

DYNAMIC CAPABILITIES AND PERFORMANCE OF AVIATION FIRMS IN NIGERIA

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Abstract

The need to provide an empirically balanced study that reflects on the current realities of firms in the aviation sector and provide a post-covid survival dynamism was the fundamental driver that stimulated this study. The theoretical propositions of scholarly studies provided foundation to new and emerging areas on the study constructs. Sample of 159 respondents from three local airlines was used as data for the study. Multiple regression technique was used for the analysis of the study data. The study found that innovative and adaptive capability are fundamental strategy that firms in the aviation sector needs to develop to effectively increase their performance and overcome the current challenges facing the sector. The study recommends that the aviation sector needs to realign their strategies in such a manner that they are able to build adaptive and innovative competencies that would ensure the firms are able to manage this trying global times and improve their overall performance. Our study addressed the fundamental issues on dynamic capabilities as it relates to the aviation sector, given the paucity of studies conducted in this sector. The study also presented a more nuanced examination of the underlying elements that could drive a post pandemic recovery strategy for the aviation sector in developing economies. Also, the study validated the resource based view theory.

Keywords: Dynamic capabilities, Performance, Aviation sector, Profitability, Innovative capability and Nigeria.

JEL Classification: M10, M30, M39

1. INTRODUCTION

Aside the intellectual foundation and skilled workforce, companies are continually pursuing advanced capabilities that would help them overcome challenges in their inherent environment and one of those major capabilities, which

is seen as a second-order capability is dynamic capabilities. Professionals and academics also are interested in learning more about the potential implementation of innovation capability in many industries. The impact of dynamic capabilities on business performance is certainly growing among scholars. Organizational improvements have become a major issue of concern for scholars and this is evident with the increasing attention on fundamental issues that relates with building capabilities that helps toward a true, comprehensive, and integrated approach for fostering sustainable future in the organization (Harleen & Abrol, 2017). Dynamic capability advances tools, which makes for designing comprehensive viable structures which encourages actual, inspiring, and persuasive instances of how to thrive despite difficult circumstances in a business operational environment (Zollo & Winter, 2009).

The depth of skills capabilities inherent in an organization support its long-term viability by enhancing its capacity to evolve irrespective of internal or external change, as well as enhancing its competitive edge (Khalil & Belitski, 2019). The market is rapidly evolving, most especially technology, choices, excellence, and creativity, as such, it requires that businesses must respond to these regular shifts to remain relevant in their market (Ralf & Gudergan, 2015).

It thus implies that multiple capabilities are required to react competently and swiftly to external events, thus justifying the need for building dynamic capabilities (Wang & Feng, 2019). Businesses can use dynamic capabilities to create new products and services by changing their routines to reflect current realities in their operational market (Chen et al., 2019). This explains the perspective of Teece (2014) that dynamic capabilities account for the extent that an organization can absorb, build, and reframe their internal and exterior skills in order to deal with rapidly changing environments.

Organizations are attempting to get market edge by being more concentrated on a certain area, which are often their key values, from a strategic standpoint (Farzaneh, Ghasemzadeh, Nazari & Mehralian, 2020). Aside a specific attention to a core value, organizations also recognize the need of dynamic capabilities, as it helps to work in tandem with core strengths to avail them a competitive advantage. Core competences include not just a company's operating and proven results, but also the challenges that rivals face when bringing identical items to marketplace (Farzaneh et al., 2020).

These capabilities also include enlargement and diversified initiatives. Organizations multiple capabilities defines their dynamic capabilities, which explains higher-level capabilities than key specific capabilities. To keep up with the inventiveness of other rivals, dynamic capabilities look at the pace and method of implementing successful adjustments in response to improvements in the ambient environment (Gonzalez & Melo, 2017).

