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Innovative capabilities, firm performance and foreign ownership: Empirical analysis of large and medium-sized companies form all industries

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In this article innovative capability, i.e. the ability of new products and markets development, is analyzed and empirically tested. The results have proven that the companies with more developed innovative capabilities achieve higher performance levels, but that there is no difference in innovative capabilities between large and medium-sized companies. On the other hand, medium-sized companies have slightly higher levels of sales growth and increase in market share. Also, companies in foreign ownership are better at development of new products and new production methods, and they have higher levels of sales growth, market share and increase in market share.

JEL Classifications: L22, L26, M10, O30

Keywords: Innovative capability, performance, foreign ownership, company size

Introduction

Dynamic capabilities, as the concept that tries to explain sources of sustainable competitive advantage in terms of turbulent environment, although widely mentioned in strategic management literature, still remains not enough empirically tested. Empirical studies of dynamic capabilities have mostly addressed firm- or industry-specific processes relevant to dynamic capabilities. Also, the largest part of research has been based on case studies. In this article, one of the basic elements of dynamic capabilities, innovative capability is analyzed and empirically tested. Innovative capability, through strategic innovative orientation, enables new products and markets development (Wang and Ahmed, 2004, 2007). Multidimensional construct of innovative capabilities that includes development of new products and services, development of new production methods, risk-taking by key managers, market innovation and firm's innovative strategic orientation (Capone, Farley, Hulbert, and Lehmann 1992; Miller and Friesen, 1983; Wang and Ahmed, 2007) is empirically tested. Relationships between five elements of innovative capability and six elements of company's performance are analyzed. Also, the influence of company's size and type of ownership (foreign or domestic) on innovative capabilities was tested.

Theory

According to Teece, Pisano, and Shuen (1997), dynamic capability refers to company's ability to integrate, build and transform internal and external competencies. Eisenhardt and Martin (2000) define dynamic capabilities as business processes that use resources -

specifically the processes of integration, restructuring, acquisition and release resources - to adapt or create market changes. Dynamic capabilities are therefore organizational and strategic routines by which company creates new forms of resources as the market emerges, split, develops and disappears. Dynamic capabilities refer to the company's orientation toward constant reshaping, renewing and re-creating resources and capabilities, and the improvement and reconstruction of key competencies in response to market changes in a constant effort to maintain a competitive advantage (Wang and Ahmed, 2007).

Wang and Ahmed (2004, 2007) identify three major components of dynamic capabilities that are common to all companies: adaptive, absorptive and innovative capability. Adaptive capability refers to the ability of identifying and exploiting new market opportunities. It manifests through strategic flexibility, i.e. inherent resource possession, and flexibility in the use of resources. Absorptive capability refers to the company's ability to recognize the value of new, external information, absorb it and use it. Innovative capability refers to the ability of new products and markets development. The authors consider absorptive, adaptive and innovative capability as one of the most important components of dynamic capabilities, because they support a company's ability to integrate, transform, renew and rebuild their competences and resources. Ambrosini, Bowman, and Collier (2009) identify three levels of dynamic capabilities: renewing, regenerative, incremental. Newey and Zahra (2009) complement the classification made by Wang and Ahmed (2004, 2007) and define absorptive capability as competence based on knowledge that supports the functioning of operational and dynamic capabilities. They believe that the absorptive capability if built though interactions between dynamic and operational capabilities.

According to Hou and Chang (2008) the basic elements of dynamic capabilities are: sensing capability, absorptive capability, integrative capability and innovative capability. Sensing capability refers to the ability of understanding customer needs and market dynamics better than its competitors. Absorptive capability refers to the ability of companies to recognize the value of new, external information, assimilate it and use for commercial purposes. Integrative capability refers to the ability to integrate individual inputs. Innovative capability is the ability to develop new products and markets. Hou and Chang (2008) argue that the sensing capability, absorptive capability, integrative capability and innovative capability are the most important component of dynamic capabilities, and that they support company's ability to integrate, transform, renew and re-create the resources and capabilities in response to changing environments.

