Linking Organisation Learning To Dynamic Capability For Sustainability

Jo Jhony M.M[1], Asnan Furinto[2], Boto Simatupang[3]

[1]Bina Nusantara University, Doctor Research of Management, Jln. Kebon Jeruk Raya No. 27, Jakarta Barat 11530 , Jakarta, Indonesia.

[2],[3]Bina Nusantara University, Jln. Kebon Jeruk Raya No. 27, Jakarta Barat 11530, Indonesia.

Email: [1]jo,jhony@Binus.ac.id, [2]afurinto@Binus.edu,[3] bsimatupang@Binus.edu

ABSTRACT

The business model, Innovation for Sustainability, continues to change conceptual thinking of sustainable development toward dynamic capability. The reason behind this change still lacks a general theory to support dynamic capability for sustainability. This paper's objective is to examine and to test organisational learning. The antecedent that supports dynamic capability needs to demonstrate a linkage. This research examines the significant impact of organisational learning to construct a factor of dynamic capability for sustainability. This consists of sensing, seizing, and reconfiguration using a quantity survey of 100 estate or mill managers in the oil palm industry. Data was analysed using the SEM-PLS 3.0 application with the result that all dimensions of organisation learning that consist of a commitment to learning, shared vision, and open-minded, have a significant relation to sensing, seizing, and reconfiguration capability. Shared vision has no significant impact on seizing capability. This study clarifies the empirical findings of dynamic capability for sustainability and needs further replication and cross-validation. This study is the first empirical research of the relationships and effects on organisational learning to the dynamic capability for sustainability.

Keywords

Business Model, Innovation, Sustainability, Organisational Learning, Dynamic Capability.

Article Received: 10 August 2020, Revised: 25 October 2020, Accepted: 18 November 2020

Introduction

The business model for sustainability continues to change the conceptual thinking of approaching sustainable development to dynamic capability. Adopting a business model approach to innovation for sustainability helps companies understand how strategic sustainability and performance objectives can be integrated into successful business practices, including external stakeholders. Inigo, Albareda & Ritala (2017) describe the business model innovation for sustainability as being conceptualised to evolutionary and radical approaches, and disaggregated into different sensing, seizing and reconfiguring capabilities. (Inigo, Albareda, & Ritala, 2017)According to Qiang Wu, Qile He and Yanqing Duan, (2013) there have been highly correlated relationships between dynamic capability and company sustainability with monitoring capability (ability to identify sustainability requirements); seizing capability (the ability to recognise and achieve sustainable development opportunities), and recognising capability (the ability to modify existing processes in business processes/practices).(Wu, He, & Duan, 2013)

The difficulty of developing new business models of sustainability stems from the challenges faced by organizations in identifying alternative ways of doing business, but also in overcoming inertial tendencies. Businesses seeking sustainability often fall victim to inertia, or the general tendency to preserve the status quo. A central challenge in developing new business models is to find novel ways of delivering and capturing value which will change the basis of competition (Yoo, 2008). According to Nidumolu, Prahalad, & Rangaswami (2009), developing new business models could mean change the business process through a successful in developing the capability for sustainability to adopt changes in technology, competition, regulation and customer needs and demands. (Nidumolu et al., 2009). As a result, Palm Oil Company searches for new ways of developing organizational capabilities by continuous adaptation and anticipation of the need for change. Organizational learning could be a solution to continuous adaptation and change, has therefore captured the imagination of managers seeking to survive the current turbulent operating environments (Yoo, 2008).

Relevant literature shows the relationship between organisational learning and dynamic capability (Kocoglu, Imamoglu & Ince, 2012, Ching-Yii.Lin & Chiu-Chu.Chang, 2012, Amui, Jabbour, de Sousa Jabbour, & Kannan, 2017, Barbaroux & Godé-Sanchez, 2007), and the relationship between dynamic capability with corporate sustainability. Wu et al. (2014), Cabral (2010), and Amui et al. (2017) show evidence that has a possible connection between organisational learning becomes antecedent, and supports Dynamic Capability for Sustainability (DCS) needs to be proven empirically has a strong linkage.