The aviation sector in developed economics have contributed largely not just as a means of transportation but also a major contributor to the gross domestic product (GDP) of the countries. In 2018, the US aviation sector accounted for about

5% of its GDP, 3% in Indian and 2.1% to Britain's GDP even in Ethiopia the sector accounts for 5.7% and 3.2% to South Africa's GDP. However, in most developing economies such as Nigeria, the sector contribution to the GDP have been low and abysmal contributing 0.12% in 2018. While there have been studies on dynamic capabilities and organizational outcomes in other sectors, there have however, been limited studies conducted in the aviation sector and particularly in Nigeria. This gap was closed with this study.

The global Covid-19 pandemic that occasioned the need for a national and global lock down have impacted greatly on the sector. In Nigeria, the challenges occasioned by the lockdown have impacted largely on the sector leading to lay off employees and decrease in the revenue of the airlines. The social distancing has forced the airlines to carry below the passengers' capacity of an aircraft, thereby reducing the revenue from passengers while the firms are still made to fulfil all their contractual and regulatory demands, thereby creating pressure on their lean revenues. This poses a great threat to the growth of the sector and thus, makes one wonder what role dynamic capabilities would play in revitalizing the sector towards surviving this compelling moment.

Further, the deregulation of the sector has opened the sector to new investment including from Nigerians with most of the new firms making gradual strides towards improving the aviation sector of the country. It is on this premise that this paper seeks to unravel the link between dynamic capabilities as an arbiter in the need to ensure increased performance of the aviation sector. The general objective is to assess the effect of dynamic capabilities on performance of the aviation sector. The specific objectives are to examine the effect of absorptive capability on the profitability; to assess the effect of adaptive capability on the profitability and; to investigate the influence of innovative capability on the profitability of the aviation sector in Nigeria.

2. THEORETICAL AND HYPOTHESES DEVELOPMENT

The resource-based view theory (RBV) was the foundational theory used to underpin this study. The resourced-based view centers on a firm's resources and evaluates the effect they have on the overall organization. The goal of the resource-based view is to explain why some firms are more competitive than others as a result of their unique resources and capabilities (Helfat & Peteraf, 2003). Organizations' combinations of core competencies create a market edge so well since it is valuable and scarce, and over such an edge to be stable, it should also be difficult to copy and it must lack alternatives (Barreto, 2010).

Examples of these types of resources and capabilities include such things as learning to print three-dimensional objects, proactively meeting customer demands in this area, and creating a process to print human organs. The source of these assets' competitiveness is attributable to the individual firm and its ability to bundle them in a way that adds value to its stakeholders. In spite of its perceived explanatory properties of firm competitiveness, the resource based view has been criticized for

being too inwardly focused and not accounting for external environmental factors that may influence a firm's performance (Barreto, 2010; Hoopes, Madsen, & Walker, 2003).

In addition to the oversight on the external environment, the construct glances over how capabilities are created or what types of capabilities may be needed. To this end, Pisano (2015) opined that this theory perspective offers minimal direction to businesses on the types of skills that they should seek to build in hopes of gaining or maintaining competitiveness, which is aside from regular assets that are not easily copied and that are differentiated. The theory was used to explain the assessment that the resource-based view is more attuned to cultivating resources in static environments and is well-suited in providing insight into dynamic capability development, which is the intent of the dynamic capability view.

Dynamic Capabilities

Teece, Pisano and Shuens (1997) groundbreaking work on dynamic capabilities, the capabilities approach has become one of the most prolifically researched topics in the field of strategic management (Arend & Bromiley, 2009; Vogel & Güttel, 2012). The relevance of developing dynamic capabilities lies in the need to effectively describe the causes of company strategic edge throughout period and give leaders advice on how to circumvent the lower revenue situation that occurs whenever identical competitors offer same products in perfect competition situation (Teece et al., 2007). Despite the amount of scholarship that has been dedicated to understanding dynamic capabilities over the years, the field is still in the developmental stage as much of the work to date has been largely conceptual and focused on foundational-level issues such as understanding what they are, where they exist, and how they work (Helfat & Peteraf, 2003; Pisano, 2015).

