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Cluster Factors for Productivity Improvement: A Case Study for a Home Appliance Cluster in Mexico.

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Abstract

Since the early nineteen hundred several associations have risen. These are cluster associations of concentrated firms belonging to the same industrial sector receiving support from academic institutions and the local government in order to enhance competitiveness. Literature seems to be vast on studying the effect of clusters on the competitiveness of members (see Karaev, Koh, and Thomas-Szamosi 2007; Awad and Amro 2017; Carrie 1999). However, there is vague formal analysis of the effects that clusters have on members' productivity. Therefore, this study aims to analyze whether Geographic Proximity, Social Capital and Innovation within a cluster affect cluster members' productivity, particularly in a local Mexican Home Appliance Industry Cluster (CLELAC). The data for analysis was retrieved using a self-designed survey, applied to current executives from the companies which are members of the cluster. This data was analyzed using the Partial Least Squares Algorithm, introducing the construct of Productivity as the dependent variable, and the constructs of Geographic Proximity, Social Capital, and Innovation as the independent variables. The results suggest that Geographic Proximity and Social Capital within a cluster affect positively firm's productivity growth, which proves the first two hypotheses of this study. Apart from the hypotheses, two new causal relations were found in the model: Proximity and its positive impact on the cluster's Social Capital; and Social Capital's impact on Innovation within the cluster. However, the impact that Innovation within the cluster may have on firm's productivity could not be proven.

Keywords
Productivity, Social Capital, Innovation, Geographic Proximity, Cluster.

Biographies

Karol Villarreal Zambrano is a B.Sc. In Business Management Engineering. She led a Junior Consultant Project on "Increase in the efficiency of the pallet preparation process for the morning routes in Arca Continental, bottler company for Coca-Cola". She also attended the Janusz-Korczak-Gesamtschule in an abroad year in 2013, to later continue her studies at the Universidad de Monterrey, and finally she took a semester abroad at the Hochschule Aschaffenburg University of Applied Sciences. She is also certified in International Competences.

Ruben Molina Cruz is a B.Sc in Business Management Engineering. He studied abroad in Brownsville, Texas throughout his childhood and teen years until he joined the University of Monterrey. He has developed part of his professional career as a Logistics Coordinator at John Deere Industries in Monterrey, Mexico. He also achieved a 3rd Place at a national level and 1st Place at a state level in General Electrics Summer Experience Program where he developed code through Alteryx to automize financial processes within the company. He is also a certified ISO 9001:2015 Audit.

Karla Guerra Davila is a B.Sc in Business Management Engineering. She led a Junior Consultant Project on “Development of a Standardized Process to increase the effectiveness of the Logistics Company” at Solistica in Monterrey, Mexico. She also attended Università Cattolica del Sacro Cuore in Milan, Italy, during her semester abroad

Luz Maria Valdez is currently a Director of Engineering Management Bachelor Academic Program in the University of Monterrey, in the state of Nuevo Leon, Mexico. She earned B.S. in Industrial Engineering and Systems and Masters in Quality Management at University of Monterrey, Mexico, and she is currently studying the Ph. D. in Administration Sciences from the Autonomous University of the State of Nuevo Leon, Mexico. She has 18 years of experience in the Quality field and 11 years as a higher education teacher. She has participated as consultant for the manufacturing and services in the quality field and participated as ASQ and IISE member.