (Salter & Torbett, 2003). In a KM method, the result of the organization of information, innovation, and presentation in the SMEs 144 governmental civilization is collected of the attitude, principles, and values of the organization from the manager to the worker at minor hierarchical levels (Verhees & Meulenberg, 2004).

KM promotes the endurance of business by boosting attitude meant at innovation. Innovation is linked to the information, presentation, and capacities of the organization. So, KM becomes a piece of the planned creation of an organization and give oblique help for innovation outcomes. KM can support SMEs to gain most education being important and improved talent, as fit as the higher gaining of external and internal information help by fresh education skills. Newly, KM has been worn to produce innovation and presentation by the cluster of SMEs (Tsai, 2001).

Training is an important issue in the payment of KM to governments, and it is yet most so with observe to SMEs (H. Li & Atuahene-Gima, 2002). So, organizations must bid teaching chances to grow and raise information to divide worker experiences. Teaching is unwritten as aim proves of sensible attitudes that allow the gaining of ok knowledge of job linked to the basis for the life of an SME. KM can control the capacities if workers by the training, reward, and motivation to get importance and to grow fresh information in a government. In a method of KM, worker training involves a vital task in the getting of governmental goals (Erlend Nybakk & Eric Hansen, 2008). Human income can obtain information outside and inside the organization by other workers and training. The inclusion ability, for instance, training is basic to worker training not just with observe to abstract education but as well in the growth of industrial skills. The training and teaching of workers are linked to innovation in conditions of the organization asset in R&D and the training device growth (Feeny & Rogers, 2003). Managers of little trades with a huge level of information and training give attention mainly to the advance of their goods, where controllers of normal-sized enterprises, innovation labors give attention each on goods and army and on the process. Training acting moderate jobs and has an important power on the information and skills need to support and raise the power of innovation, output, aggressive benefits and presentation in SMEs (Theyel, 2000). Based on previous, the next hypothesis arises:

H1. An advanced level of training for workers in SMEs contributes positively to the stage of innovation and business performance in Thailand.

Policies governments must focus on producing policies and planning that guarantee an aggressive benefit. A plan is clear as a plan or model that checks aims, policies and chronological events that guide to a solid governmental map (Ndubisi & Iftikhar, 2012). Given that roles are a plan, rules are described as an act aim having policies and tasks of each part of a government's work. Rules and plans within a method of KM submit to polices, the situation for the employ of the education, and the defense of brain assets (Shergill & Nargundkar, 2005). These works are a piece of a suppuration strategy that produces aggressive benefits for enterprises. By the organization of strategies and rules for the draw on the knowledge, KM has been recognized as a vital part to produce images and increase innovation. Research of SMEs in unlike countries tells that the acceptance of rules, sensible human income and information management rules add to the output of the organization and have a positive crash on innovation. Some plans depend on human funds where another layer on the education of skill is. These plans have a helpful impacted on an advanced job in SMEs (Naranjo-Valencia, Jiménez-Jiménez, & Sanz-Valle, 2016). When there is a mixture of each plan of KM, there is a leaning near a higher crash on innovation. Other research highlights the basic policy of KM by accepting firm inner rules that powerfully hold imagination at job and support innovation (Shergill & Nargundkar, 2005). Rules that are based on the safety of information support governments to have a higher presentation of the business (Erlend Nybakk & Eric Hansen, 2008). The realization of plans and rules as an income to control information to a bigger power of R&D on goods, process and produce a bigger defer in the trades managements of information, innovation and presentation in SMEs (Hogan & Coote, 2014). Based on analysis of the text and provide research, this advanced id measured as follows:

H2. An advanced level of knowledge management policies, there is an advanced stage of innovation and performance of SMEs in Thailand.

The gaining of information it describes as the method of removal and developed ambitions, ideas and production by personals to support convert an organization into an active government. Information is obtainable by a verity of sources that might be external or internal. Workers then change these resources into fresh information. Information based on knowledge internalized and learned totally personal is recognized as clear information, and that in which you learn in the exteriorized and normal way from is observed as clear information (Hervas-Oliver, Sempere-Ripoll, & Boronat-Moll, 2014). SMEs seek agreement between the understanding of R&D and external and internal learning. This is just one of the more basic aspects of the running of innovation. From a planned viewpoint, the inner resources of the organization play a dual position in innovation so that they decide the risk of utilizing the outer information. In the final two decades, researches of innovation in mixture with the gaining of information point out that there is regular and basic abject in the way in which trades behavior innovative actions (Battor & Battor, 2010). A quick change in the situation and the area needed by the scientific advancements are push organizations to use mainly outer information (Bain, Mann, & Pirola-Merlo, 2001).