Literature Review

Organisational learning could be the primary factor in determining the changing process. Bernd Siebenhüner and Marlen Arnold Carl-von-Ossietzky's (2007) research found that a company will initiate and implement a method of sustainability-oriented learning when sustainability-related requirements exist in the personal and cultural attributes of the company that are supported by appropriate structures and learning mechanisms. (Siebenhüner & Arnold, 2007). The dimension of organisational learning from Baker & Sinkula (2007) consists of Commitment to Learn (CTL), Open-Mindedness (OM), and Shared Vision (SV) (Baker & Sinkula, 1999). These are potential key factors the company could use to build dynamic capabilities through different levels of organisational learning.

The Dynamic Capabilities Approach is built on the concept of Resources-Based Theory (RBV): the ability to integrate, build and reconfigure internal and external competencies to cope with rapid changes in the environment (D. Teece, Pisano, & Shuen, 1997) The dimension of dynamic capability consists of sensing, seizing, and reconfiguration capabilities. Sensing capability consists of analytical activities of the organisation to sense, learn, and interpret the signals reflecting the emerging environmental changes (D. J. Teece, 2007; Wu et al., 2013). Previous research based on qualitative research of eight companies in the Spanish Basque find the evidence for sensing, seizing and reconfiguring capability in a dynamic capability for sustainability goals in innovation (Inigo et al., 2017). However, this study presents a quantitative study the linkage of the inter-relationships' organization learning and DCS

For sustainability purposes, sensing capability (SC) means the organisation needs the ability to understand and analyse information from the environment, adjust to the development of government regulations (especially related to the environment) to gain new access to improve performance and update the latest information on sustainability and develop innovation in the field for implementation of sustainability. Organisations need to continue to explore new and different ways to understand the expectations and requirements of key stakeholders, looking for external sources of knowledge (partners, customers, research institutions) to develop innovative ideas for sustainability. (Wu et al., 2013)

Seizing Capability (SZ) is related to the indicator construct of absorptive capacity and innovative capability. It is similar to how an organisation uses knowledge from various sources to process production efficiently and quickly from external partners to acquire new skills or technologies, be ready to identify changes in work methods practically and apply them to field work for sustainability. The organisation should able to evaluate new ideas from stakeholders such as customers, vendors, surrounding communities and consider them in the development process.(Wu et al., 2013)

Reconfiguration capability (RC) is the organisation's culture that promotes innovation for sustainability. The organisation develops new competencies and learning cultures that stimulate innovation for sustainability. For that purpose, the organisation needs to have a useful overview of what it needs to face the challenges of sustainable development, and to help those responsible for enforcing sustainability practices within organisations. (Wu et al., 2013)

Committed to Learn (CTL) puts criteria learning at a crucial competitive advantage. Improvement and investment could have a significant impact on dynamic capability. CTL could be a significant factor in dynamic capability because learning about sustainability requires CTL on the new principles of sustainable development and certification procedures. (Baker & Sinkula, 1999). CTL could have significant impact on SC, SZ and RC. The hypotheses are:

H1a: CTL has a significant impact on SC
H1b: CTL has a significant impact on SZ
H1c: CTL has a significant impact on RC

Shared Vision (SV) consists of an indicator that the organisation has a clear concept vision and goal to achieve and share with the entire organisation. This includes all employees being committed to the purpose and who see themselves as partners in mapping the direction of the business unit. SV could have a significant impact on developing a component of dynamic capability for sustainability (Baker & Sinkula, 1999). The organisation needs the support of the entire staff to implement new sustainability practices. SV could have significant impact on SC, SZ and RC. Based on this argument, the hypotheses are:

H1a: SV has a significant impact on SC
H1b: SV has a significant impact on SZ
H1c: SV has a significant impact on RC

Open Mindedness (OM) is openness to new ideas. It relates to the method with which individuals approach the views that new ideas, innovations, or changes could be adopted. OM could have a significant impact on dynamic capability for sustainability (Baker & Sinkula, 1999). Managers need OM to implement new practices required by sustainability. OM could have significant impact on SC, SZ and RC. Based on this argument, the hypotheses are:

H1a: OM has a significant impact on SC
H1b: OM has a significant impact on SZ
H1c: OM has a significant impact on RC

Research Methodology

Operational Variables

Measuring constructs of organisational learning was carried out using an adapted questionnaire from "The Synergistic Effect of Market Orientation and Learning Orientation on Organisation Performance" (Baker & Sinkula, 1999). The questionnaire consisted of five questions on CTL, five questions on SV, and four questions on OM.