Dynamic capabilities are important in the continual evaluation of what new capabilities are needed and how they might be created and integrated into the organization by the firm's management. For the sake of clarity, dynamic capabilities are defined here as the higher-level capability of the firm to purposefully extend, modify, or create ordinary capabilities (Winter, 2003; Helfat et al., 2007). Embedded in this definition is the understanding that to achieve a competitive advantage, organizations must have capabilities to sense the opportunities that are available to them, be able to internally seize them, and subsequently reorganize to maximize their effect (Leih & Teece, 2016). The dimensions of dynamic capabilities are absorptive, innovative and adaptive capability (Wilden, Devinney & Dowling, 2016).

Performance

Performance explains the result of a series of a business operation from a given period that demonstrates the underlying framework for deciding the degree to whether a firm seems to have been capable of meeting its goals (Richard et al., 2009). Corporate effectiveness is diverse and multimodal, leaving it challenging to quantify. Nevertheless, scholarly research suggests two performance measures, which are financial and non-financial parameters. As both measures can be used to verify the

degree whereby an institution's range of operations has indeed been feasible in accordance with its own targets throughout a given time (Singh et al., 2016).

Accounting metrics, according to Singh et al. (2016), are objective standards of a company performance, and the information used to evaluate it is typically derived through official studies and finance and accounting records of the business. Non-financial dimensions, also known as self - report dimensions examine an institution's capacity to accomplish its policy priorities over time usually from the perspectives of the managers (Santos & Brito, 2012). The subjective assessments evaluate the company relying on participants' awareness of earnings throughout time, rivals' positions, innovation, worker devotion, and the company's prestige, among other factors. Due to the difficulty associated with obtaining financial records from aviation companies, the subjective approach was used to account for performance.

Relationship between absorptive capability and Performance

The absorptive capability is the firm's ability to leverage external and internal information for its benefit. Cohen and Levinthal (1990) have offered the most commonly used definition of absorptive capacity, defining it as the ability of the firm to value external information, internalize it, and subsequently exploit it for commercial means (Lewin, Massini, & Peeters, 2011). The basic premise of this definition has remained largely intact with only a few revisions or enhancements made to it over time. For example, Lane, Koka, and Pathak (2006) refined the concept by adding specificity around the sequential process of using exploratory learning to recognize and understand potentially valuable new external knowledge, assimilate this new knowledge through transformative learning, and use exploitative learning to create new knowledge and benefits for the organization.

The ability of the firm to use its absorptive capability is dependent on the intent and cognitive structure of the organization intending to use it. That is, the capacity to create and use a firm's absorptive capability is centered on management's proactive approach to becoming a learning organization and its ability to design an organizational structure that facilitates the dissemination of information throughout it (Todorova & Durisin, 2007). The ease by which a firm can then use its absorptive capability is dictated by the investment management has made in the absorptive capacity of its individual members, the cumulative stock of knowledge the organization has at any one point, and the ability of the firm to share knowledge internally (Bergh & Lim, 2008). Thus, the firm's ability to acquire, assimilate, and use new knowledge and information to its benefit is a result of its predisposition and forethought of doing so.

The study of Harleen and Abrol (2017) was on the role of dynamic capabilities on firms performance. The study used absorptive capability as a dimension of the independent variable. Research was carried out in India. Sample of 109 was tested from selected small and medium scale firms. Regression analysis was used for the analysis of the study data and the study found that absorptive capacity has significant effect on performance of small firms. The study was focused in small

firms, while the current study is focused on the airline sector. The development of capabilities in the airline will be less likely when compared to small firms.

Khalil and Belitski (2019) study was on dynamic capabilities and firms performance specifically in the technology framework. Content analysis was carried out and regression analysis was done in the for the mixed study. The result supported by both the qualitative and quantitative showed that absorptive capability in the IT sector is essential towards ensuring firms. The study provided an in-depth knowledge on dynamic capabilities that is even beyond the scope of the current study, though, the study is limited to the scope where the study was conducted. Hence, the study proposes that:

H₁: Absorptive capability has significant positive effect on the profitability of the aviation sector in Nigeria.