The outcome from diverse researches contains that an organization that is capable of good growth the gaining of the information and thinks it an important job can get governmental advantages each in advance and in the working outcome. Clear information is presently composed in enterprises by education skills for instance database, presentation, records, social networking and websites that are outside and inside the government and that help large change to processes and methodologies (Sok & O'Cass, 2011). Clear information lay on the skill of workers, suppliers, and clients is a vital part for organizations given the brain rate that it shows, which support to produce innovative ambitions (Jiménez-Jiménez & Sanz-Valle, 2011). The gaining of the information has become an important issue for the advancement of worker training and guides to the increase of the better works in innovation inside an organization. The gaining of information has important outcomes that guide to aggressive benefit, fresh goods growth, rise sales adaptations and betterment in innovation methods (McDermott & Prajogo, 2012a). Base on the mast analysis, the next hypothesis arises:

H3. An advanced stage of knowledge acquisition in SMEs has a positive power on an advanced stage of innovation and business performance in Thailand.

Governmental civilization is a planned trade's work in which the values and ideology of a government appear. Civilization is described as the model of common statements that a team has shaped, discover and grown by others, there are plans to high and advance innovation by the civilization in a government (Koellinger, 2008). For instance, on the other surface trades commonly have a huge mechanism to raise their opportunities for getting an education about their trades situation and advancing innovation actions (Lau, Tang, & Yam, 2010).

On the other hand, the common results of a range of researches presented that governmental civilization involves the loyalty, method of the morals, information of the business ideas and ambitions, and the expert morals value of workers that add to the everyday activities of the SMEs to make better, improve and advance innovation by the making and the growth of fresh goods. Principles, morals, aims, and expert morals more and more occupy you a vital position in enterprises to produce the number of customers and advance the connection between the co-workers and the providers. This is by faith, trust and group effort, which goal to get together both the commitments and hope generated. These events make payments to the age group of adaptations in working on the levels and also working on the events (McDermott & Prajogo, 2012b). Governmental civilization can have an effect on the innovation or the advancement of the project and enterprises of these, each negatively and positively. The adhocracy civilization fosters innovation or advances compass reading, where the civilization of the packing order is linked or makes a connection with the reproduction, limiting workers, advance, making, betterment; creativity and capacity to advance innovate (Tseng, Kuo, & Chou, 2008). A little company or organization must give attention on the agreement of an attitude that lay on the values or the principles that give benefit to the workers to assign to the right use of the education in the database method for the customers and clients, providers, suppliers and the workers (Ho, 2011). These work that is performed upper, make a payment importantly to the development of the innovation method and the process. These are laid on these outcomes (Hitt, Hoskisson, & Ireland, 1994). That we show the next hypothesis:

Institutes of the theory have collected to the research of the running of the information and the method in which that it needs to produce ambitions and fresh goods and to better output in a government. KM, by the active capacities, serves to make clear the victory or breakdown, the age group of economic presentation, ready for action or aggressive benefits, and innovation greater than the time of a government (Zhou, Hong, & Liu, 2013). The organizations that set away in the method or position of the innovation and prepared presentation have to adapt and accept the plan of the governmental civilization emphasizing support and move of the knowledge and the information from one place to the other for the reason that they have known the principle, value of the KM for are ready for actions (Van Auken, Madrid-Guijarro, & Garcia-Perez-de-Lema, 2008). KM is the answer issue in the making, improving and producing innovation, and it makes work and gives more attention as a launchpad to get and betterment of the presentation (Ngo & O'Cass, 2012). Over and over again, the governments provide in the making, improving and growing of the trades plans by gaining, achieving, transferring from one place to the other, using and getting the hold of the information. Governments are usually to get and hold the large best and improve management of the information, innovation, and presentation in the SMEs (Bossert, 1998).

On the other hand, in extra, some of these researches point out that some SMEs that fit in the KM into their human being property works be likely to be more advanced or innovative and to get, achieve and betterment trade and industry outcomes more simply. Furthermore, there is as well prove from the researches on the SMEs in the knowledge division that the running of information help and support by the IT help make easy the making and producing of the innovation and, growing, rise, making, betterment, in roll, increase both the output and success of the governments (Montes, Moreno, &

Morales, 2005). In the present study on the SMEs in the trade and industry division show and describe that KM is importantly connected to the innovation, allow and help the age group of the fresh goods and making, improvement and the betterment of the in the goods, products, processes, and method and impacting ready and the trades and industrials presentation (Y. Li, Zhao, & Liu, 2006). After analysis and checking the relationship and connection between the inconsistence variables in these researches, the next hypothesis is presented:

H4. An advanced stage of the innovation mediates among the employee training and advanced stage of the business performance in SMEs of Thailand.

H5. An advanced stage of the innovation mediates among the knowledge management policies and advanced stage of the business performance in SMEs of Thailand.

H6. An advanced stage of the innovation mediates among the knowledge acquisition and advanced stage of the business performance in SMEs of Thailand.