The indicator construct of SC consisted of one question adapted from absorptive capacity from Chen, Lin, & Chang (2009). Absorptive ability is an organisational ability to identify, assimilate, alter, and apply valuable external knowledge to combine with the organisation's internal capabilities (W. Cohen & Levinthal, 1990). Other indicators consist of two questions developed from the requirement of sustainability to adapt to government regulation changes and update information and regulation of sustainability. Two questions of sustainable innovation adapted from Maletič, Maletič, Dahlgaard, Dahlgaard-Park, & Gomišček (2016)'s "Effect of sustainability-oriented innovation practices on the overall organisational performance: an empirical examination" were also used.

Indicator to construct SZ consists of question from Chen et al's "The positive effects of relationship learning and absorptive capacity on innovation performance and competitive advantage in industrial market".(Lin & Chang, 2009) Three questions of innovative capability adapted from Akman & Yilmaz (2008) were also used. Innovative capability is the organisation's ability to develop innovations or new ideas to improve organisational performance. Innovative capability refers to an organisation's ability to create new products and markets by aligning creative, strategic orientation with innovative behaviours and processes (Wang & Ahmed, 2007)

Indicator to construct RC consists of one question from Innovative Capability adapted from Akman & Yilman

(2008) and two questions of sustainability-oriented innovation practice adapted from Maletič et al. (2016).

Data Collection and Sampling Technique

Data collection using a descriptive survey method was carried out using survey questionnaires distributed to 132 business unit heads working in private company of palm oil plantations (estate or mill managers) who were involved in sustainability innovation. However, only 116 questionnaires return and only 100 filled out completely. The number of sample size fulfills the requirement of sample size determination. The sampling technique was a simple random distribution with cross-sectional data. The questionnaire consisted of a 1-5 Likert scale. The sample calculated using Cochran's sample size formula for continuous data, with t = value for selected alpha with level of =1.96, s = estimate of standard deviation in the population with 5 point scale divided by 4 = 1.25, d = acceptable margin of error being estimated – 0.0625 (number of point on primary scale x acceptable margin of error = 0.05 = 5 x 0.05= 0.25). $n_o = (t)^2 (s)^2/ (d)^2 = (1.96)^2(1.25)^2/(0.25)^2 =$ 96,04 (Bartlett, Kotrlik, & Higgins, 2001).

Table 1. Respondent Profile

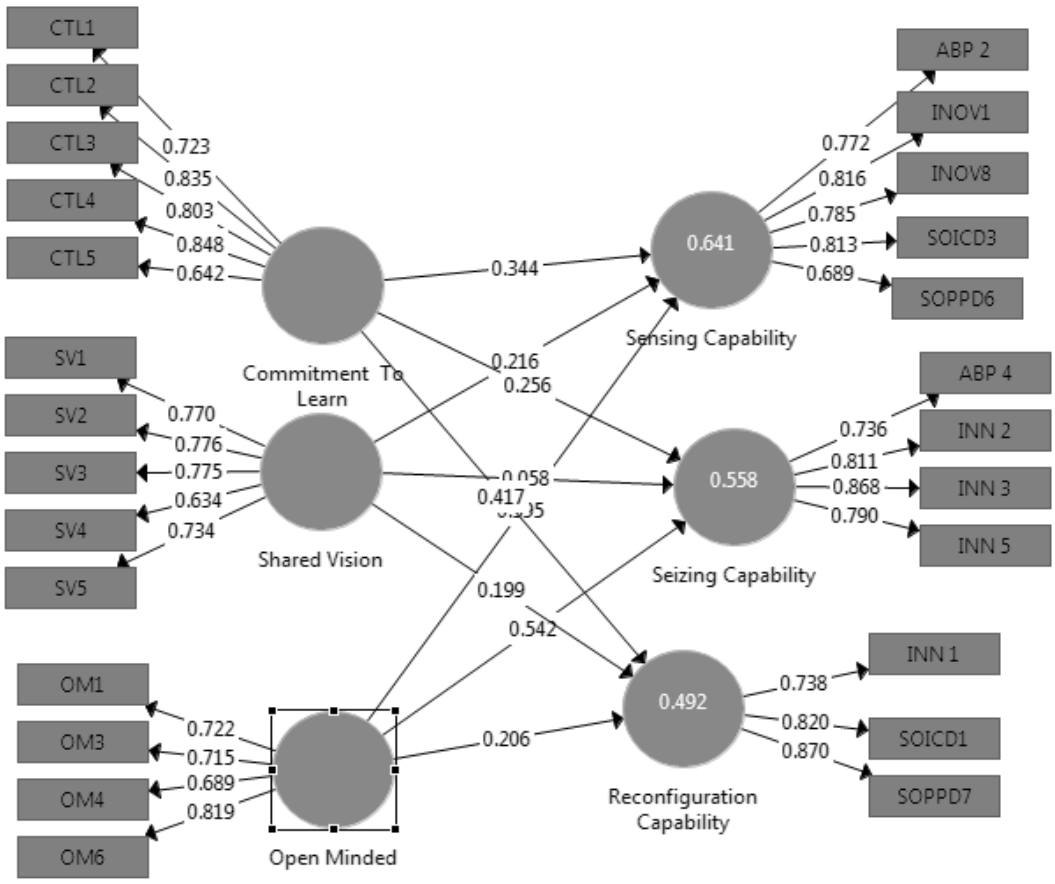
	Sample Distribution of Respondent Profile			
The Respondent Profile	Description	Qty	%	Description
Age of Respondent	30- 40	2	2	
	40- 50	65	65	
	>50	32	32	
Business Unit	Estate	79	79	
	Mill	21	21	