Relationship between adaptive capability and Performance

The firm's adaptive capability involves a proactive rather than reactive approach to its environment and is based on the firm's ability to continuously learn to facilitate disruption and complexity within its organization. The adaptive capability is defined as the firm's ability to quickly reconfigure its resources and processes in order to benefit from opportunities that it observes are occurring within its business environment (Staber & Sydow, 2002). Embedded within this capability are the managerial, market, and technological functions (Tuominen, Rajala, & Möller, 2004). The managerial function is focused on the firm's organizational structure and internal processes. Market function is tied to the firm's competitors and customers, and the technological function is the firm's ability to stay current with new technologies and its uses.

The managerial function of the adaptive capability addresses how well management can restructure the organization in changing environments and to what degree it encourages employees to take advantage of changing marketing conditions (Gibson & Birkinshaw, 2004). Organizational structure can be constituted as being either formal or informal depending on the perceived needs of the firm at the time. A formal structure has the characteristics of being rigid and slightly inflexible but offers management a sense of control during times of rapid change. An informal design, or what Staber and Sydow (2002) refer to as a loose-coupled structure, provides for a more organic structure that allows the organization to be nimbler and more responsive to opportunities.

Wang and Feng (2019) assessed the influence of dynamic capabilities on innovation. The study was conducted in China. The manufacturing sector was used for the study. The study used a sample of 231 for the questionnaires that were distributed. Regression was used for the analysis of the study. It was found that adaptive capability as a dimension of dynamic capability has significant effect on firms performance. The study was conducted in the manufacturing sector and even in a developed economy, while the current study is being carried out in a developing economy with specific focus on the aviation sector.

Chen et al. (2019) study referred to dynamic capabilities of logistics service providers and performance. China is the study geographic scope, while the logistics and supply sector was the focus of the study. Sample of m 103 logistics firms was used, and analysis of the data was done with Partial least squares structural equation modelling. The outcome showed that adaptive capability leads to increase in performance in firms. The current study is focused on the aviation sector rather than the logistics sector. Based on the arguments, we propose that:

H₂: Adaptive capability has significant positive effect on the profitability of the aviation sector in Nigeria.

Relationship between innovative capability and Performance

The innovative capability of the firm denotes its capacity to design evolving methods, products and services, and markets. It is defined as the organizations capacity to manage innovation through the continuous reconfiguration of its organizational resources, knowledge, and processes (Eng & Okten, 2011). In this sense, a firm's innovative capability is based in its ability to exploit opportunities it has previously uncovered while continuously exploring for new opportunities to exploit in the future. The ability to both explores and exploit innovation can be challenging for organizations as these activities are often perceived as competing priorities (March, 1991). As a result of this tension, firms often become better either at exploring for or at the exploitation of innovative opportunities to the detriment of the other process.

For a firm to become adept in exploring for innovation it must be able to develop its ability to sense new opportunities occurring within its external environment. The exploration process is most often undertaken by members of upper management who understand the overall capabilities, resources, and strategic orientation of the firm. Chang and Hughes (2012) noted that the explorative process is customer centric and is beyond incrementally improving on what competitors in the industry are currently doing. This means that firms need to leverage their current knowledge set to create new and better ways to serve current customer's needs and to ideate around what customer's future wants will be (Danneels, 2002). However, there is a danger for firms that become too focused on the explorative process of innovation in that they can become less able to effectively implement and capitalize on new ideas.

Farzaneh et al. (2020) was on role of dynamic capabilities on learning and innovation performance. The used a sample of 213 respondents and questionnaires were used for the collection of the data used. Hierarchical regression was used for analysis of the data and it was found that innovative capabilities support organization learning and innovation performance. the study was a multivariate study while the current study is a bivariate study showing the link between innovative capacity and performance.

