Received: 19 April 2025 | Revised: 2 December 2025 | Accepted: 23 December 2025 | Published online: d Month yyyy

RESEARCH ARTICLE

FinTech and Sustainable Innovation
2026, Vol. 00(00) 1–7
DOI: 10.47852/bonviewFSI62025963

BON VIEW PUBLISHING

Industrial Clusters and Nearshoring: A Cross-Sectoral Analysis of Mexico's Competitive Advantage

Gabriel Silva-Atencio[1,*]

[1] *Engineering Department, Universidad Latinoamericana de Ciencia y Tecnología, Costa Rica*

Abstract: The research aims to estimate the significance of industry areas in making Mexico a better location for businesses from around the world to relocate their operations. The study looks at secondary data from nine global companies in the tech, airplane, car, and consumer goods fields using a qualitative-exploratory method. Companies want to know how perks from the state level work in real groups. When people in the same clique work together, share knowledge, and link the supply line, they save money. In the long run, this helps Mexico reach its goals. Furthermore, the USMCA enhances Mexico's integration with the US market. The study also talks about some major issues, including a severe lack of STEM talent (country figures show that only about 35% of Mexican graduates focus on science, technology, engineering, and math (STEM) areas, which is not enough to meet the needs of the cluster) and ongoing problems with infrastructure that keep people from reaching their full potential. Porter's diamond model and the global value chain (GVC) theory are used in this study to back up what has already been said about nearshoring. It also shows that the amount of cluster growth for each company is very different. If Mexico wants to move up in the GVC chart, it needs to change how its government works. These changes should be read by small and medium-sized businesses. People who own the houses should fix them up and teach their workers new things. The research works close to home lets us plan trips to places that are still growing. This research learned things from this study that modern society can use beyond school.

Keywords: nearshoring, industrial clusters, global value chains, supply chain resilience, STEM workforce, USMCA

1. Introduction

Worldwide supply chains change when states are less secure, so it's important for companies to be able to respond to new situations [1]. Times are changing, and big businesses are using nearshoring more and more. Therefore, they need to relocate their company to a nearby country. They have to move their business to a nearby country because of this. That's because they want to lower the risks, speed up the process, and give their business more freedom. At the moment, it is one of the best places to sell because it is close to the USA, which has one of the biggest markets for goods, and has a lot of customers [2].

Mexico's appeal extends beyond its geographical attributes to encompass significant strategic economic advantages. The USMCA, or US, Mexico, and Canada Agreement, is the most important free trade deal in the world. Businesses in North America can get into markets at very good prices because of it [3]. Its economic promise is also shown by a strong industrial base and a growing flow of Foreign Direct Investment (FDI), which is expected to hit $30–50 billion per year [4]. By 2030, this trend could add up to 2.5% to Mexico's Gross Domestic Product and create nearly 4 million new jobs. This would be a big change for the economy (ibid.).

But a strong economy won't give you an edge over your rivals in the long run. Because of these national traits, industrial groups form and grow, and they have a big effect on how well each company does. Heidenreich and Mattes [5] and Juhász et al. [6] say that these are places where institutions, companies, and experts in the same field can meet with each other.

These groups, according to Siddiqui et al. [7], are like societies that help people trade, share knowledge, and make the world a better place for everyone. It helps the area grow and works better. Through their tools, airplane, and car groups, they have shown that they can get a lot of FDI and make technology better.

A lot of studies have already been done on how nearshoring affects Mexico's economy as a whole [8–10], but there is still a big hole that needs to be filled. It has been forgotten what part industry groups play in this process. This gap means that the small-scale mechanisms, like supplier networks, joint R&D, and shared infrastructure, which make being close to other companies in clusters give them real competitive benefits, like supply chain stability and operating efficiency, have not been looked into.

Being close to each other can give you real competitive advantages, like a strong supply chain and excellent operations. These advantages can come from seller networks, joint research and development (R&D), and shared infrastructure.

Also, the main issues that make clusters less useful—such as bad infrastructure and a serious lack of STEM (science, technology, engineering, and math) skills—have not been fully researched.

***Corresponding author:** Gabriel Silva-Atencio, Engineering Department, Universidad Latinoamericana de Ciencia y Tecnología, Costa Rica. Email: gsilvaa468@ulacit.ed.cr

National studies (e.g., EMCO, 2023) show that only about 35% of Mexican college graduates focus on STEM fields. This leaves a big skills gap for high-value groups in their structural context.