Reference: Questionnaire Survey

Measuring and Procedures.

In this research, the SMART PLS 3.0 was used, a Partial Least Squares (PL) Structural Equation Modelling (SEM), to analyse and simultaneously assess the psychometric properties of the measurement model and estimate the parameters of the structural model (J. F. J. Hair, Hult, Ringle, & Sarstedt, 2014). For this research, SMART PLS, 3.0 was chosen over other SEM software because SMART PLS 3.0 is a variance-based SEM that supports bootstrapping. It uses small data samples to estimate the path relationships in the model. 100 samples fulfil the requirement sample size minimum for three arrows pointing at a construct with a 0.05 significance level.(J. Cohen, 1998)

Figure 1. Relationship of Model



Reference: Data Processing Using SEM-PLS

Results And Discussions

Figure 1 shows the relationship between organisational learning to the dynamic capability for sustainability. This research used a first stage model to connect each dimension of the variables of organisational learning that consisted of CTL, SV, and OM to variables of DCS that consisted of sensing, seizing, and reconfiguration capability. All of the outer loadings of an indicator for each operational variable were above 0.6, which is acceptable for Exploratory Research (Chin, 1998).

Table 2. Construct Reliability and Validity of Testing

Variable	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
CTL	0.829	0.840	0.881	0.599
SV	0.793	0.810	0.857	0.547
OM	0.722	0.740	0.826	0.545
SC	0.835	0.840	0.883	0.603
SZ	0.814	0.820	0.878	0.644
RC	0.737	0.736	0.852	0.658

Reference: Data Processing Using SEM-PLS

Table 2 shows construct reliability and validity of testing for each of the operational variables to fulfil to the standard requirement. The Average Variance Extracted (AVE) used for the construct validity is more than 0.5. This exceeds the recommended threshold value 0.5 (Fornell & Larcker, 1981). The measurement model has good convergent validity and reliability. The composite reliability of this model ranges from 0.826 to 0.883. This exceeds the recommended threshold value of 0.70 (Nunnally, 1978). Therefore, this model has good composite reliability. Cronbach's alpha measures the internal consistency. This research shows the Cronbach's alpha ranges from 0.722 to 0.835, which is higher than the standard of 0.7 (Cronbach, 1987). According to Chin (1998), the acceptable threshold value of Cronbach's alpha in exploratory research is 0.7 or lower for an indicator of reliability at a significance level of $p<0.05$.(Chin, 1998)

Table 3. Discriminant Validity

Variable	CTL	OM	RC	SZ	SC	SV
CTL	**0.774**					
OM	0.531	**0.738**				
RC	0.653	0.523	**0.811**			
SZ	0.580	0.705	0.646	**0.802**		
SC	0.691	0.681	0.766	0.747	**0.776**	
SV	0.634	0.477	0.562	0.478	0.623	**0.740**

Reference: Data Processing Using SEM-PLS

Table 3 is used to test the parameters of the convergence validity. For each variable in Table 3, the bold diagonal numbers are higher than any other listed number. This means all measurements in the variables have high correlation and are valid to represent its latent variable. The process of SMART-PLS was conducted with 5000 sample bootstrapping with one tail and a significance $\alpha = 0.05$. An individual sign is used and changes as recommended by the Hair Model (J. F. Hair, Sarstedt, Ringle, & Mena, 2012). The results show:

