# DOES INDUSTRIAL CLUSTER INFLUENCE FIRMS' GROWTH? EVIDENCE FROM OLUYOLE INDUSTRIAL ESTATE, IBADAN OYO STATE, NIGERIA

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**ABSTRACT**
"Industrial cluster has proven to be of great benefit to many multinational firms all over the world; allowing the actor firms around the cluster to benefit from wealth of knowledge and other positive spill overs in the cluster. The study examines the influences of industrial cluster in Oluyole Industrial Estate in Ibadan, Oyo state on the growth of firms located within the industrial area. A descriptive cross-sectional design is adopted in the study. The design is appropriate because the study involved collecting data from employees and operators of businesses operating within industrial clusters with a view to determining whether or not the industrial cluster has impact on business growth in the area. The population therefore would comprise all manufacturing company in the State but for this study, five have been purposively selected. A total of three hundred and fifty-eight (358) respondents were sampled in the selected areas using simple random sampling technique. The study revealed that fully developed infrastructure was a major factor contingent to the growth of business firms within industrial clusters in the study area (p-value < 0.05). The study concluded that industrial clustering has significant influence on business growth when measured with increase in customer base, increase in market share, and increase in turnover".

**Key words: industrial cluster, growth, benefits, knowledge sharing, government policy:**

**JEL L:  L17**

## 1.1 INTRODUCTION

There is growing body of literature that recognises the classical approach to understanding the sub variables of organizational performance, as described by the Sink and Tuttle model (Sink and Tuttle, 1989). Studies on collective efficiency and flexible specialization (Bair and Palpacuer, 2012; Carswell, and De Neve, 2013) have brought to the fore the issue of business enterprises operating in close proximity to each other. Specific reference has been made to whether such clusters can contribute to the business growth of such enterprises in the developing countries (Gulati, 2012). The phenomenon of business firms located in industrial clusters is widespread in many countries, particularly in Italy, Brazil, Mexico, Peru and India as well as in some African countries such as Kenya, Tanzania, and Ghana. These firms have made significant inroads on the global supply chain for various products such as fashion, consumer goods, shoes, garments, precision surgical instruments and construction tiles.

Much of the recent studies on industrial clusters focuses on the incremental processes of innovation and learning within selected growth regions and clusters, offering snapshots of regional success rather than considering the capacity of particular clusters to sustain business growth over time by successfully adapting to economic change Lund-Thomsen and Pillay (2012) Also most of the studies on industrial clusters literature are often wide, covering diverse issues.

However, although researches have pointed directions to the importance of cluster to a firm, there have been scanty studies on industrial cluster in Nigeria particularly in Oluyole Industrial Estate in Oyo state, Nigeria, hence this study.

The present study examines industrial cluster and business growth in Oyo state. Also to ascertain the factors that are contingent to the growth of business firms operating within industrial clusters in Oyo State. Hypothesis tested is weather Industrial clustering can significantly influence business growth.

## 2.0 LITERATURE REVIEW
### 2.1.1 INDUSTRIAL CLUSTERS

In the Nigeria context, the clustering phenomenon was observed in computer village in Ikeja, Lagos State and in earlier economies, for example, cloth making in Onitsha, Aba in northern Nigeria and a trade cluster in the City of Kano. There are diverse amount of literature on industrial clusters. According to Lund-Thomsen and Pillay (2012) much of the recent literature on industrial clusters focuses on the incremental processes of innovation and learning within selected growth regions and clusters, offering snapshots of regional success rather than considering the capacity of particular clusters to sustain business growth over time by successfully adapting to economic change. This present research further shows how the result of industrial development and its peculiarity in Nigeria's business environment, and how it's Cluster Strategy makes it an acceptable platform for the country's business growth.