RESEARCH METHOD

The objectives associated with this article is to inspect the role of knowledge management policies, knowledge acquisition and employee training on the business performance of the employee of SMEs in Thailand. The objectives also include the inspection of the mediating role of high-level innovation among the links of knowledge management policies and business performance, knowledge acquisition, and business performance and, employee training and business performance. The innovation related employees of SMEs in Thailand are the respondents and data were gathered from them by using the questionnaires and PLS-SEM was used to check the hypotheses. Around 650 questionnaires were distributed among the respondent out of which only 470 valid responses were returned that was only 72.30 percent response rate. All the constructs have 37 items out of which 6 items belong to the dependent variable such as business performance (BP). 16 items belong to an independent variable named employee training (ET), five items belong to knowledge management policies (KMP) and five items are also belonged to knowledge acquisition (KA). Finally, five items belong to the mediating variable namely a high level of innovation (HLI).

RESEARCH FRAMEWORK

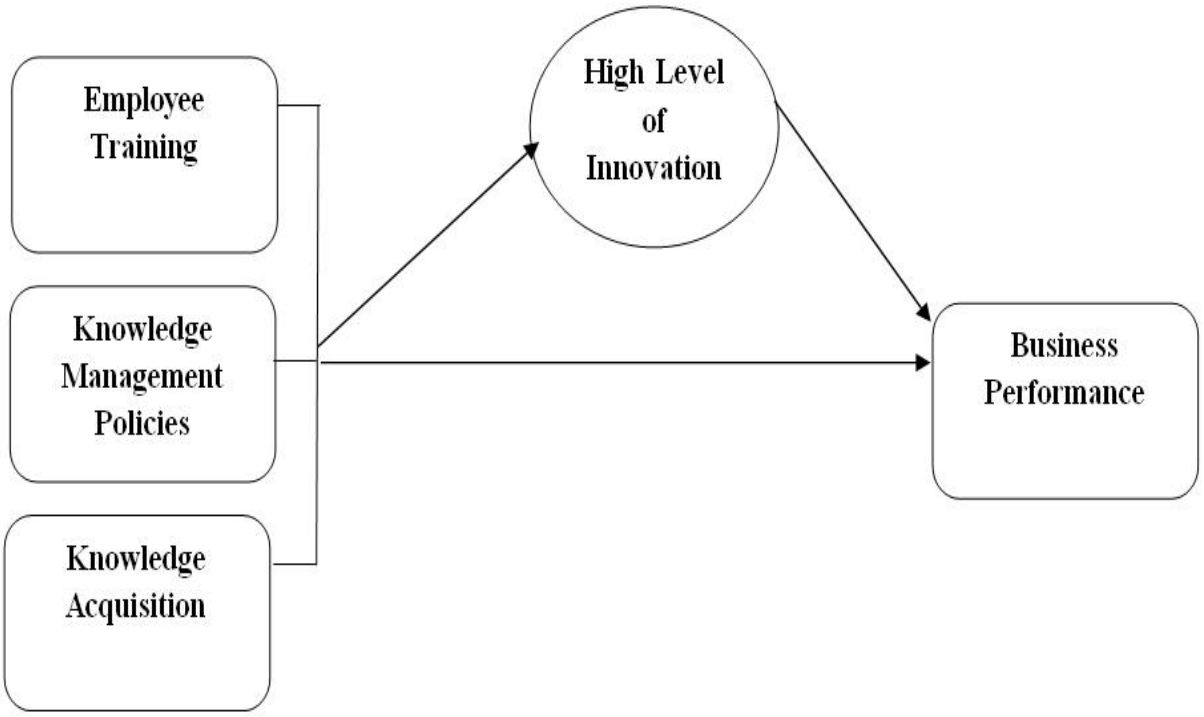

Figure 2. Theoretical Framework

FINDINGS

The findings show the convergent validity that means items are correlated or not and the statistics show the items are highly correlated and convergent validity is valid. Table 2 given below show the convergent validity.

Table 2: Convergent Validity

Constructs	Items	Loadings	Alpha	CR	AVE
Employee Training	ET1	0.862	0.965	0.969	0.659
	ET2	0.687			

	ET3	0.761			
	ET4	0.819			
	ET5	0.743			
	ET6	0.789			
	ET7	0.863			
	ET8	0.850			
	ET9	0.836			
	ET10	0.840			
	ET11	0.821			
	ET12	0.824			
	ET13	0.793			
	ET14	0.839			
	ET15	0.823			
	ET16	0.820			
Business Performance	BP1	0.846	0.908	0.929	0.684
	BP2	0.801			
	BP3	0.838			
	BP4	0.849			
	BP5	0.829			
	BP6	0.800			
Knowledge Management Policies	KMP1	0.941	0.959	0.968	0.858
	KMP2	0.894			
	KMP3	0.926			
	KMP4	0.926			
	KMP5	0.945			
Knowledge Acquisition	KA1	0.858	0.922	0.941	0.761
	KA2	0.871			
	KA3	0.879			
	KA4	0.889			
	KA5	0.866			
High Level Innovation	HLI1	0.981	0.965	0.974	0.884
	HLI2	0.982			
	HLI3	0.756			
	HLI4	0.980			
	HLI5	0.981			

The first method to check the discriminant validity is the Fornell Larcker. According to this method, constructs are not highly correlated because the link with the construct itself is higher than the other. Table 3 given below shows the Fornell Larcker criteria of discriminant validity.