1. Collinearity Statistics (VIF) are used to analyse the presence of a co-linearity problem. VIF value of CTL is 1.885, OM is 1.460, and SV is 1.752. Those VIF values are less than five. As a result, there is no co-linearity problem of exogenous constructs of the structural model.
2. R^2 of SC is 0.641, R^2 of SZ is 0.558, and R^2 of RC is 0.492. T-statistic of SC is 11.583, t-statistic of SZ is 6.873, and t-statistic of RC is 8.051. All of the variables have p-value = 0.000; this explains that both SC and SZ have moderate structural model and relationship because R^2 is between 0.5 and 0.75, but RC has low structural model and relationship because of $R^2 < 0.5$.
3. F^2 of CTL→ SC is 1.426, CTL→ SZ is 1.367, and CTL → RC is 1.476, All of F^2 are below 0.15, which means CTL gives low impact to sensing, seizing, and reconfiguration capability. F^2 of SV → SC is 1.003 SV→ SZ is 0.173, and SV → RC is 0.907. All of F^2 are below 0.15. These results mean SV gives low impact to SC, SZ, and RC. F^2 of OM → SC is 1.875 OM→ SZ is 2.270, and OM → RC is 0.907 this means OM gives medium impact to SC and SZ because F^2 is in between 0.15 to 0.25 but OM offers low implications to RC
4. Goodness of Fit (GoF) index for SC: $(0.5 \times 0.641)^{0.5} = 0.5661$, SZ $(0.5 \times 0.558)^{0.5} = 0.5282$, and RC = $(0.5 \times 0.492)^{0.5} = 0.4960$. All of GoF's three capabilities are higher than 0.36, which means all three capabilities of the model have better prediction power in comparison with GoF (Tenenhaus, Vinzi, Chatelin, & Lauro, 2005)

Table 4. Constructs Relationship Effect

H0	Total Effect	Path Coefficient	T - Statistics	P -Value	Result
H1a	CTL → SC	0.344	3.557	0.000	Significant
H1b	CTL → SZ	0.233	2.245	0.012	Significant
H1c	CTL → RC	0.417	3.570	0.009	Significant
H2a	SV → SC	0.216	2.210	0.027	Significant
H2b	SV →SZ	0.058	0.588	0.556	Not Significant
H2c	SV → RC	0.199	1.963	0.050	Significant
H3a	OM → SC	0.395	4.677	0.028	Significant
H3b	OM→ SZ	0.542	7.439	0.000	Significant
H3c	OM→ RC	0.206	2.192	0.028	Significant

Reference: Data Processing Using SEM-PLS

5. Table 4 shows construct a relationship of the total effect of CTL→ SC, CTL → SZ, CTL →RC, OM → SC, OM → SZ, OM → RC, SV→ SC, and SV →RC with T-statistic > 1.96. This means that H_0 was rejected and H1a, H1b, H1c, H2a, H2c, H3a, H3b, and H3c were accepted. H2b SV → SZ, with T-Statistic < 1.96 and P-Value = 0.556 shows that H_0 was accepted and $H2_b$ was rejected, which means SV has no significant impact to SZ

The result of this research demonstrates that most of the organisational learning dimensions support the impact of dynamic capability for sustainability. However, SV has no supported impact on SC. The results of this research are consistent with BMIS from the dynamic capabilities perspective by Inigo. (Inigo et al., 2017)

pared to other quantitative research, research by Jiao, Wei and Cui (2011) found that organisational learning had significant positive effects on dynamic ability, as did the role of partial mediation. The findings suggested that organisations could build dynamic capabilities through different levels of organisational learning in the context of an innovative and proactive atmosphere. The research by Ching-Yi, Lin, and Chiu-Chu and Chang (2012) developed a hypothetical framework to examine the relationship between organisational learning, environmental dynamics, and dynamic capabilities that demonstrates the impact of formal organisational learning as not being significant on dynamic capabilities. However, informal learning has a strong and positive effect on the dynamic ability of formal learning when the dynamic of the environment increases (Ching-Yii.Lin & Chiu-Chu.Chang, 2012)

Three gaps in the literature are addressed through empirical analysis. Firstly, because organisational learning is a key factor, the organisation can build dynamic capabilities through their ability to promote, develop, and enhance knowledge from learning and implement this in the form of sustainability innovation and dynamic capability practice. Second, this research attempts to configure the component of DCS from absorptive capacity, innovative capability, comply with government regulations, fulfil sustainability certification standards, and sustainable-oriented innovation practice. Finally, this study contributes to linking organisational learning to DCS by examining the relationship between these variables. The results show SC and SZ have moderate structural model and relationship, but RC has a low structural model and relationship.