### 2.1.2 THE CLUSTER CONCEPT

Clusters can be viewed as geographical concentrations of interconnected firms and institutions in a certain field, and the idea of clusters suggests that regions should identify and develop their existing

regional competitive advantage (Porter, 1998; Porter, 2000). It was argues that the cluster would create a community of businesses located together in which members would seek enhanced environmental, social and corporate performance towards effective global trade competitiveness. It would encourage localization economies and enhance the likelihood of inter-firm technology and information transfers and equally motivate Nigeria's companies to go into product specialization and adoption of new technologies. (Federal Ministry of Commerce & Industry, 2007). It further, defined Industrial Clusters as oases of industrial activities and commerce, covering areas between 100 and 1, 000 hectares, which would be controlled by the organized private sector. Usually smaller in scope than the parks, these clusters were to be established by the States and Local Governments. Enterprise Zones according to the policy are platforms of 5 – 30 hectares, targeted at scaling up businesses from the informal sector to the formal sector. (Federal Ministry of Commerce & Industry, 2007).

## 3. METHODS

A descriptive cross-sectional design is adopted in this study. The design is appropriate because the study involved collecting data from employees and operators of businesses operating in industrial clusters with a view to determine whether or not the industrial cluster has impact on business growth. This study examines the influence of Industrial clusterson business growth of five selected companies in Oluyole Industrial Estate Ibadan, Oyo State. Nigeria. The population therefore would comprise all manufacturing company in the state but for this study five have been purposively selected. The survey covers the city of Ibadan. Purposive sampling is used to select five major manufacturing industries in Oluyole Industrial Estate, in Ibadan.

Due to difficulty in studying the whole population. It will be very impossible to use all the Staff of the five selected company. The sample size will be determined by using Yamane Taro formular

$$n = \frac{N}{1 + N \times (e)^2}$$

Where:

n = desired sample size

N = size of the population

e = Limit of error tolerance which was assured to be 5% (0.05): confidence limit.

N = 3470

e = 5% or 0.05

Therefore,

$$n = \frac{3470}{1 + 3470 \times (0.05)^2}$$

$$n = \frac{3470}{1 + 3470 \times (0.0025)}$$

$$n = \frac{3470}{1 + 8.675}$$

$$n = \frac{3470}{9.675}$$

$$n = 358.653$$

A total of three hundred and fifty-eight (358) respondents was sampled in the selected areas using random sampling.

The study used primary data for the sources collecting of data; structured questionnaire is used to solicit answers to the various variables covered in the objectives of the study

## 4.0 RESULTS

### 4.1.1 TABLE 2: Factors Contingent to the Growth of Business Firms within Industrial Clusters in Oyo State

| S/N | Statement | Mean Score | Standard Deviation | Mean Rank |
|-----|-----------|------------|--------------------|-----------|
| 1 | Cooperation | 4.17 | 1.160 | 2nd |
| 2 | Knowledge sharing | 4.01 | 0.927 | 4th |
| 3 | Strategic alliance | 3.94 | 0.925 | 5th |
| 4 | Trade partnership | 3.85 | 0.888 | 7th |
| 5 | Stable political and social conditions | 4.06 | 0.235 | 3rd |
| 6 | Favorable Government policy | 3.87 | 0.336 | 6th |
| 7 | Sufficient land/office space, rising land prices/rent | 3.50 | 0.231 | 9th |
| 8 | Fully developed infrastructure | 4.94 | 0.235 | 1st |
| 9 | Clear policy management by the Local government | 3.79 | 0.409 | 8th |
| 10. | Adequate protection of intellectual property rights | 3.30 | 0.169 | 10th |

**Source: Field Survey (2020)**

### 4.1.2 Factors Contingent to the Growth of Business Firms within Industrial Clusters in Oyo State

Table 2 above shows the factors contingent to the growth of business firms within industrial clusters in the study area. Descriptive analysis revealed that fully developed infrastructure was a major factor contingent to the growth of business firms within industrial clusters in the study area with a mean of 4.94 and standard deviation of 0.235.