The works of Gonzalez and Melo (2017) was on dynamic capabilities and knowledge factors. Sample of 295 respondents participated in the study. Innovation capability was used a dimension to assess dynamic capabilities. The study found that

innovative capabilities significant affect the knowledge factors of firms. We then propose that:

H₃: Innovative capability has significant positive effect on the profitability of the aviation sector in Nigeria.

3. METHODOLOGY

Cross sectional survey design was used. Commercial indigenously owned airlines in Nigeria that covers both local and international trips and their employees was the population. Three airlines were used for the study. The airlines are Air peace, Arik and Azman Air. The unit of analysis were the total of 239 employees of the airlines. The sample size of the study is 150. Taro Yamane formula was used for sample size determination and convenient sampling technique was used in selecting the study samples. The sample unit of analysis covers respondents in four department comprising ticketing, passenger service agent, avionics technicians and flight instructors. The choice of this departments was because they form the integral units in the airline sector and management. Primary data source using questionnaires adapted from existing studies were used for data collection. Questionnaire was used as instrument for data collection. The instrument was subjected to reliability test using Cronbach alpha and alpha values of 0.811 to 0.975 was obtained for the scales. Multiple regression was the technique for inferential test. This was because it allows in testing multiple variables influence on another variable.

4. RESULT AND DISCUSSION

The eSurvey Creator techniques were used to type data for data pre-processing, that was then transported as a Spreadsheets matrix. There was no missing value found because all z-scores were well below 3.29. Univariate outliers were not found also. Buffer of 9 instrument was added to make the total of instrument distributed to be 159. Of the 159 questionnaires that were distributed, the return rate was 100% and this was because the researcher made a special appeal and made three visitations for the distribution and collection of the instrument. However, 9(6%) were not properly filled, as such, the instruments were not included. Hence, 150(94%) was used for further analysis. The demographic distribution of the respondents shows the male are 89(51%) and the females were 61(49%). The underlying assumptions for the techniques were confirmed satisfied.

Table 1: *Coefficients linking Dynamic capabilities and aviation sector performance*

Model	Unstandardized		Standardized	T-val	Sig-val	Collinearity test	
	Beta	SE	Beta			Tolerance	VIF
1 (Constant)	1.413	.340		4.160	.000		
Absorptive capability	-.113	.075	-.104	-1.517	.131	.837	1.195

Adaptive capability	.254	.085	.231	2.986	.003	.654	1.529
Innovative capability	.506	.080	.500	6.288	.000	.621	1.609

a. Dependent Variable: Performance

R = .626; R-squared = .392; F-value = 33.309; Sig = .000

The above table 1 is the model summary of the regression result on dynamic capabilities and performance of the aviation sector. The result indicates that the association that explains dynamic capabilities and performance is positive. The result shows that there is a 0.626 shared association that explains dynamic capabilities and performance. This implies that there is a 62.6% positive association that explains dynamic capabilities and performance. The r-square shows the coefficient of determination in the variables. This means that dynamic capabilities explain about 39.2% of changes in and performance in the aviation sector. The table above shows the model is fit given the f-value = 33.309 and the p-value is less than 0.05. Thus, implying that dynamic capabilities has influence to explain changes in the performance of the aviation sector. As indicated in table 1 above, innovative capability has the most effect in improving the performance of the aviation sector ($\beta = 0.500, p < 0.05$), which is followed next by adaptive capability ($\beta = 0.231, p < 0.05$).

Test of Hypotheses One:

T-value for the association that explains absorptive capability and performance of aviation sector is -1.517 and the p-value > 0.05. Since the p-value > 0.05, we accept the null hypothesis (H_{01}) and conclude that absorptive capability does not significantly affect the performance of the aviation sector. Harleen and Abrol (2017) study carried out in India differed from this study. The variations in findings could be because the current study was on the aviation sector while their study was on SMEs. Similarly, the study differs from the findings of Khalil and Belitski (2019) and this could be because the study was conducted in a developed economy, while this was done in Nigeria a developing country.