A qualitative-exploratory method was used to look at secondary data from nine global companies in important industries. This study fills in the gaps. These groups aren't just a natural result of jobs moving closer to home; they're also active, planned systems that make Mexico's natural benefits even better, according to the report. This article is based on the following study question:

> What are some good reasons why industrial groups can use nearshoring as a way to gain a competitive edge at the business level?

In two important ways, this study makes things better than they were before. To begin, it does more than just report cases when it compares different businesses. It looks for the most important strategic and practical factors that make nearshoring work through clusters. For example, Toyota's Just-In-Time (JIT) method is used in car clusters. For the second part, these real-life results are used to go into more detail about supply chain security and cluster theory.

The modern society can now see how poor countries might use group economies to move up the global value chain (GVC). There is a critical review of the literature, a thorough methodology, a general analysis of the results, and a discussion that connects the results to theoretical frameworks like Porter's Diamond model in the parts that follow. All of this adds up to results that are useful in school and in real life.

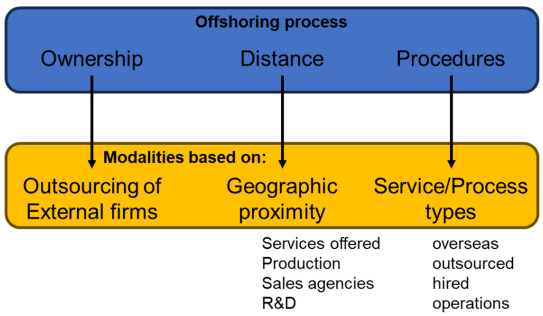
2. Literature Review

Supply lines are being reshaped on purpose in the current global economy. This is done to make the economy more resilient and efficient in the face of disruptions like pandemics and regional tensions. Nearshoring has become an important strategy for multinational companies (MNCs) that want to lower the risks that come with long, difficult supply lines in this situation [1]. Because Mexico is close to the USA and the USMCA negotiated trade benefits for both countries, Mexico stands to gain the most from this trend. It is expected to receive between $30 and $50 billion in FDI each year [2, 4]. The scholarly debate, however, uncovers a significant deficiency: whereas macroeconomic benefits are well recorded, the processes by which these national characteristics convert into competitive advantages at the business level are little examined. This study brings together research on nearshoring and industrial clustering to provide a theoretical basis for looking at how Mexico's industrial clusters work as the key link in this process.

It is essential to differentiate nearshoring from the more general practice of offshore in order to provide a conceptual foundation for the investigation. Offshoring, a strategic consequence of globalization, is the migration of a company's business processes, activities, or operations to a foreign nation [3, 7]. There are a few main ways to classify this process that show what it is and what it is meant to do. In Figure 1 [1], you can see a typological structure that breaks down the overseas process into its most basic parts: control, distance, and routines. This puts nearshoring in its proper place as a separate strategy choice within the larger offshore model [1].

Empirical data from Mexico's key export sectors provide enlightening, although often descriptively expressed, examples of this potential. In the automobile business, companies like Toyota, BMW, and Audi have built innovative manufacturing centers. They leverage local supplier networks to put well-known manufacturing techniques into action, such as JIT, which lowers inventory costs and makes them more responsive [9–11].

Figure 1
Typology of the offshoring process



Foxconn and Flextronics are two of the biggest companies in the electronics industry that have leveraged Mexico's trade infrastructure to sell their products in North America. But this industry is more likely to be affected by global shortages of parts, showing a conflict between efficiency and resilience [12, 13]. Aerospace (Safran) and consumer goods (Whirlpool, Honeywell) are two examples of different industries that use Mexico's nearshoring benefits. Each needs its own specific groups of skilled workers and technology experts [14–16].

On the other hand, a close study of the existing material makes a clear gap. Many of the studies that have been done so far are still based on in-depth case studies of single firms or broad economic studies of FDI trends. While these cases make sense in different fields, there isn't a good mental framework that links them all together. Local governments, small and medium-sized businesses (SMEs), and the role that institutions play in making nearshoring work can all be learned.