Also cooperation with a mean score of 4.17 and standard deviation of 1.160 was a major factor contingent to the growth of business firms within industrial clusters in the study area. Stable political and social conditions with a mean of 4.06 and standard deviation of 0.235 was also one

of the major factor contingent to the growth of business firms within industrial clusters in the study area.

Ranked 4th among the factors contingent to the growth of business firms within industrial clusters in the study area was Knowledge sharing with a mean of 4.01 and standard deviation of 0.927. Ranked 5th with a mean of 3.94 and standard deviation of 0.925 is another factor contingent to the growth of business firms within industrial clusters in the study area which was strategic alliance. Favorable Government policy with a mean score of 3.92 standard deviation of 0.636 is also another factor contingent to the growth of business firms within industrial clusters in the study area.

Further analysis revealed that one of the major factor contingent to the growth of business firms within industrial clusters in the study area was trade partnership with a mean of 3.85 and standard deviation of 0.888. Also Clear policy management by the Local Government was another factor contingent to the growth of business firms within industrial clusters in the study area with a mean of 3.87.

Sufficient land / office space, rising land prices/rent was another factor contingent to the growth of business firms within industrial clusters in the study area with a mean score of 3.50 and standard deviation of 0.231. Adequate protection of intellectual property rights was the least factor contingent to the growth of business firms within industrial clusters in the study area with a mean score of 3.30 and standard deviation of 0.169

**4.1.3 Table 3: The Extent to Which Industrial Clustering In Oyo State Can Influence Business Growth**

| Statements | No change Freq./ % | Increase by 1-10% Freq. /% | Increase by 11-20% Freq./ % | Increase by 21-30% Freq./ % | Increase by more than 30% Freq./ % | Decrease Freq./ % | Total |
|---|---|---|---|---|---|---|---|
| Being located in an industrial cluster has affected your customer base | 24(7.9) | 117(38.6) | 130(42.9) | 32(10.6) | - | - | 303 (100) |
| Your market share has experienced which of these effects as a result of being located in an | 19(6.3) | 96(31.7) | 116(38.3) | 49(16.2) | 23(7.6) | - | 303 (100) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| industrial cluster | | | | | | | |
| Business turnover has increased as a result of being located in an industrial cluster | 45(14.9) | 76(25.1) | 108(35.6) | 74(24.4) | - | - | 303 (100) |
| Business gross profit has increased as a result of being located in an industrial cluster | 13(4.3) | 86(28.4) | 96(31.7) | 97(32.0) | 11(3.6) | - | 303 (100) |

**Field Survey 2020**

### 4.1.4 The Extent to Which Industrial Clustering In Oyo State Can Influence Business Growth

Table 3 revealed the percentage distribution of respondents by the extent to which industrial clustering can influence business growth in the study area. 42.9% of the respondents attested to 11-20% increase in customer base, while (7.9%) of the respondents reported no change in customer base owing to industrial clustering.

As illustrated by table 3, (38.3%) of respondents recorded 11-20% increase in market share owing to industrial clustering, while fewer percentage of respondents (6.3%) attested to no change in market share.

The study revealed that larger percentage (35.6%) of the respondents indicated 11-20% increase in turnover as a result of being located in an industrial cluster while 14.9% of them recorded no change in turnover.

Concerning the gross profit, 32.0% of the respondents indicated a 21-30% increase in gross profit as a result of been located in an industrial cluster, compare to 3.6% of respondents who recorded increase by more than 30%.

### 4.1.5 Hypothesis of the Study

The following hypotheses are formulated for this study:

$H_O$: Industrial clustering cannot significantly influence business growth

$H_1$: Industrial clustering can significantly influence business growth

Level of significance (p-value) is 0.05 Decision rule: Accept Ho if p-value > 0.05; Reject Ho if p-value $\leq$ 0.05.