Test of Hypotheses Two:

T-value for the association that explains adaptive capability and performance of aviation sector is 2.986 and the p-value < 0.05. Since the p-value < 0.05, we reject the null hypothesis (H_{02}) and conclude that adaptive capability affects the performance of the aviation sector. Wang and Feng (2019) also proved that adaptive capability affects performance. The works of Chen et al. (2019) is further supported, as our study showed that adaptive capability affects performance.

Test of Hypotheses Three:

The t-value for the association that explains innovative capability and performance of aviation sector is 6.288; p-value < 0.05. Since the p-value < 0.05, we accept the alternate hypothesis (H_{03}) and conclude that innovative capability affects the performance of the aviation sector. Farzaneh et al. (2020) that also found that

innovative capability affect performance. Also, the study of Gonzalez and Melo (2017) is supported with the result from this study.

5. CONCLUSIONS AND RECOMMENDATIONS

The study focus was to assess the influence of dynamic capabilities on performance of the aviation sector in Nigeria. The three-research question raised was addressed, as it found whether adaptive, absorptive and innovative capabilities would lead to increased performance for airlines in the country. Hence, the study concludes that dynamic capabilities have significant effect on performance of the aviation sector in Nigeria. The study also concludes that improving their innovative ability would lead to a more improved performance, as such, the study makes the following recommendations.

1. Organizations must first ensure their knowledge competencies are developed and this must start with innovative leadership that supports innovation, since the developing innovative capabilities accounts more for increased performance.
2. There is need for firms in the aviation sector to refocus in their strategies in such a manner that they are able to build adaptive competencies that would ensure the firms are able to manage this trying global times. This would demand that they effectively restructure their process to ensure that it supports current realities.
3. Despite the result indicating that absorptive capabilities have no influence on performance, it is necessary that the study outcome is taken with caution, as several other unaccounted factors may have influenced the result outcome, as such, since it shows to have relationship with performance, it is wise that firms develop these capabilities even though in a more salient manner compared to other capabilities that have shown greater influence on performance.

This research adds to the growing body of knowledge on the study constructs and how it might be applied to other fields. The use of the aviation sector is another added knowledge, as there are limited studies that have used the sector to explore the relationship between the constructs. The theoretical implication of the study is evident from the validation of the resource based view theory as a framework that can be used in explaining the phenomenon of dynamic capabilities and performance in the aviation sector. As a contribution to the dynamic capabilities literature, the study is recovery and survival focused, as such, firms in the sector are availed another academic-industry research that provides timely solution to fundamental problems facing the aviation sector in developing economies.

Further, as a policy implication, government of developing economies that desires to advance the aviation to enable them contribute favorably to economic growth and development can as a matter of policy deploy special programmes that aid the firms build capabilities and provided relief in form of research and

development activities that would help the organization gain new knowledge, be innovative and improve their capacities.

6. LIMITATIONS OF THE STUDY

The limitations stem from the method adopted, as emphasis was on indigenously owned firms, future studies can consider undertaking the entire aviation firms in the country. The use of questionnaire was another limitation, as such future studies can adopt other research design.

REFERENCES

- Arend, R. J., & Bromiley, P. (2009). Assessing the dynamic capabilities view: Spare change, everyone? *Strategic Organization*, 7(1), 75–90. <https://doi.org/10.1177/1476127008100132>
- Barreto, I. (2010). Dynamic capabilities: A review of past research and an agenda for the future. *Journal of Management*, 36(1), 256–280. <https://doi.org/10.1177/0149206309350776>
- Barreto, I. (2010). Dynamic capabilities: A review of past research and an agenda for the future. *Journal of Management*, 36(1), 256–280. <https://doi.org/10.1177/0149206309350776>
- Bergh, D. D., & Lim, E. N.-K. (2008). Learning how to restructure: Absorptive capacity and improvisational views of restructuring actions and performance. *Strategic Management Journal*, 29(6), 593–616. <https://doi.org/10.1002/smj.676>
- Chang, Y.-Y., & Hughes, M. (2012). Drivers of innovation ambidexterity in small to medium sized firms. *European Management Journal*, 30(1), 1–17.
- Chen, I. S. N., Fung, P. K. O., & Yuen, S. S. M. (2019). *Dynamic capabilities of logistics service providers: antecedents and performance implications*. *Asia Pacific Journal of Marketing and Logistics*. doi:10.1108/apjml-12-2017-0308
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1), 128. <https://doi.org/10.2307/2393553>
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1), 128. <https://doi.org/10.2307/2393553>
- Danneels, E. (2002). The dynamics of product innovation and firm competences: The dynamics of product innovation. *Strategic Management Journal*, 23(12), 1095–1121. <https://doi.org/10.1002/smj.275>
- Eng, T.-Y., & Okten, D. (2011). Exploring a dynamic framework of innovative capability: A theoretical integration of technological and marketing capabilities.