Table 3: Fornell Larcker

	ET	**BP**	**KMP**	**KA**	**HLI**
ET	0.812				
BP	0.510	0.827			
KMP	0.158	0.186	0.927		
KA	0.436	0.380	0.162	0.873	

HLI	0.856	0.484	0.169	0.363	0.940

The second method to test the discriminant validity is cross-loadings. According to this method, constructs are not highly correlated because the first value is higher than the rest. Table 4 given below shows the cross-loadings criteria of discriminant validity.

Table 4: Cross-loadings

	ET	**BP**	**KMP**	**KA**	**HLI**
ET1	**0.862**	0.463	0.098	0.358	0.712
ET2	**0.687**	0.322	0.122	0.342	0.521
ET3	**0.761**	0.395	0.117	0.348	0.643
ET4	**0.819**	0.385	0.102	0.377	0.669
ET5	**0.743**	0.392	0.175	0.331	0.657
ET6	**0.789**	0.298	0.063	0.355	0.643
ET7	**0.863**	0.450	0.106	0.355	0.713
ET8	**0.850**	0.447	0.150	0.371	0.783
ET9	**0.836**	0.448	0.152	0.355	0.754
ET10	**0.840**	0.457	0.214	0.340	0.740
ET11	**0.821**	0.444	0.114	0.363	0.710
ET12	**0.824**	0.386	0.103	0.374	0.664
ET13	**0.793**	0.307	0.071	0.350	0.642
ET14	**0.839**	0.456	0.193	0.341	0.744
ET15	**0.823**	0.466	0.137	0.359	0.747
ET16	**0.820**	0.448	0.116	0.356	0.721
BP1	0.431	**0.846**	0.162	0.331	0.389
BP2	0.440	**0.801**	0.157	0.315	0.366
BP3	0.382	**0.838**	0.150	0.284	0.382
BP4	0.418	**0.849**	0.152	0.336	0.392
BP5	0.379	**0.829**	0.144	0.297	0.366
BP6	0.467	**0.800**	0.156	0.319	0.489
KMP1	0.136	0.190	**0.941**	0.150	0.140
KMP2	0.176	0.198	**0.894**	0.147	0.183
KMP3	0.140	0.131	**0.926**	0.150	0.156
KMP4	0.146	0.136	**0.926**	0.158	0.162
KMP5	0.129	0.193	**0.945**	0.146	0.135
KA1	0.327	0.335	0.124	**0.858**	0.275
KA2	0.393	0.328	0.140	**0.871**	0.327
KA3	0.365	0.319	0.138	**0.879**	0.291
KA4	0.394	0.302	0.189	**0.889**	0.337
KA5	0.415	0.370	0.118	**0.866**	0.348
HLI1	0.795	0.449	0.169	0.331	**0.981**
HLI2	0.792	0.446	0.160	0.328	**0.982**
HLI3	0.824	0.467	0.129	0.372	**0.756**
HLI4	0.788	0.454	0.164	0.334	**0.980**
HLI5	0.801	0.444	0.168	0.332	**0.981**

The third method to check the discriminant validity is the Heterotrait and Monotrait (HTMT) ratio. According to this method, constructs are not highly correlated because the link with the construct itself is higher than the other.

Table 3 given below shows the HTMT ratio criteria of discriminant validity.