There are managerial implications of this research. Managers should recognise the importance of developing an organisational learning program that consists of CTL, SV, and OM because these are keys in high performance and dynamic capability practice. This research also contributes to performance improvement when learning relates to the creation of knowledge, knowledge acquisition, and knowledge sharing. Palm oil companies have a dynamic capability for sustainability and could transform their knowledge from organisational learning into organisational innovation that benefits organisations. Organisations could absorb knowledge about sustainable development and the environment from within by innovating their business unit.

Conclusions

While the component of dynamic capability for sustainability still needs to be defined, especially in the palm oil industry that enters industrial era 4.0 need capability to change its business process with a high focus on sustainability(European Commission, 2017). Dynamic Capability takes part in the need for change, as well as learning how to respond to opportunities and threats, and achieving reconfiguration. The ability to develop, innovate and implement in a unit business for sustainable innovation is key to an organisations' success. This study developed a hypothesised framework for examining the relationship between organisational learning and dynamic capability for sustainability innovation. This framework was used to answer the question, did organisational learning have a link to developing the dynamic capability for sustainability practice? The result of this research demonstrated that most of the dimensions of organisational learning supported the impact of dynamic capability that could promote sustainability. However, Shared Vision had no supported impact on seizing capability.

A sustainable innovation-oriented organisation needs to have sensing capabilities that enhance its ability to recognize shifts in environments required for sustainable development and how shifts can affect its business based on its current capabilities. The second factor is seizing capability related to more research to explore how other factors influence developing in-depth knowledge creation based on plantation practices combined with sustainable development requirements compiled into enterprise standards as the capability of the organisation. (Wu et al., 2013). The third factor is reconfiguration capability related

to the internal creation of new skills, and the integration of these skills as guidelines to be implemented and/or distributed to the entire organisation. This study gives new insight into the role of organisational learning to broaden the perspective of dynamic capabilities for sustainability of the organisation's ongoing development area. Furthermore, to solve the limitation of research, there is a need to address other antecedents that influence dynamic capability for sustainability. Future research needs collect more samples to represent the population and combine relevant cases to carry out analysis and research on longitudinal time series study Overall, this paper is an empirical study to expand the limited knowledge and research in this field.

Acknowledgment

Thanks go to the organisers and participants of Sinarmas Plantation Conference 2017 for their input in this research.

References

[1] AKMAN, G., & YILMAZ, C. (2008). Innovative Capability, Innovation Strategy and Market Orientation: an Empirical Analysis in Turkish Software Industry. *International Journal of Innovation Management*, *12*(01), 69–111. https://doi.org/10.1142/S1363919608001923

[2] Amui, L. B. L., Jabbour, C. J. C., de Sousa Jabbour, A. B. L., & Kannan, D. (2017). Sustainability as a dynamic organizational capability: a systematic review and a future agenda toward a sustainable transition. *Journal of Cleaner Production*, *142*, 308–322. https://doi.org/10.1016/j.jclepro.2016.07.103

[3] Baker, W. E., & Sinkula, J. M. (1999). The Synergistic Effect of Market Orientation and Learning Orientation on Organizational Performance. *Journal of the Academy of Marketing Science*, *27*, 411–427. https://doi.org/10.1177/0092070399274002

[4] Barbaroux, P., & Godé-Sanchez, C. (2007). Acquiring core capabilities through organizational learning: Illustrations from the U.S. military organizations. *23rd EGOS Colloquium: Beyond Waltz – Dances of Individuals and Organization*, 1–25. Retrieved from http://hal.archives-ouvertes.fr/hal-00293534

[5] Bartlett, J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational Research : Determining Appropriate Sample Size in Survey Research, *19*(1), 43–50.