Technology Analysis & Strategic Management, 23(9), 1001–1013.
<https://doi.org/10.1080/09537325.2011.616700>

- Farzaneh, M., Ghasemzadeh, P., Nazari, J.A., & Mehralian, G. (2020). Contributory role of dynamic capabilities in the relationship between organizational learning and innovation performance. *European Journal of Innovation Management*, Ahead of Print. <https://doi.org/10.1108/EJIM-12-2019-0355>
- Gibson, C. B., & Birkinshaw, J. (2004). The antecedents, consequences, and mediating role of organizational ambidexterity. *Academy of Management Journal*, 47(2), 209–226. <https://doi.org/10.2307/20159573>
- Gonzalez, R.V.D. & Melo, T.M. (2017). Linkage between dynamics capability and knowledge management factors: A structural equation model. *Management Decision*, 55(10), 2256–2276.
- Harleen & Abrol, D. (2017). Evaluating the Influence of Dynamic Capabilities on Firms' Performance: Role of Innovative Sustainability and Adaptation to Change. *Amity Journal of Management Research* 2(2),1-12.
- Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, Margaret A., Singh, H., Teece, D. J., & Winter, S. G. (2007) *Dynamic capabilities: Understanding strategic change in organizations*. London: Blackwell
- Helfat, C. E., & Peteraf, M. A. (2003). The dynamic resource-based view: Capability lifecycles. *Strategic Management Journal*, 24(10), 997–1010. <https://doi.org/10.1002/smj.332>
- Helfat, C. E., & Peteraf, M. A. (2015). Managerial cognitive capabilities and the microfoundations of dynamic capabilities. *Strategic Management Journal*, 36(6), 831–850. <https://doi.org/10.1002/smj.2247>
- Hoopes, D. G., Madsen, T. L., & Walker, G. (2003). Why is there a resource-based view? Toward a theory of competitive heterogeneity. *Strategic Management Journal*, 24(10), 889–902.
- Hoopes, D. G., Madsen, T. L., & Walker, G. (2003). Why is there a resource-based view? Toward a theory of competitive heterogeneity. *Strategic Management Journal*, 24(10), 889–902. <https://doi.org/10.1016/j.emj.2011.08.003>
<https://doi.org/10.1177/1056492602238848>
- Khalil, S. & Belitski, M. (2019). Dynamic capabilities for firm performance under the information technology governance framework. *European Business Review*, 32(2), 129-157
- Lane, P. J., Koka, B. R., & Pathak, S. (2006). The reification of absorptive capacity: A critical review and rejuvenation of the construct. *Academy of Management Review*, 31(4), 833–863.
- Leih, S., & Teece, D. (2016). Campus leadership and the entrepreneurial university: A dynamic capabilities perspective. *Academy of Management Perspectives*, 30(2), 182–210. <https://doi.org/10.5465/amp.2015.0022>