Table 5: Heterotrait and Monotrait Ratio

	ET	BP	KMP	KA	HLI
ET					
BP	0.537				
KMP	0.161	0.195			
KA	0.462	0.413	0.173		
HLI	0.882	0.512	0.174	0.383	

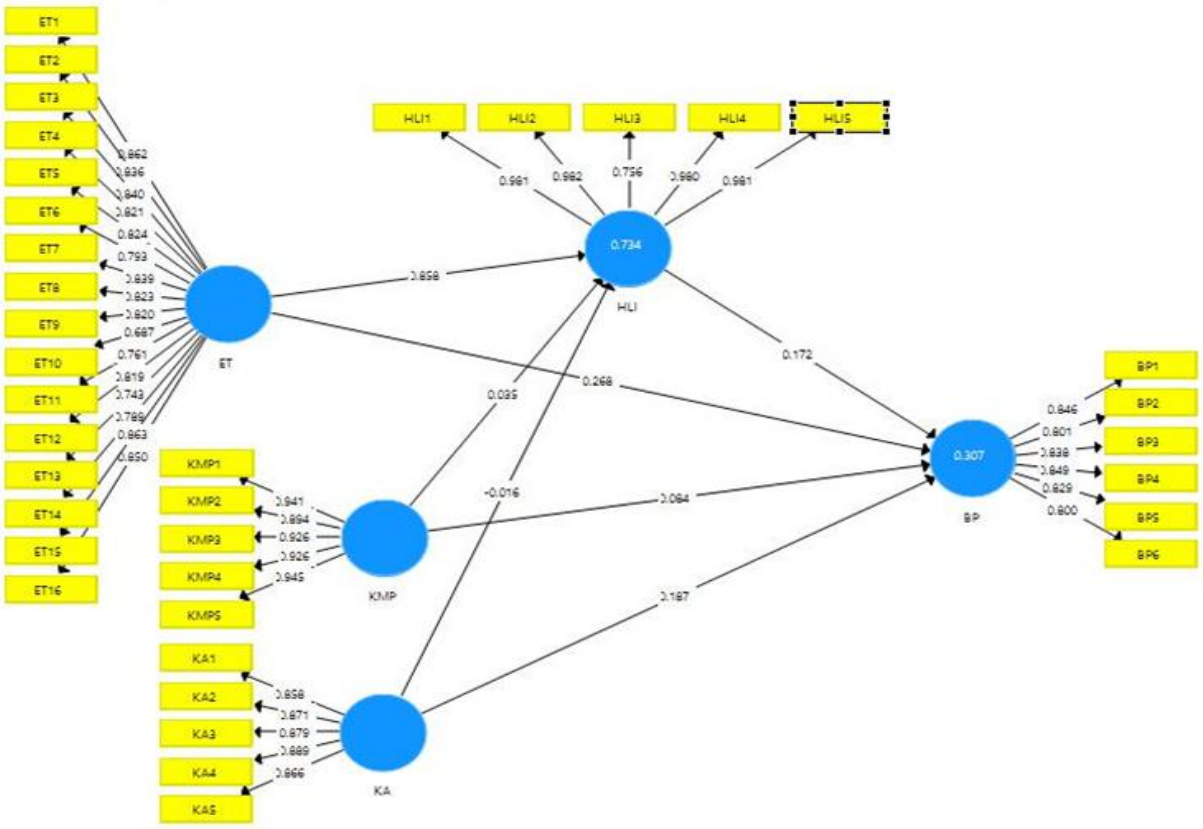

Figure 3. Measurement Model Assessment

The hypotheses are tested by using the path analysis and figures show that positive link among the ET and BP, KMP and BP, and KA and BP because of a positive sign attached with all the betas. In addition, relationships are significant and accept H1, H2, and H3. Moreover, HLI has positive mediation among the links of ET and BP, KMP and BP, and KA and BP and accept the H4, H5, and H6. Table 6 shows the path analysis.

Table 6: Path Analysis

	Beta	S.D.	t-values	p-values	L.L.	U.L.
ET -> BP	0.268	0.107	2.508	0.006	0.089	0.452
KMP -> BP	0.084	0.050	1.699	0.045	0.004	0.154
KA -> BP	0.187	0.062	3.017	0.001	0.074	0.274
HLI -> BP	0.172	0.101	1.713	0.044	0.006	0.324
ET -> HLI -> BP	0.148	0.086	1.71	0.044	0.002	0.277
KMP -> HLI -> BP	1.154	0.096	12.023	0.034	0.002	0.021
KA -> HLI -> BP	1.114	0.086	12.953	0.031	0.022	0.005