McKelvie and Davidson (2009) identify four basic elements of dynamic capabilities: idea generation capability, market disruptiveness capability, new product development capability and new process development capability. Idea generation capability is related to the development of new ideas for future entrepreneurial endeavours. Market disruptiveness capability refers to the behaviour of companies in the context of aggressiveness and persistence in introducing innovation to the market. It indicates the extent to which the company creates the dynamism of the market. New product development capability is related to the development of new products and services, the quality of new products and services and the variety of new products and services in relation to the largest competitors. New process development capability refers to the performance of innovation process and adaptation of new technology to existing processes. New product development capability and new process development capability from the classification made by McKelvie and Davidson (2009) can be seen as parts of innovative capability considering the definitions from the main authors (Capon et al., 1992; Miller and Friesen, 1983; Wang and Ahmed, 2004, 2007).

It can be concluded that, according to the largest part of authors, innovative capability is considered one of the most important elements of dynamic capabilities (Hou and Chang, 2008; McKelvie and Davidson, 2009; Newey and Zahra, 2009; Wang and Ahmed, 2004, 2007). From presented definitions it can be seen that innovative capability consists of

several dimensions. Prior research has mainly investigated different combinations of innovative capability dimensions (Capon et al., 1992; Miller and Friesen, 1983). Results of these studies emphasize the importance of innovative capabilities for firm's evolution and survival, especially with respect to dynamic environment and constant change (Deeds, DeCarolis, and Coombs, 1999; Delmas, 1999; Petroni, 1998; Tripsas, 1997). In this study multidimensional construct of innovative capability is examined, and its connection to company's performance is empirically tested. The difference in innovative capabilities and achieved performance levels between large and medium-sized companies, as well as foreign and domestic companies is also examined.

Sample

This study uses primary data collected from large and medium sized Croatian companies with more than 100 employees. Such companies were identified based on the data from the Croatian Chamber of Economy, resulting in population of 1017 companies. Online and mail surveys were sent simultaneously, which enabled managers to choose the way they want to participate. A total of 264 usable surveys were collected, 143 (54.17%) through mail, and 121 (45.83%) via online survey. That resulted with the response rate of 25.96%, acceptable for this type of research (Drnevich and Kriauciunas, 2011; Protogerou, Caloghirou, and Lioukas, 2008).

Measures

Innovative capability was operationalized according to Miller and Friesen (1983), Capon et al., (1992) and Wang and Ahmed (2007) through following variables: development of new products and services (IN1), development of new production methods (IN2), risk-taking by key executives (IN3), market innovation (IN4), and firm's innovative strategic orientation (IN5).

Given that the perceptual measures of performance correlate with objective measures (Powell, 1991), firm's performance was operationalized through managers' perceptions of main performance categories: sales (PERF1), sales growth (PERF2), profitability (PERF3), market share (PERF4), increase in market share (PERF5) and sustainability of achieved performance levels (PERF6).

The scales were assessed on a five-point Likert-type scale ranging from 1 = much worse than competitors to 5 = much better than competitors. Internal consistency of scales (reliability) was proved to be acceptable with Cronbach's α 0.878 for performance and 0.872 for innovative capability.

Analysis and results

Descriptive statistics and characteristics of the sample are shown prior to theory testing. Table 1 shows the structure of the companies in the sample according to size and ownership.

From Table 1 it can be seen that there are 108 (40.9%) large and 156 (59.1%) middle-sized companies in the sample. From 264 companies in the sample, 218 (82.5%) are in the domestic ownership, while 46 (17.4%) are in the foreign ownership.

In Table 2 managers' perception of company's innovative capabilities is presented.

Results from Table 2 show that the largest proportion of respondents (form 41.3% for risk-taking by key executives (IN3) and company's innovative strategic orientation (IN5) to 45.1% for development of new production methods (IN2)) perceive that their

company's innovative capabilities are no different from their main competitor's innovative capabilities. From 29.2% (company's innovative strategic orientation (IN5)) to 39.5% of respondents (risk-taking by key executives (IN3)) perceives their company's innovative capabilities to be better than competitor's. The smallest part of respondents perceives their company's innovative capabilities to be much worse than competitors (form 1.5% for risk-taking by key executives (IN3) to 3.4% for development of new production methods (IN2)).

TABLE 1. DESCRIPTIVE STATISTICS
FOR COMPANY'S SIZE AND OWNERSHIP

		Frequency	%
SIZE	1 (large)	108	40.9
	2 (medium)	156	59.1
OWNERSHIP	0 (domestic)	218	82.5
	1 (foreign)	46	17.4

Source: Empirical analysis results.