- Leih, S., & Teece, D. (2016). Campus leadership and the entrepreneurial university: A dynamic capabilities perspective. *Academy of Management Perspectives*, 30(2), 182–210. <https://doi.org/10.5465/amp.2015.0022>
- Lewin, A. Y., Massini, S., & Peeters, C. (2011). Microfoundations of Internal and External Absorptive Capacity Routines. *Organization Science*, 22(1), 81–98. <https://doi.org/10.1287/orsc.1100.0525>
- March, J. G. (1991). Exploration and Exploitation in Organizational Learning. *Organization Science*, 2(1), 71–87.
- Pisano, G. P. (2015). A normative theory of dynamic capabilities: Connecting strategy, know-how, and competition. *Harvard Business School Technology & Operations Mgt. Unit Working Paper* (16–036). Retrieved from http://papers.ssrn.com/sol3/Papers.cfm?abstract_id=2667018
- Pisano, G. P. (2015). A normative theory of dynamic capabilities: Connecting strategy, know-how, and competition. *Harvard Business School Technology & Operations Mgt. Unit Working Paper* (16–036).
- Ralf, W. & Gudergan, S.P. (2015). The impact of dynamic capabilities on operational marketing and technological capabilities: investigating the role of environmental turbulence. *Journal of the Academy of Marketing Science*, 43(2), 181-199.
- Richard, P.J., Devinney, T.M., Yip, G.S. & Johnson, G. (2009). Measuring organizational performance: towards methodological best practice, *Journal of Management*, 35(3), 718-804, doi:10.1177/0149206308330560.
- Santos, J.B. & Brito, L.A.L. (2012). Toward a subjective measurement model for firm performance. *Brazilian Administration Review*, 9(6), 95-117.
- Singh, S., Darwish, T.K. & Poto_cnik, K. (2016), “Measuring organizational performance: a case for subjective measures”, *British Journal of Management*, 27(1), 214-224, doi: 10.1111/1467-8551.12126.
- Staber, U., & Sydow, J. (2002). Organizational adaptive capacity: A structuration perspective. *Journal of Management Inquiry*, 11(4), 408–424.
- Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319–1350. <https://doi.org/10.1002/smj.640>
- Teece, D. J. (2014). A dynamic capabilities-based entrepreneurial theory of the multinational enterprise. *Journal of International Business Studies*, 45, 18-37.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533.
- Todorova, G., & Durisin, B. (2007). Absorptive capacity: Valuing a reconceptualization. *Academy of Management Review*, 32(3), 774–786.

- Tuominen, M., Rajala, A., & Möller, K. (2004). How does adaptability drive firm innovativeness? *Journal of Business Research*, 57(5), 495–506. [https://doi.org/10.1016/S0148-2963\(02\)00316-8](https://doi.org/10.1016/S0148-2963(02)00316-8)
- Vogel, R., & Güttel, W. H. (2012). The dynamic capability view in strategic management: A bibliometric review. *International Journal of Management Reviews*, 15(4), 426–446. <https://doi.org/10.1111/ijmr.12000>
- Wang, H., & Feng, J. (2019). Influences of dynamic capability on breakthrough innovation Evidence from China's manufacturing industry. *Chinese Management Studies*, 14(3), 565-586
- Wilden, R., Devinney, T. M., & Dowling, G. R. (2016). The architecture of dynamic capability research identifying the building blocks of a configurational approach. *The Academy of Management Annals*, 10(1), 997–1076. <https://doi.org/10.1080/19416520.2016.1161966>
- Wilden, R., Devinney, T. M., & Dowling, G. R. (2016). The architecture of dynamic capability research identifying the building blocks of a configurational approach. *The Academy of Management Annals*, 10(1), 997–1076. <https://doi.org/10.1080/19416520.2016.1161966>
- Winter, S. G. (2003). Understanding dynamic capabilities. *Strategic Management Journal*, 24(10), 991–995. <https://doi.org/10.1002/smj.318>
- Winter, S. G. (2003). Understanding dynamic capabilities. *Strategic Management Journal*, 24(10), 991–995. <https://doi.org/10.1002/smj.318>
- Zollo, M. & Winter, S. G. (2009). Deliberate learning and the evolution of dynamic capabilities. *Organization Science*, 13, 339-351.