Moreover, the literature frequently underscores challenges, such as the acute scarcity of STEM talent—evidenced by national data showing a proportion of graduates significantly below cluster needs [17, 18]—and infrastructural deficiencies. GVC can get better, and groups can grow, according to George [19] and Hartley et al. [20]. It does look at these problems, though. This is a unique way for towns, companies, and schools to work together. It's critical. This might aid us in understanding how these teams accomplish their goals.

These attempts have let them turn their attention to something else. Even though the story makes a lot of sense, it doesn't connect theory and analysis. There are groups that get paid. They happen a lot. The law doesn't make it clear what teams need to do or how they need to work together to nearshoring in order to save money and keep the supply chain safe over time.

To make up for that, someone needs to look into how groups work in different kinds of businesses. This will be done by giving more than just case study details. This work will use these ideas to look at how nearshoring works in Mexico at the moment. Some very important work has already been done, and this study builds on that. Now that companies handle the whole supply chain around the world, this will help us figure out what makes a business great.

3. Methodology

It is done using a qualitative-exploratory study method to find out what part industry groups play in making Mexico a better place for nearshoring. Both Adler [21] and Ahmed [22] say that the best way to get a close look at the main events and exchanges is to use a qualitative method.

Changes to the way a production center or supply chain is set up are hard to make and depend on the situation. A "multiple case study" was used to do the research. The ability to observe how various companies and businesses use cluster benefits is given. The research can draw broad conclusions without using numbers [23–25].

The cases were picked in a way that was meant to make sure they were both common and detailed enough to be important. It was less possible that MNCs would be picked unfairly if three strict rules were followed. This made the facts right. At first, feedback from the business world was given a lot of attention to show that groups work in different ways for each company. Along with Whirlpool and Honeywell, two companies that make consumer items, Foxconn, Flextronics, Jabil, and Safran were added. Toyota, BMW, and Audi were too.

Second, it had to be proven that the methods used for nearshoring in Mexico from 2015 to 2024 were effective. You can find this information in OECD records, reports from public companies, and official government documents from the Mexican Ministry of Economy. Each company had to show proof that it was an active part of a building that makes things. This was the third and most important thing. To do this, you can work on R&D projects together, use the same technology, or join trade networks. It took some thought to pick these examples so that they would be useful and help the study reach its goals.

Only data from outside sources were used to get a full and complicated picture of the data. The dataset is made up of three main types of data: academic research articles from Google Scholar, Scopus, and Web of Science; industry reports from reputable organizations like the World Bank, Deloitte, and McKinsey & Company; and case studies from reputable business and supply chain magazines like the *Harvard Business Review* and the *Journal of Supply Chain Management*.

Many search words would be used for the study, such as "nearshoring," "industrial clusters," "Mexico," "FDI," "supply chain resilience," and "SME integration." The study checked all the fresh English and Spanish books that came out from 2015 to 2024 to see if they were still useful. The same way was used to get information from each case for the study. The plan worked very well, as shown by the numbers, business records, and unique cluster traits. It was shown how things got better and how many jobs were created.

Two strict steps were taken to make sure the study was real and right. Topic study can help you find themes and patterns that keep coming up. It was easy to organize the info with NVivo. For this method, a codebook with both logical and inductive codes had to be made. You can talk about codes and how to get a job, why you like where you live, and how to spend money when you're not in your own country. The study looked at how stories and facts help us understand things.

Someone from outside checked the theme code. With a confidence rating of 0.87, the hackers mostly agreed. Then, a cross-case comparison study was done [26] to find fresh ways to group things and keep up with changes in the business. This would make it possible to connect the outcomes of each case to the study as a whole.

Because triangulation was done carefully, the facts were stronger. The business records show that money was sent from people and groups in other countries. A lot of people who know a lot about running supply lines looked at the study and agreed with what it found.

The study is aware of the issues that come up when you use secondary data. There is a chance of a "success bias" because business and government reports tend to highlight successes and might not talk about failures or mistakes in strategy as much as they should. To get rid of this bias, methodological triangulation was used with great care. The information from company reports was compared to reviews from reputable international groups (like the World Bank and the OECD) and university studies. This showed that problems were structurally important, even if they were played down in papers that were more about success. For example, data analysis or case studies that focus on failed or poor groups could be used in future studies to lower this risk.