**4.1.6 Table 4: Industrial Clustering cannot Significantly Influence Business Growth Chi-Square Tests**

|  | Value | Df | Asymp. Sig. P.value) |
|---|---|---|---|
| Pearson correlation | 74.021a | 8 | .015 |
| Likelihood ratio | 78.567 | 8 | .012 |
| Linear-by-Linear Association | 74.064 | 9 | .000 |
| N of valid cases | 303 |  |  |

**Source: Field Survey, 2020**

The main value that is of interested is from the output is the Pearson chi square value, which is presented in table 4, headed Chi-Square Tests. The chi square value is 74.021, with an associated significance level of 0.015 (this is presented in the column labeiled Asymp. Sig. To be significant the Sig. value needs to be .05 or smaller. In this case the value of 0.015 is *lesser* than the alpha value of .05, so we can conclude that our result is significant. Therefore the null hypothesis is rejected and the alternate hypothesis accepted which states that Industrial clustering cannot significantly influence business growth.

**4.1.7 Discussion of Findings**

The objective of the study to ascertain the factors that are contingent to the growth of business firms operating within industrial clusters in Oluyole Industrial Estate Oyo State. The findings of the study revealed that fully developed infrastructure was a major factor contingent to the growth of business firms within industrial clusters in the study area, closely followed by cooperation, stable political and social conditions, ranked 4th among the factors contingent to the growth of business firms within industrial clusters in the study area was knowledge sharing, and strategic alliance been the fifth factor. Also included among the factors are favorable government policy, trade partnership, clear policy management by the Local government and sufficient land/office space, rising land prices/rent, and adequate protection of intellectual property rights was the least factor contingent to the growth of business firms within industrial clusters in the study area. These Findings are in line with previous empirical research findings from Mohd, Peou and Ali (2010); Dandago and Usman (2011) and Sobri and Lucky (2011). Dandago and Usman (2011) in their study affirm that Government policy, positions and guidelines of government, schemes and incentives and support systems for the industrial cluster sectors, and particularly for business is a significant predictor of business growth in such locations. Also Mohd, Peou and Ali (2010) suggests that deliberate efforts are still needed on the part of governments, through its series of efficient policies affecting businesses in industrial cluster to nurture a climate that is conducive to successful operations of businesses located in industrial clusters.

Another findings of the study revealed that was increase in production orders as result of operating within an industrial cluster, also there was access to cheap labour, there was reduction in procurement cost. Clustering resulted in inflow of cheap raw materialswhile business clustering also resulted in having access to current market information, access to technological information.

Business clustering in the study area also resulted in sufficient production capacity due to presence of facilities**,** unlimited cost cutting measures, ease of local procurement of spare parts. Furthermore, the results showed that an overwhelming majority of the respondents claimed to great extent stricter environmental regulationsas a result of operating within an industrial cluster. The findings of this study is line with previous empirical research findings focused on the benefits of an industrial cluster, in that it creates competitive environment among the firms within the same industry as an important source to build up a highly innovative and competitive cluster. In his study, he finds that the clusters often lead to intense competition, increased production and access to cost cutting measures which leads to access to cheaper raw materials and he concludes that this increases the innovative capability of the cluster and the incentive to develop new products of a better quality and more efficient production facilities.

## 5.0    Conclusions and Recommendations

There are significant benefit of business cooperation within a cluster as a result of operating within an industrial cluster based on the analysis of data, the industrial clustering has significant influence on business growth when measured with increase in customer based, increase in market share, and increase in turnover and also increase in gross profit, fully developed infrastructure is a major factor contingent to the growth of business firms within industrial clusters. This work concludes that a business cluster, also known as an industry or competitive cluster, can enhance regional economic growth and income, increase company productivity, drive innovation, and stimulate new businesses (Barkley and Henry, 1997; Porter, 1990).

Therefore, cluster policies should support all clusters with the critical mass and capacity to grow, and also government cluster policies should be designed to align both small, medium and large business development initiatives with cluster growth strategies, this effort from the government will be able to spur additional small business growth and make their programs more efficient. Policy makers should also capitalize on what is already working to promote small, medium and large scale business growth-providing public sector leadership and coordination, making programs accessible to all entrepreneurs, and delivering comprehensive and long-term support-to help shape their cluster-based business strategies.