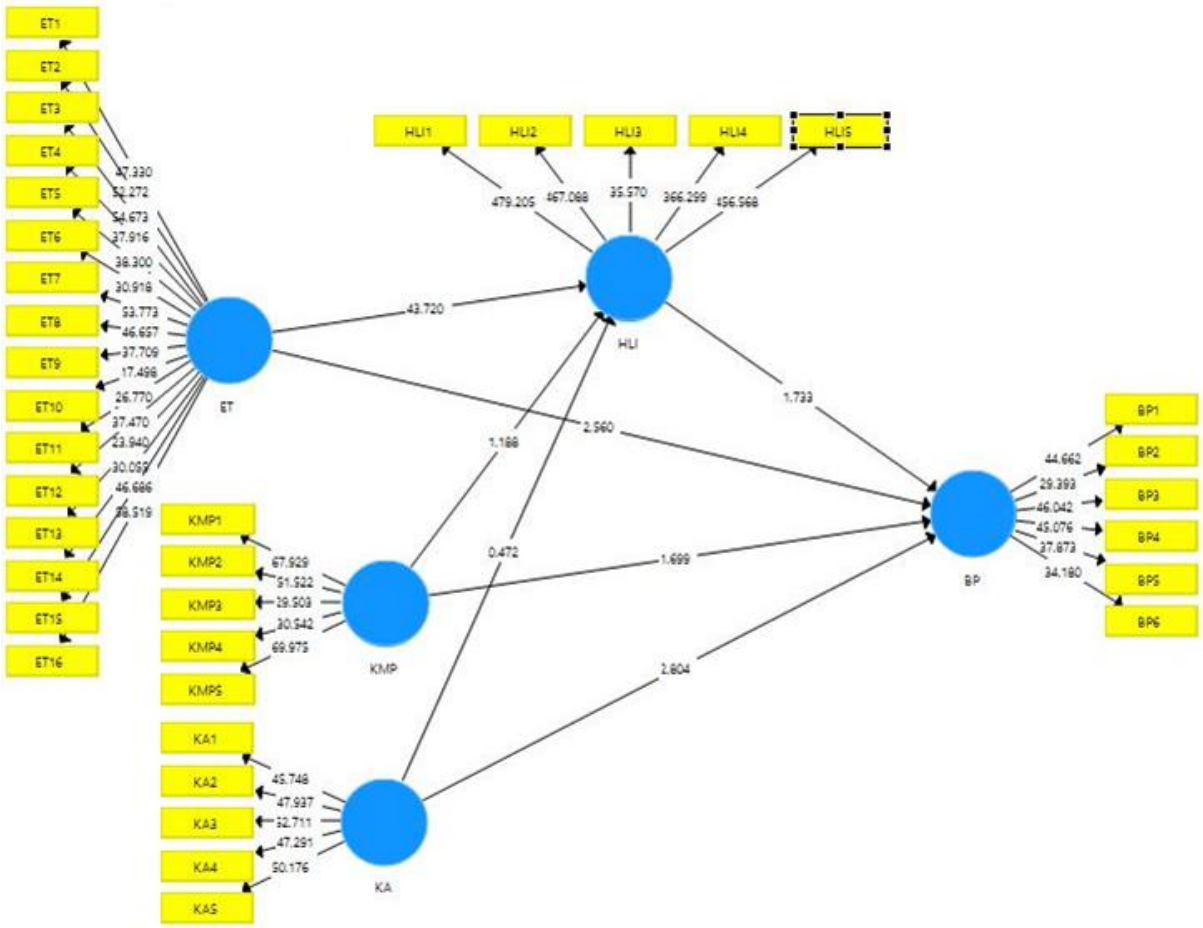

Figure 4. Structural Model Assessment

DISCUSSION

The findings exposed that knowledge management policies, knowledge acquisition, and employee training have positive nexus with business performance. The results also show that the high level of innovation positively mediates among the links of knowledge management policies and business performance, knowledge acquisition, and business performance and, employee training and business performance. The SMEs of Thailand are implemented the effective innovation that is the reason knowledge and training enhance the business performance.

CONCLUSION AND IMPLICATIONS

The conclusion of the study is that SMEs of Thailand are implemented effective innovation that is the reason knowledge and training enhance the business performance. These findings give the help to the new researchers in this area and also provide the guidelines to the regulation-making authorities that they must prepare the regulations to enhance the employees' interest in the adoption of nee innovation in the organization.

Limitations and Future Directions

The limitations include that three factors adopted by the study to predict the business performance and future study should include more factors. This study takes only a high level of innovation as a mediator and prospective study should add more mediators and moderators in their analysis.

REFERENCES

1. Bain, P. G., Mann, L., & Pirola-Merlo, A. (2001). The innovation imperative: The relationships between team climate, innovation, and performance in research and development teams. *Small group research, 32*(1), 55-73. doi:https://doi.org/10.1177/104649640103200103
2. Battor, M., & Battor, M. (2010). The impact of customer relationship management capability on innovation and performance advantages: testing a mediated model. *Journal of marketing management, 26*(9-10), 842-857. doi:https://doi.org/10.1080/02672570903498843
3. Bossert, T. (1998). Analyzing the decentralization of health systems in developing countries: decision space, innovation, and performance. *Social science medicine, 47*(10), 1513-1527. doi:https://doi.org/10.1016/S0277-9536(98)00234-2
4. Damanpour, F., & Evan, W. M. (1984). Organizational innovation and performance: the problem of" organizational lag". *Administrative science quarterly*, 392-409. doi:https://www.jstor.org/stable/2393031
5. Feeny, S., & Rogers, M. (2003). Innovation and performance: Benchmarking Australian firms. *Australian Economic Review, 36*(3), 253-264. DOI: https://doi.org/10.1111/1467-8462.00285