TABLE 2. DESCRIPTIVE STATISTICS FOR INNOVATIVE CAPABILITY

	IN1		IN2		IN3		IN4		IN5	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1	7	2.7	9	3.4	4	1.5	6	2.3	8	3.0
2	37	14.0	35	13.3	26	9.8	30	11.4	39	14.8
3	113	42.8	119	45.1	109	41.3	111	42.0	109	41.3
4	78	29.5	79	29.9	103	39.0	90	34.1	77	29.2
5	29	11.0	22	8.3	22	8.3	27	10.2	31	11.7
Total	264	100.0	264	100.0	264	100.0	264	100.0	264	100.0

Source: Empirical analysis results.

TABLE 3. DESCRIPTIVE STATISTICS FOR PERFORMANCE

	PERF1		PERF2		PERF3		PERF4		PERF5		PERF6	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1	7	2.7	10	3.8	15	5.7	6	2.3	12	4.5	5	1.9
2	26	9.8	37	14.0	51	19.3	33	12.5	36	13.6	16	6.1
3	106	40.2	115	43.6	104	39.4	104	39.4	107	40.5	109	41.3
4	100	37.9	81	30.7	66	25.0	92	34.8	89	33.7	116	43.9
5	25	9.5	21	8.0	28	10.6	29	11.0	20	7.6	18	6.8
Total	264	100.0	264	100.0	264	100.0	264	100.0	264	100.0	264	100.0

Source: Empirical analysis results.

Table 3 shows manager's perception of company's achieved performance levels in comparison to main competitors.

From the results shown in Table 3, it can be concluded that the largest part of the respondents perceive their company's performance to be no different from their main competitor's by five evaluated elements (sales (PERF1), sales growth (PERF2), profitability (PERF3), market share (PERF4) and increase in market share (PERF5). Slightly fewer respondents think that their company's performance is better than competitor's (from 25.0% for profitability (PERF3) to 37.9% for sales (PERF1). As for sustainability of achieved performance levels (PERF6), the larger part of respondents (43.9%) perceives it to be better than competitor's, while slightly fewer respondents (41.3%) thinks there is no difference between their company and competitors in terms of sustainability of achieved performance levels. Extremely few respondents answered that they perceive their company's performance to be much worse than the main competitors (from 1.9% for sustainability of achieved performance levels (PERF6) to 5.7% for profitability (PERF3)).

Table 4 presents correlations between company's size, type of ownership, innovative capabilities and performance.

TABLE 4. KENDALL'S TAU B CORRELATION MATRIX

		IN1	IN2	IN3	IN4	IN5	PERF1	PERF2	PERF3	PERF4	PERF5	PERF6
SIZE	Correlation Coefficient	-.016	-.009	.081	-.014	-.056	.099	.128*	.041	.023	.117*	.094
	Sig. (2-tailed)	.785	.873	.159	.804	.324	.085	.024	.466	.687	.040	.107
F_OW	Correlation Coefficient	.137*	.150**	.038	.071	.099	.093	.142*	.075	.143*	.146**	.065
	Sig. (2-tailed)	.015	.008	.509	.212	.080	.103	.013	.178	.012	.010	.260

Source: Empirical analysis results.

Note: * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Results from Table 4 show that correlation between company's size and five elements of innovative capabilities is not significant. Correlation between company's size and performance is statistically significant for only two performance elements, i.e. sales growth (PERF2) and increase in market share (PERF5). Correlation is small and positive, which means that medium companies have slightly higher increase in sales and market share than large companies. Correlation between type of ownership and innovative capabilities is significant only for two elements of company's performance: development of new products and services (IN1) and development of new production methods (IN2). Correlation between those variables is positive, but small, which means that companies in foreign ownership are slightly better in development of new products and services and development of new production methods. According to results presented in table 4, correlation between type of ownership and company's performance is statistically significant and positive for three performance elements: sales growth (PERF2), market share (PERF4) and increase in market share (PERF5), which means that companies in foreign ownership are better according to abovementioned performance indicators.

Mann Whitney U test of difference in innovative capabilities between large and middle sized companies is conducted (Table 5).

According to the results shown in Table 5, there is no significant difference in development of new products and services (IN1), development of new production methods (IN2), risk-taking by key executives (IN3), market innovation (IN4) and firm's innovative strategic orientation (IN5) between large and medium-sized companies, which is in accordance with the results of correlation analysis (Table 4).

Difference in performance of large and medium-sized companies is examined using Mann Whitney U test (Table 6).