[6] Cabral, J. de O. (2010). Firms'dynamic Capabilities, Innovative Types and Sustainability: A Theoretical Framework. *Abepro.Org.Br*. Retrieved from http://www.abepro.org.br/biblioteca/enegep2010_TI_ST_119_775_15476.pdf

[7] Chen, Y.-S., Lin, M.-J. J., & Chang, C.-H. (2009). The positive effects of relationship learning and absorptive capacity on innovation performance and competitive advantage in industrial markets. *Industrial Marketing Management*, *38*(2), 152–158. https://doi.org/10.1016/j.indmarman.2008.12.003

[8] Chin, W. W. (1998). The Partial Least Squares Approach to Structural Equation Modeling. *Marcoulides, G.A. (Eds.), Modern Methods for Business Research*, (April), 295–336. Mahwah, NJ: Lawrence Erlbaum Associates.

[9] Ching-Yii.Lin, & Chiu-Chu.Chang. (2012). Organizational Learning , Environmental Dynamism and Dynamic Capabilities, 39–66.

[10] Cohen, J. (1998). *Statistical power analysis for the behavioral sciences*.

[11] Cohen, W., & Levinthal, D. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, *35*(1), 128. https://doi.org/10.2307/2393553

[12] Cronbach, L. J. (1987). Statistical tests for moderator variables: Flaws in analyses recently proposed. *Psychological Bulletin*, *102*(3), 414–417. https://doi.org/10.1037/0033-2909.102.3.414

[13] European Commission. (2017). Industry 4.0 in Agriculture : Focus on IoT aspects. *Digital Transformation Monitor*, (July), 1–6. Retrieved from https://ec.europa.eu/growth/tools-

databases/dem/monitor/sites/default/files/DTM_Agriculture 4.0 IoT v1.pdf

[14] Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), 39. https://doi.org/10.2307/3151312

[15] Hair, J. F. J., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. *Long Range Planning* (Vol. 46). https://doi.org/10.1016/j.lrp.2013.01.002

[16] Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, *40*(3), 414–433. https://doi.org/10.1007/s11747-011-0261-6

[17] Inigo, E. A., Albareda, L., & Ritala, P. (2017). Business model innovation for sustainability: exploring evolutionary and radical approaches through dynamic capabilities. *Industry and Innovation*, *24*(5), 515–542. https://doi.org/10.1080/13662716.2017.1310034

[18] Jiao, H., Alon, I., & Cui, Y. (2011). Environmental dynamism, innovation, and dynamic capabilities: the case of China. *Journal of Enterprising Communities: People and Places in the Global Economy*, *5*(2), 131–144. https://doi.org/10.1108/17506201111131550

[19] Kocoglu, I., Imamoglu, S. Z., & Ince, H. (2012). At the Intersection of Dynamic Capabilities and Organizational Learning: Organizational Learning Capability as a Determinant of Innovation and Performance. *Proceedings of the 7Th European Conference on Innovation and Entrepreneurship, Vols 1 and 2*, 384–393.

[20] Lin, M. J. J., & Chang, C. H. (2009). The positive effect of green relationship learning on green innovation performance: The mediation effect of corporate environmental ethics. *PICMET 2009 - 2009 Portland International Conference on Management of Engineering and Technology*, 2341–2348. https://doi.org/10.1109/picmet.2009.5261824

[21] Maletič, M., Maletič, D., Dahlgaard, J. J., Dahlgaard-Park, S. M., & Gomišček, B. (2016). Effect of sustainability-oriented innovation practices on the overall organisational performance: an empirical examination. *Total Quality Management & Business Excellence*, *27*(9–10), 1171–1190. https://doi.org/10.1080/14783363.2015.1064767

[22] Nidumolu, R., Prahalad, C. K., & Rangaswami, M. R. (2009). Why sustainability is now the key driver of innovation. *Harvard Business Review*, *87*(9), 57–64. https://doi.org/10.1109/EMR.2013.6601104

[23] Nunnally, J.C. (1978) Psychometric theory. 2nd Edition, McGraw-Hill, New York.