## 6.0: REFERENCES

Arrow, K. J. (1962). *The economic implications of learning by doing*, Review of Economic Studies, 29, 155-173.

Arthur, W. B. (1990). *Silicon Valley locational clusters: Do increasing returns imply monopoly?* Mathematical Social Science, 19, 235-251.

Bair, J., & Palpacuer, F. (2012). 'From Varieties of Capitalism to Varieties of Activism: The Antisweatshop Movement in Comparative Perspective', Social Problems, 59(4), pp. 552-543

Beaudry, C., & Swann, P. (2001). Growth in industrial clusters: A bird's eye view of the United Kingdom, *Stanford Institute for Economic Policy Research Discussion Paper No. 00-38,* Stanford, CA: Stanford University.

Bry, G., & Boschan, C. (1971). The Cyclical Analysis of Time Series: Selected Procedures and Computer Programs, NBER Technical Paper No. 20, New York: Columbia University Press.

Carswell, G., & De Neve, G. (2013). Labouring for global markets-Conceptualising labour agency in global production networks. Geoforum, 44(1), 62-70

Cook, G. A. S., Pandit, N. R., & Swann, G. M. P. (1999). The dynamics of industrial clustering in British broadcasting, *Loughborough University Business School Working Paper 1999*: 11.

Cooke, P., & Morgan, K. (1994). The creative milieu: a regional perspective on innovation, in: *The handbook of industrial innovation*, Edited by Dodgson, M. and Rothwell, R., London: Edward Elgar Publishers.

Dandago, K. I., & Usman, A. Y. (2011). Assessment of Government industralisation policies on promoting the growth of small-scale industries in Nigeria, Paper presented at the 2011 Ben-Africa conference, Zanzibar, Tanzania. pp. 1-17

Feser, E. J. (1998). Old and new theories of industry clusters.*Clusters and regional specialisation: On geography, technology and networks*, London: Pion Press.

Garelli, S. (1997). The four fundamental forces of competitiveness, *The world competitiveness yearbook 1997*, 17th edition, Switzerland: IMD.

Greater London Authority (2002). http://www.london.gov.uk, accessed 2002.

Gulati, M. (2012). Business responsibility: Global value chains, industrial clusters, and the future of CRS in India. Paper presented at "global value chains, industrial clusters, and the future of CRS in the BRICS countries," Copenhagen Business School, 12-14 December, Copenhagen.

Hall, P., & Markusen, A. (1985). *Silicon Landscapes*, Boston: Allen & Unwin.

Henderson, J. V. (1986). The efficiency of resource usage and city size, *Journal of Urban Economics*, 19, 47-70.

Hill, J., & McGowan, P. (2001). Developing a Competency in Contact Networking in Entrepreneurially Owner-Managed Small firms: A revised Model, in: *Research at the Marketing / Entrepreneurship Interface*, 2001, Edited by Hills, G.E. and Hansen, D.J. and Merrilees, B., Chicago: University of Illinois at Chicago.

Jacobs, J. (1969). *The economy of cities*, London: Penguin Books.

Jacobs, J. (1984). *Cities and the wealth of nations: Principle of economic life*, New York: Vintage.

Krugman, P. (1991a). *Geography and Trade*, Cambridge, Ma: The MIT Press.

Krugman, P. (1991b). Increasing returns and economic geography, *Journal of Political Economy*, 99, 483-499.

Kuah, T. H. (1998). *Competitive strategies of the disk drive sector in Singapore*, MBA dissertation, Scotland: Strathclyde University.

Kuah, T. H. (1995). *Acharacterisation study of the disk drive sector in Singapore,* unpublished dissertation, Singapore: Nanyang Technological University.

Lund-Thomsen, P., & Pillay, R. G. (2012). CRS in industrial clusters: An overview of the literature. Corporate Governance, 12(4), 568-578.