6. García-Morales, V. J., Ruiz-Moreno, A., & Llorens-Montes, F. J. (2007). Effects of technology absorptive capacity and technology proactivity on organizational learning, innovation, and performance: An empirical examination. *Technology Analysis Strategic Management Journal, 19*(4), 527-558. doi:https://doi.org/10.1080/09537320701403540
7. García-Morales, V. J., Matías-Reche, F., & Hurtado-Torres, N. (2008). Influence of transformational leadership on organizational innovation and performance depending on the level of organizational learning in the pharmaceutical sector. *Journal of Organizational Change Management, 34*(4), 34-39. doi:https://doi.org/10.1108/09534810810856435
8. Gluch, P., Gustafsson, M., & Thuvander, L. (2009). An absorptive capacity model for green innovation and performance in the construction industry. *Construction Management Economics, 27*(5), 451-464. doi:https://doi.org/10.1080/01446190902896645
9. Hervas-Oliver, J.-L., Sempere-Ripoll, F., & Boronat-Moll, C. (2014). Process innovation strategy in SMEs, organizational innovation and performance: a misleading debate? *Small Business Economics, 43*(4), 873-886. doi:https://doi.org/10.1007/s11187-014-9567-3
10. Hitt, M. A., Hoskisson, R. E., & Ireland, R. D. (1994). A mid-range theory of the interactive effects of international and product diversification on innovation and performance. *Journal of Management, 20*(2), 297-326. DOI: https://doi.org/10.1111/j.1530-9134.2011.00301.x
11. Ho, L. A. (2011). Meditation, learning, organizational innovation, and performance. *Industrial Management Data Systems, 32*(4), 32-38. doi:https://doi.org/10.1108/02635571111099758
12. Hogan, S. J., & Coote, L. V. (2014). Organizational culture, innovation, and performance: A test of Schein's model. *Journal of Business Research, 67*(8), 1609-1621. doi:https://doi.org/10.1016/j.jbusres.2013.09.007
13. Jansen, J. J., Van Den Bosch, F. A., & Volberda, H. W. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management Science, 52*(11), 1661-1674. doi:https://doi.org/10.1287/mnsc.1060.0576
14. Jermsittiparsert, K. & Boonratanakittiphumi, C. (2019). The Mediating Role of Knowledge Management and the Moderating Role of Additive Manufacturing (Industry 4.0) in the Relationship between Knowledge Management Capability and Firm Performance: A Case of KPMG Thailand. International Journal of Innovation, Creativity and Change, 8(8), 430-449.
15. Jiménez-Jiménez, D., & Sanz-Valle, R. (2011). Innovation, organizational learning, and performance. *Journal of business research, 64*(4), 408-417. doi:https://doi.org/10.1016/j.jbusres.2010.09.010
16. Johannessen, J. A., Olaisen, J., & Olsen, B. (1999). Strategic use of information technology for increased innovation and performance. *Information management computer security, 34*(5), 40-54. doi:https://doi.org/10.1108/09685229910255133
17. Koellinger, P. (2008). The relationship between technology, innovation, and firm performance—Empirical evidence from e-business in Europe. *Research Policy, 37*(8), 1317-1328. doi:https://doi.org/10.1016/j.respol.2008.04.024
18. Lau, A. K., Tang, E., & Yam, R. C. (2010). Effects of supplier and customer integration on product innovation and performance: Empirical evidence in Hong Kong manufacturers. *Journal of product innovation management, 27*(5), 761-777. doi:https://doi.org/10.1111/j.1540-5885.2010.00749.x
19. Li, H., & Atuahene-Gima, K. (2002). The adoption of agency business activity, product innovation, and performance in Chinese technology ventures. *Strategic Management Journal, 23*(6), 469-490. doi:https://doi.org/10.1002/smj.233
20. Li, Y., Zhao, Y., & Liu, Y. (2006). The relationship between HRM, technology innovation and performance in China. *International journal of manpower, 34*(5), 32-38. doi:https://doi.org/10.1108/01437720610708284
21. Lindgreen, A., Hingley, M., Trienekens, J., van Uffelen, R., Debaire, J., & Omta, O. (2008). Assessment of innovation and performance in the fruit chain. *British Food Journal, 43*(4), 34-48. doi:https://doi.org/10.1108/00070700810844812
22. López-Nicolás, C., & Meroño-Cerdán, Á. L. (2011). Strategic knowledge management, innovation, and performance. *International journal of information management, 31*(6), 502-509. doi:https://doi.org/10.1016/j.ijinfomgt.2011.02.003
23. Makri, M., Lane, P. J., & Gomez-Mejia, L. R. (2006). CEO incentives, innovation, and performance in technology-intensive firms: a reconciliation of outcome and behavior-based incentive schemes. *Strategic Management Journal, 27*(11), 1057-1080. doi:https://doi.org/10.1002/smj.560
24. Mazzola, E., Bruccoleri, M., & Perrone, G. (2012). The effect of inbound, outbound and coupled innovation on performance. *International Journal of Innovation Management, 16*(06), 1240008. doi:https://doi.org/10.1142/S1363919612400087
25. McDermott, C. M., & Prajogo, D. I. (2012a). Service innovation and performance in SMEs. *International Journal of Operations Production Management, 32*(2), 12-19. doi:https://doi.org/10.1108/09600030910962249
26. McDermott, C. M., & Prajogo, D. I. (2012b). Service innovation and performance in SMEs. *International Journal of Operations Production Management, 23*(2), 12-22. doi:https://doi.org/10.1108/01443571211208632
27. Mee-ngoen, B., Sirariyakul, T., Limphothong, S., Tomcharoen, N., & Jermsittiparsert, K. (2020). Innovativeness as Antecedents to Firm Performance: The Mediating Role of Competitive Advantage and Supply Chain Flexibility of Manufacturing Firms. International Journal of Supply Chain Management, 9(2), 385-392.
28. Montes, F. J. L., Moreno, A. R., & Morales, V. G. (2005). Influence of support leadership and teamwork cohesion on organizational learning, innovation, and performance: an empirical examination. *Technovation, 25*(10), 1159-1172. doi:https://doi.org/10.1016/j.technovation.2004.05.002