There is also a lot of useful information in the data, but it may not apply to all industry sites or small businesses in Mexico. That being said, the study has a strong, reliable, and full picture of how nearshoring groups work in Mexico because it uses a clear, step-by-step way to analyze it.

4. Results

The thematic and comparative analysis of the nine MNC case studies reveals a complex interplay of factors that enhance the efficacy of industrial clusters in Mexico's nearshoring context. Cross-sectoral comparison studies corroborated the findings, which are organized into prominent thematic areas that often emerged from the data.

The examination of secondary data indicates a complex economic effect resulting from the nearshoring trend in Mexico. These effects show up not just as immediate benefits, but they also create big structural problems that need to be addressed in order to assure long-term progress. The synergistic benefits, derived from case studies and macroeconomic analyzes, are classified into six principal advantage areas. Figure 2 [1] gives a complete picture of these economic benefits, showing how they are connected to the center of Mexico's economy in a radial way. It also talks about the important problems and expected economic effects that define the entire nearshoring environment.

People have spoken a lot about the advantages of being near the US market in terms of location and logistics. This proximity gives the supply chain significant operational benefits, such as shorter lead times and lower transportation costs, which make it more flexible. Companies like Toyota and BMW in the car sector have used technology to create and improve JIT manufacturing methods, for

Figure 2
Holistic view of nearshoring advantages and challenges in Mexico

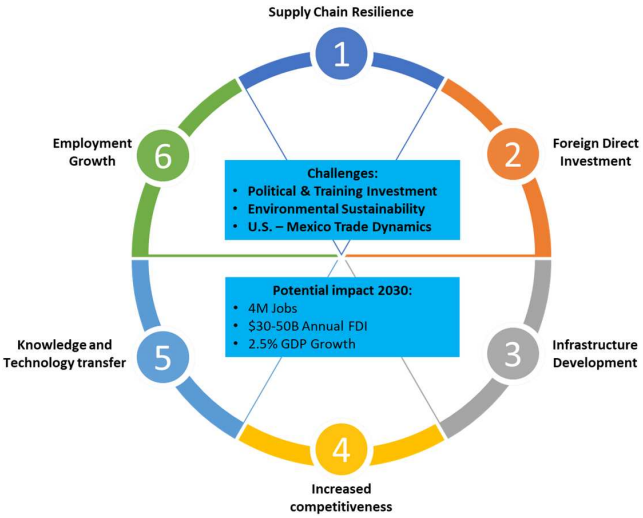


Table 1
Comparative analysis of cluster performance by sector

Sector	Key strengths	Primary challenges	Cluster maturity
Automotive (e.g., Toyota, BMW, Audi)	Deep local supplier networks, JIT implementation, high-skilled job creation.	High dependency on US market, need for continuous technological upgrading.	High
Electronics (e.g., Foxconn, Flextronics)	High FDI concentration, rapid scalability, large-scale employment generation.	Vulnerability to global component shortages, limited local R&D.	Medium
Aerospace (e.g., Safran)	High-value production, strong international partnerships, specialized innovation.	Extremely specialized talent requirements, stringent regulatory standards.	Medium-High
Consumer Goods (e.g., Whirlpool, Honeywell)	Supply chain efficiency for bulk goods, strong brand presence, market responsiveness.	Price competition, logistics optimization for diverse product lines.	Medium

Note: Cluster maturity was judged on a general level using three combined criteria: (1) the size and breadth of local supply networks, (2) proof of joint R&D and knowledge spillovers, and (3) formalized institutional support and control frameworks.

example. Businesses may now retain inventory at a far lower cost and respond more quickly to market fluctuations [10, 11]. The USMCA framework supports this strategic position, which offers the corporation a competitive edge that is difficult for competitors in other countries to imitate.

The analysis of FDI and its economic effects supports macroeconomic projections, showing that FDI from nearshoring amounts to $30–50 billion per year [4]. The majority of this investment is concentrated on already-existing industrial clusters rather than being dispersed evenly. This demonstrates that the primary forces behind capital development are these clusters. Furthermore, it is anticipated that these clusters would play a significant role in job creation, perhaps generating up to 4 million jobs by 2030. Comparative analysis, however, reveals that the types and quality of occupations vary between sectors. Putting electronics together, for example, often results in more manufacturing jobs that don't need any specialized skills, while the automotive and aerospace clusters tend to provide more skilled technical and engineering jobs. This shows that the kinds of businesses that make up a cluster have a direct effect on how well nearshoring works.