TABLE 5. MANN WHITNEY U TEST OF DIFFERENCES IN INNOVATIVE CAPABILITIES BETWEEN LARGE AND MEDIUM-SIZED COMPANIES

	IN1	IN2	IN3	IN4	IN5
Mann-Whitney U	8266.500	8332.500	7622.500	8281.500	7853.000
Wilcoxon W	20512.500	20578.500	13508.500	20527.500	20099.000
Z	-.273	-.160	-1.410	-.249	-.987
Asymp. Sig. (2-tailed)	.785	.873	.159	.804	.324

Source: Empirical analysis results.
Note: Grouping Variable: SIZE.

TABLE 6. MANN WHITNEY U TEST OF DIFFERENCES IN PERFORMANCE BETWEEN LARGE AND MEDIUM-SIZED COMPANIES

	PERF1	PERF2	PERF3	PERF4	PERF5	PERF6
Mann-Whitney U	7439.500	7129.500	7998.000	8192.000	7243.500	7517.000
Wilcoxon W	13325.500	13015.500	13884.000	14078.000	13129.500	13403.000
Z	-1.720	-2.253	-.730	-.402	-2.049	-1.613
Asymp. Sig. (2-tailed)	.085	.024	.466	.687	.040	.107

Source: Empirical analysis results.
Note: Grouping Variable: SIZE.

TABLE 7. MANN WHITNEY U TEST OF DIFFERENCES IN INNOVATIVE CAPABILITIES BETWEEN COMPANIES IN FOREIGN AND COMPANIES IN DOMESTIC OWNERSHIP

	IN1	IN2	IN3	IN4	IN5
Mann-Whitney U	3962.000	3815.000	4697.000	4477.000	4313.500
Wilcoxon W	27182.000	27035.000	27917.000	27697.000	27533.500
Z	-2.241	-2.593	-.572	-1.072	-1.434
Asymp. Sig. (2-tailed)	.025	.010	.567	.284	.152

Source: Empirical analysis results.
Note: Grouping Variable: F_OW

Results from Table 6 show that there is a statistically significant difference in sales growth (PERF2) and increase in market share (PERF5) at 0.05 level. Mean ranks indicate that medium-sized companies have higher sales growth and increase market share in comparison to main competitors than large companies. As for sales (PERF1), profitability (PERF3), market share (PERF4) and sustainability of achieved performance levels (PERF6), results show that there is no significant difference between large and medium-sized companies (Table 6). Presented results are the same as the results of correlation analysis (Table 4).

The difference in innovative capabilities between companies in foreign and domestic ownership is analyzed using Mann Whitney U test (Table 7).

From the results presented in Table 7 it can be seen that there is a significant difference in development of new products and services (IN1) and development of new production methods (IN2) between these two groups of companies. Mean ranks show that foreign companies are better in development of new products and services and development of new production methods. Difference in risk-taking by key executives (IN3), market innovation (IN4) and firm's innovative strategic orientation (IN5) between foreign and domestic companies is not statistically significant. The results obtained by correlation analysis are the same (Table 4).

Performance of foreign and domestic companies is than compared using Mann Whitney U test and results are presented in Table 8.

TABLE 8. MANN WHITNEY U TEST OF DIFFERENCES IN PERFORMANCE BETWEEN COMPANIES IN FOREIGN AND COMPANIES IN DOMESTIC OWNERSHIP

	PERF1	PERF2	PERF3	PERF4	PERF5	PERF6
Mann-Whitney U	4223.50	3912.000	4316.000	3707.500	3747.500	4303.000
Wilcoxon W	27443.500	27132.000	27536.000	26927.500	26967.500	27523.000
Z	-1.655	-2.359	-1.414	-2.821	-2.726	-1.500
Asymp. Sig. (2-tailed)	.098	.018	.157	.005	.006	.134

Source: Empirical analysis results.
Note: Grouping Variable: F_OW.

Results from Table 8 show that there is a significant difference in sales growth (PERF2), market share (PERF4) and increase in market share (PERF5) between these two groups of companies, which is in accordance with the results of correlation analysis (Table 4). From mean ranks it can be concluded that companies in foreign ownership have better performance in terms of sales growth, market share and increase in market share. Results of Mann Whitney U test also show that there is no statistically significant difference in sales (PERF1), profitability (PERF3) and sustainability of achieved performance levels (PERF6) between companies in foreign and companies in domestic ownership.