Marshall, A. (1890). *Principles of Economics*, London: Macmillan.

Marshall, A. (1920). *Principles of Economics*, 8th Edition, London: Macmillan.

Marshall, A. (1927). *Industry and Trade*, London: Macmillan.

Martilla, J. A., & James, J. C. (1977). Importance-performance analysis, *Journal of Marketing,* 51, 77-79.

May, W., Mason, C., & Pinch, S. (2001). Explaining industrial agglomeration: The case of the British high-fidelity industry, Geoforum, 32(3), 363-376.

Mohd Shariff, M. N., Peou, C., & Ali, J. (2010). Moderating Effect of Government Policy on Entrepreneurship and Growth Performance of Small-Medium Enterprises in Cambodia. *International Journal of Business & Management Science*. 3(1), 57-72

Nielsen, R. P. (1983). Should a country move towards international strategic market planning?, California Management Review, 25, January: 34 – 44.

Oakey, R. (1985). High technology industry and agglomeration economies in: Silicon landscapes, Edited by Hall, P., & Markusen, A., Boston: Allen and Unwin, 94-117.

Owen, D. (1999), Economic Geography Rewritten, The Business Economist, 30(1), 23- 38.

Pandit, N.R., Cook, G. A. S. & Swann, G. M. P. (2001a). The dynamics of industrial clustering in British financial services, Service Industries Journal, 4, 33-61.

Pandit, N.R., Cook, G. A. S., & Swann, G.M.P. (2001b). A comparison of clustering dynamics in the British broadcasting and financial services industries, International Journal of the Economics of Business, 9(2), 195-224.

Pandit, N. R., Cook, G. A. S., & Swann, G. M. P. (2000). A comparison of clustering dynamics in the British broadcasting and financial services industries, European Association for Research in Industrial Economics (EARIE) Annual Conference, 7-10 September 2000, Lausanne, Switzerland.

Porter, M. E. (1998a). On competition, Boston: Harvard Business School Press.

Porter, M. E. (1998b). Location, clusters and the 'new' microeconomics of competition, Business Economics, 33-1: 7-17.

Porter, M. E. (1998c). Clusters and the new economics of competition, Harvard Business Review, November-December: 77-90.

Porter, M. E. (2000), Location, competition and economic development: Local clusters in the global economy, Economic Development Quarterly, 14-1: 15-31.

Sink, D. S., & Tuttle, T. C. (1989). Planning and Measurement in your Organization of the Future, IE Press, Norcross, GA.

Sobri Minai, M., & Lucky, E. O. I (2011). The moderating effect of location on small firm performance: Empirical evidence. *International Journal of Business and Management*, 6(10), 178

**7.0     Appendix**

**4.1.1 TABLE 2: Factors Contingent to the Growth of Business Firms within Industrial Clusters in Oyo State**

| S/N | Statement | Mean Score | Standard Deviation | Mean Rank |
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**Source: Field Survey (2020)**

**3.1.4 Table 3: The Extent to Which Industrial Clustering In Oyo State Can Influence Business Growth**

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|---|---|---|---|---|---|---|---|
| Being located in an industrial cluster has affected your customer base | 24(7.9) | 117(38.6) | 130(42.9) | 32(10.6) | - | - | 303 (100) |
| Your market share has experienced which of these effects as a result of being located in an | 19(6.3) | 96(31.7) | 116(38.3) | 49(16.2) | 23(7.6) | - | 303 (100) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| industrial cluster | | | | | | | |
| Business turnover has increased as a result of being located in an industrial cluster | 45(14.9) | 76(25.1) | 108(35.6) | 74(24.4) | - | - | 303 (100) |
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**Field Survey 2020**


**4.1.1 Table 4: Industrial Clustering cannot Significantly Influence Business Growth**
**Chi-Square Tests**

| | Value | Df | Asymp. Sig. (P.value) |
|---|---|---|---|
| Pearson correlation | 74.021a | 8 | .015 |
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