29. Naranjo-Valencia, J. C., Jiménez-Jiménez, D., & Sanz-Valle, R. (2016). Studying the links between organizational culture, innovation, and performance in Spanish companies. *Revista Latinoamericana de Psicología, 48*(1), 30-41. doi:https://doi.org/10.1016/j.rlp.2015.09.009
30. Ndubisi, N. O., & Iftikhar, K. (2012). Relationship between entrepreneurship, innovation, and performance. *Journal of Research in Marketing entrepreneurship, 32*(4). 111-115. doi:https://doi.org/10.1108/14715201211271429
31. Ngo, L. V., & O'Cass, A. (2012). In search of innovation and customer-related performance superiority: The role of market orientation, marketing capability, and innovation capability interactions. *Journal of product innovation management, 29*(5), 861-877. DOI: https://doi.org/10.1111/j.1540-5885.2012.00939.x
32. Nybakk, E., & Hansen, E. (2008). Entrepreneurial attitude, innovation, and performance among Norwegian nature-based tourism enterprises. *Forest Policy Economics, 10*(7-8), 473-479. doi:https://doi.org/10.1016/j.forpol.2008.04.004
33. Nybakk, E., & Hansen, E. (2008). Entrepreneurial attitude, innovation, and performance among Norwegian nature-based tourism enterprises. *Forest Policy Economics, 10*(7-8), 473-479. doi:https://doi.org/10.1016/j.forpol.2008.04.004
34. Pitt, M., & Tucker, M. (2008). Performance measurement in facilities management: driving innovation? *Property management, 32*(3), 21-25. doi:https://doi.org/10.1108/02637470810894885
35. Rosenbusch, N., Brinckmann, J., & Bausch, A. (2011). Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs. *Journal of Business Venturing, 26*(4), 441-457. doi:https://doi.org/10.1016/j.jbusvent.2009.12.002
36. Saengchai, S., Sawasdee, A., & Jermsittiparsert, K. (2019). The Knowledge Management, Product Innovation, and Process Innovation as Antecedents of Sports Manufacturing Firms of Thailand. Journal of Human Sport and Exercise, 14(5 Proc), S2217-S2231. DOI: 10.14198/jhse.2019.14.Proc5.40.
37. Salter, A., & Torbett, R. (2003). Innovation and performance in engineering design. *Construction Management Economics, 21*(6), 573-580. doi:https://doi.org/10.1080/0144619032000134101
38. Shergill, G. S., & Nargundkar, R. (2005). Market orientation, marketing innovation as performance drivers: extending the paradigm. *Journal of Global Marketing, 19*(1), 27-47. doi:https://doi.org/10.1300/J042v19n01_03
39. Sok, P., & O'Cass, A. (2011). Achieving superior innovation-based performance outcomes in SMEs through innovation resource–capability complementarity. *Industrial Marketing Management, 40*(8), 1285-1293. DOI: https://doi.org/10.1108/02634500910944995
40. They, G. (2000). Management practices for environmental innovation and performance. i*nternational journal of operations production management, 23*(3), 23-27. doi:https://doi.org/10.1108/01443570010304288
41. Tsai, W. (2001). Knowledge transfer in Intra-organizational networks: Effects of network position and absorptive capacity on business unit innovation and performance. *Academy of management journal, 44*(5), 996-1004. doi:https://doi.org/10.5465/3069443
42. Tseng, C.-Y., Kuo, H.-Y., & Chou, S.-S. (2008). Configuration of innovation and performance in the service industry: evidence from the Taiwanese hotel industry. *The Service Industries Journal, 28*(7), 1015-1028. doi:https://doi.org/10.1080/02642060701882080
43. Van Auken, H., Madrid-Guijarro, A., & Garcia-Perez-de-Lema, D. (2008). Innovation and performance in Spanish manufacturing SMEs. *International Journal of Entrepreneurship Innovation Management, 8*(1), 36-56.
44. Verhees, F. J., & Meulenberg, M. T. (2004). Market orientation, innovativeness, product innovation, and performance in small firms. *Journal of small business management, 42*(2), 134-154.
45. Yamin, S., Gunasekaran, A., & Mavondo, F. T. (1999). Innovation index and its implications on organizational performance: a study of Australian manufacturing companies. *International Journal of Technology Management, 17*(5), 495-503. doi:https://doi.org/10.1504/IJTM.1999.002733
46. Zhou, Y., Hong, Y., & Liu, J. (2013). Internal commitment or external collaboration? The impact of human resource management systems on firm innovation and performance. *Human Resource Management, 52*(2), 263-288. DOI: https://doi.org/10.1002/hrm.21527