TABLE 9. SPEARMAN'S RHO CORRELATION MATRIX

		IN1	IN2	IN3	IN4	IN5
PERF1	Correlation Coefficient	.244**	.272**	.251**	.234**	.250**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
PERF2	Correlation Coefficient	.247**	.295**	.280**	.335**	.348**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
PERF3	Correlation Coefficient	.244**	.366**	.308**	.324**	.347**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
PERF4	Correlation Coefficient	.335**	.295**	.265**	.285**	.299**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
PERF5	Correlation Coefficient	.293**	.392**	.295**	.352**	.394**
	Sig. (2-tailed)	.000	.000	.000	.000	.000
PERF6	Correlation Coefficient	.246**	.333**	.331**	.359**	.357**
	Sig. (2-tailed)	.000	.000	.000	.000	.000

Note: ** Correlation is significant at the 0.01 level (2-tailed).

TABLE 10. MANN WHITNEY U TEST OF DIFFERENCES IN DIMENSIONS OF INNOVATIVE CAPABILITIES BETWEEN COMPANIES WITH LESS AND THOSE WITH MORE DEVELOPED INNOVATIVE CAPABILITIES

	IN1	IN2	IN3	IN4	IN5
Mann-Whitney U	1664.500	1130.500	2308.500	1216.500	912.000
Wilcoxon W	22574.500	22040.500	23218.500	22126.500	21822.000
Z	-9.075	-10.238	-7.866	-10.034	-10.559
Asymp. Sig. (2-tailed)	.000	.000	.000	.000	.000

Note: Grouping Variable: Ward Method

TABLE 11. MANN WHITNEY U TEST OF DIFFERENCES IN PERFORMANCE BETWEEN COMPANIES WITH LESS AND THOSE WITH MORE DEVELOPED INNOVATIVE CAPABILITIES

	PERF1	PERF2	PERF3	PERF4	PERF5	PERF6
Mann-Whitney U	4298.500	3943.500	3649.500	3791.500	3597.500	3487.500
Wilcoxon W	25208.500	24853.500	24559.500	24701.500	24507.500	24397.500
Z	-3.733	-4.444	-4.964	-4.739	-5.137	-5.492
Asymp. Sig. (2-tailed)	.000	.000	.000	.000	.000	.000

Note: Grouping Variable: Ward Method

All 30 estimated correlations shown in Table 9 are statistically significant at 0.01 level and positive, as predicted. The magnitude of correlation varies from 0.234 between sales (PERF1) and market innovation (IN4) to 0.394 between market share (PERF5) and company's innovative strategic orientation (IN5). In other words, it can be concluded that innovative capability and company's performance are interdependent.

Using cluster analysis companies were classified according to their innovative capabilities. Number of categories was not given in advance. Analysis of the dendogram has shown that the responding companies can be classified into two categories. Cluster analysis is than repeated, but this time with a fixed number of clusters. The aim of repeated cluster analysis is classifying companies into two clusters; one that contains companies with more developed innovative capabilities, and the other with less developed innovative capabilities. Results have shown that there are 60 companies in the first group, i.e. group with more developed innovative capabilities, and 204 companies in the second group. Mann-Whitney U-test was then used to examine whether there is a difference in each of five elements of innovative between companies in first and second group (Table 10).

In the same way, using Mann-Whitney U-test, the difference in achieved performance levels between companies that have more and those that have less developed innovative capabilities is examined. The results from Table 11 show that there is a significant difference in all six elements of achieved performance between these two groups of companies, at the significance level of less than 1%.

Mean ranks show that companies with more developed innovative capabilities, i.e. development of new products and services, development of new production methods, risk-taking by key executives, market innovation and firm's innovative strategic orientation, achieve higher levels of performance in terms of sales (PERF1), sales growth (PERF2), profitability (PERF3), market share (PERF4), increase in market share (PERF5)

and sustainability of achieved performance levels (PERF6). This conclusion is also confirmed by the results of correlation analysis (Table 9).

Results from Table 10 show that, with the empirical significance of less than 1% for all five elements, it can be concluded that companies from the two groups differ in the development of new products and services (IN1), development of new production methods (IN2), risk-taking by key executives (IN3), market innovation (IN4) and firm's innovative strategic orientation (IN5).

Conclusion

The findings of this study have proven the interdependence of innovative capabilities and company's performance. According to the results of correlation analysis, all five elements of innovative capabilities, i.e. development of new products and services, development of new production methods, risk-taking by key executives, market innovation and firm's innovative strategic orientation are positively correlated to company's performance in terms of sales, sales growth, profitability, market share, increase in market share and sustainability of achieved performance levels. Such results are confirmed by Mann Whithey U test, according to which companies with more developed innovative capabilities achieve higher performance levels measured by all six above mentioned indicators.