[24] Siebenhüner, B., & Arnold, M. (2007). Organizational learning to manage sustainable development. *Business Strategy and the Environment*, *16*(5), 339–353. https://doi.org/10.1002/bse.579

[25] Teece, D. J. (2007). Performance and microfoundations of (sustainable) enterprise peformance explicating dynamic capabilities. *Strategic Management Journal*, *28*(13), 1319–1350. https://doi.org/10.1002/smj.64()Received

[26] Teece, D., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509–533. https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z

[27] Tenenhaus, M., Vinzi, V. E., Chatelin, Y. M., & Lauro, C. (2005). PLS path

modeling. *Computational Statistics and Data Analysis*, *48*(1), 159–205. https://doi.org/10.1016/j.csda.2004.03.005

[28] Wang, C. L., & Ahmed, P. K. (2007). Dynamic capabilities: A review and research agenda. *International Journal of Management Reviews*, *9*(1), 31–51. https://doi.org/10.1111/j.1468-2370.2007.00201.x

[29] Wu, Q., He, Q., & Duan, Y. (2013). Explicating dynamic capabilities for corporate sustainability. *EuroMed Journal of Business*, *8*(3), 255–272. https://doi.org/10.1108/EMJB-05-2013-0025

[30] Wu, Q., He, Q., & Duan, Y. (2014). Dynamic capabilities for CSR management: towards identifying common processes. *Society and Business Review*, *9*(3), 276–297. https://doi.org/10.1108/SBR-01-2013-0010

[31] Yoo, W.-L. T. and S.-J. (2008). Organizational Learning Platform and New Product Development, (September), 1–3.

Outer Loading & T-Statistic Indicator

Indicator	Questionnaire	Outer Loading	T - Statistics	P - Value
CTL1	We basically agree that our business unit's ability to learn is the key to our competitive advantage	0.723	10.868	0.000
CTL2	The basic values of this business unit include learning as key to improvement.	0.835	25.356	0.000
CTL3	The sense around here is that employee learning is an investment, not an expense	0.803	21.181	0.000
CTL4	Learning in my organization is seen as a key commodity necessary to guarantee organizational survival.	0.848	37.187	0.000
CTL5	Our culture is one that does not make employee learning a top priority.	0.642	6.306	0.000
SV1	There is a well-expressed concept of who we are and where we are going as a business unit	0.770	19.735	0.000
SV2	There is a total agreement on our business unit vision across all levels, functions, and divisions.	0.776	17.743	0.000
SV3	All employees are committed to the goals of this business unit	0.775	15.940	0.000
SV4	Employees view themselves as partners in charting the direction of the business unit	0.634	6.787	0.000
SV5	Top leadership believes in sharing its vision for the business unit with the lower levels.	0.734	16.220	0.000
OM1	We are not afraid to reflect critically on the shared assumptions we have about the way we do business.	0.722	8.943	0.000
OM3	Our business unit places a high value on open- mindedness.	0.715	6.971	0.000
OM4	Managers encourage employees to "think outside of the box."	0.689	9.907	0.000
OM6	Original ideas are highly valued in this organization.	0.819	21.083	0.000
ABP2 (SC1)	My unit/organization can understand and analyze information from the environment	0.772	15.039	0.000
INOV1 (SC2)	I can adjust to the development of government regulations to gain new access to improve performance	0.816	16.433	0.000
INOV8	I need to update the latest information about	0.785	16.339	0.000

(SC3)	sustainability to develop innovation in the field			
SOICD3 (SC4)	My Unit/Organization continues to explore new/different ways to understand the expectations and requirements of key Stakeholders	0.813	19.837	0.000
SOPPD6 (SC5)	We seek external sources of knowledge (eg partners, customers, research institutions) in developing innovative ideas related to sustainability	0.689	10.111	0.000
ABP4 (SZ1)	My unit/organization regularly organizes special meetings with external partners to acquire new skills/technologies	0.736	12.444	0.000
INN2 (SZ2)	My unit/organization was able to use knowledge from various sources to process production efficiently and quickly	0.811	22.202	0.000
INN3 (SZ2)	My unit/organization was able to identify changes to the method of work practically applying it to work in the field	0.868	25.849	0.000
INN5 (SZ3)	My unit / organization was able to evaluate new ideas from stakeholders such as customers, vendors, the surrounding community, etc. and consider them in the development of the process	0.790	15.915	0.000
INN1 (RC1)	My unit / organization has an organizational culture that promotes innovation	0.738	12.340	0.000
SOICD1 (RC2)	We develop new competencies that support innovation related to Sustainability in Organizations	0.820	21.128	0.000
SOPPD(7) (RC3)	My unit / organization has a learning culture that stimulates innovation for Sustainability	0.870	31.530	0.000