Results have shown that there is no difference in innovative capabilities between large and medium-sized companies, but that medium-sized companies have slightly higher levels of sales growth and increase in market share. Also, according to the results of empirical analysis, companies in foreign ownership are slightly better at development of new products and services and development of new production methods. Foreign companies also achieve higher levels sales growth, market share and increase in market share.

References

Ambrosini, V., Bowman, C., Collier, N., 2009. "Dynamic capabilities: An exploration of how firms renew their resource base," British Journal of Management, Vol.20, pp.S9-S24, http://dx.doi.org/10.1111/j.1467-8551.2008.00610.x

Capon, N., Farley, J., Hulbert, J., Lehmann, D., 1992. "Profiles of product innovators among large US manufacturers," Management Science, Vol.38, pp.157-69, http://dx.doi.org/10.1287/mnsc.38.2.157

Deeds, D., DeCarolis, D., Coombs, J., 1999. "Dynamic capabilities and new product development in high technology ventures: An Empirical analysis of new biotechnology firms," Journal of Business Venturing, Vol.15, pp.211-29, http://dx.doi.org/10.1016/S0883-9026(98)00013-5

Delmas, M., 1999. "Exposing strategic assets to create new competencies: The case of technological acquisition in the waste management industry in Europe and North America," Industrial and Corporate Change, Vol.8(4), pp.635-71, http://dx.doi.org/10.1093/icc/8.4.635

Drnevich, P., Kriauciunas, A., 2011. "Clarifying the conditions and limits of the contributions of ordinary and dynamic capabilities to relative firm performance," Strategic Management Journal, Vol.32, pp.254-79, http://dx.doi.org/10.1002/smj.882

Eisenhardt, K., Martin, J., 2000. "Dynamic capabilities: What are they?" Strategic Management Journal, Vol.21, pp.1105-121, http://dx.doi.org/10.1002/1097-0266(200010/11)21:10/11<1105::AID-SMJ133>3.0.CO;2-E

Hou, J.J., Chang, H.J., 2008. "Exploring the Core Components of Dynamic Capabilities", http://academic- papers.org/ocs2/session/Papers/A1/1164-2250-1-DR.doc [Accessed 25/01/10]

McKelvie, A., Davidsson, P., 2009. "From resource base to dynamic capabilities: An investigation of new firms," British Journal of Management, Vol.20, pp.S63-S80, http://dx.doi.org/10.1111/j.1467-8551.2008.00613.x

Miller, D., Friesen, P., 1983. "Strategy-making and environment: The third link," Strategic Management Journal, Vol.4(3), pp.221-35, http://dx.doi.org/10.1002/smj.4250040304

Newey, L., Zahra, S., 2009. "The evolving firm: How dynamic and operating capabilities interact to enable entrepreneurship," British Journal of Management, Vol.20, pp.S81-S100, http://dx.doi.org/10.1111/j.1467-8551.2008.00614.x

Petroni, A., 1998. "The analysis of dynamic capabilities in a competence-oriented organization," Technovation, Vol.18(3), pp.179-89, http://dx.doi.org/10.1016/S0166-4972(97)00093-X

Powell, T., 2001. "Competitive advantage: Logical and philosophical considerations," Strategic Management Journal, Vol.22(9), pp.875-88, http://dx.doi.org/10.1002/smj.173

Protogerou, A., Caloghirou, Y., Lioukas, S., 2008. "Dynamic capabilities and their indirect impact on firm performance," DRUID 25th Celebration Conference, Copenhagen

Teece, D., Pisano, G., Shuen, A., 1997. "Dynamic capabilities and strategic management," Strategic Management Journal, Vol.18(7), pp.509-33, http://dx.doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z

Wang, C., Ahmed, P., 2004. "The development and validation of the organizational innovativeness construct using confirmatory factor analysis," European Journal of Innovation Management, Vol.7(4), pp.303-13, http://dx.doi.org/10.1108/14601060410565056

Wang, C., Ahmed, P., 2007. "Dynamic capabilities: A review and research agenda," International Journal of Management Reviews, Vol.9(1), pp.31-51, http://dx.doi.org/10.1111/j.1468-2370.2007.00201.x