The results show that there are still problems with infrastructure and rules, even though these are excellent things. The study shows that huge clusters function better when they have established infrastructure, but there are substantial problems with secondary logistics networks, energy reliability, and internet connection that make it tougher for smaller domestic suppliers to join and make the cluster ecosystem operate better. People frequently say that inefficient rules and red tape are other reasons why investments can't be made swiftly and goods can't be moved across borders easily. This could take away the good things about living close to other countries.

A comparison study across sectors, shown in Table 1 [10–12, 14], shows how the different sectors' clusters work and what their strategy objectives are. The automobile industry has the highest advanced level of local supplier integration and the most advanced production system deployment. The electronics industry, on the other hand, is a major source of FDI and jobs, but it is more likely to be affected by problems in the global supply chain and is less connected to local R&D ecosystems. The aerospace and consumer goods sectors are in the middle. They have advanced talents, but they are smaller. They usually require individuals who are even more specialized and highly skilled.

Lastly, the idea of handling groups and putting together small businesses is important for long-term success. Adding small businesses to the value chains of big businesses is what makes groups last and come up with new ideas. This lets people in the area talk about new ideas and let others know about events. It's important to understand how this mix works and how issues are resolved, such as not having enough schools and teachers. The hub could be run by the government, business groups, or deals between the government and outside groups.

Things that were supposed to happen did not go as planned. Places of business in Mexico have jobs close to home. A lot of work and money come from other countries because they are in a good spot. So, they need to fix the big issues, like the lack of STEM-savvy individuals and appropriate buildings. To make the government work better, they also need to work with more small businesses. This will help them stay strong and improve their supply lines over time.

5. Discussion

The study found that businesses need business groups to help them get the most out of the benefits of nearshoring in Mexico. Being close and not having enough trade deals are both good, but they're not enough to make things work.

How well groups work together to get things done is what matters. That's how things stay useful for a long time. A lot of well-known ideas are being added to what is being said in the academic world about GVCs, economic geography, and supply chain strategy by people who look at these numbers. Some people also disagree with the study and believe that more research should be done.

People are moving their jobs to Mexico. Porter's diamond of national economic advantage is a model from 1990 that can help us figure this out. In real life, there is a lot of proof for this. Most of the time, the conditions inside clusters are better for MNCs than the conditions outside of these groups. This is especially true for the tools that the trained workers use and the big group of them.

When the best tech and car companies are close to each other, it's hard to do business and stay ahead. Because they want to stay competitive, businesses are more likely to keep making their methods better. One thing that shows this is JIT tools.

It's also clear that companies help each other when their trade networks grow. In turn, this makes the whole cluster more effective

through a positive feedback loop. The fourth factor in the model, however, is demand conditions, which are mostly outside the model because the most complex demand is found north of the line. This doesn't necessarily mean that Porter's framework has a flaw; it just means that it needs to be changed to fit nearshoring hubs. It fits with the idea of "anchor-based" cluster growth in economic geography, where being close to a large, advanced foreign market can stand in for skilled domestic demand and drive standards for quality and innovation; it's possible that being close to a strong foreign market may be the main "national" benefit for nearshoring hubs. This makes Porter's method more general.

Ambos et al. [27] and Panwar et al. [28] have also written about GVC and how to fix it and make it better. Big companies like Safran and Toyota run the networks of local mechanics for cars and planes. The term for this is "captive governance."

Since MNCs make these rules, producers may be able to do a better job. But companies might not be able to make things better if they stop. That's because they will be too busy with more important things, like design or their own R&D. Because not enough people work in STEM areas, the study can't make this much progress.

A lot of people in the area have business jobs that don't pay well. People thought that nearshoring helped businesses grow before this study. If the government tells you not to, you can still work with groups in GVCs. It's still important, no matter what or who cares.

The Triple Helix of Innovation shows that to make a knowledge-based economy, businesses, schools, and the government must all work together. The work in question agrees with what Cai [29] and Leydesdorff [30] say.

From the data, the research can see that there are now strong ties between companies and the Mexican government. However, there are weaker and less well-organized ties between businesses and schools. In order for the Triple Helix plan to work and close the STEM gap, cluster-specific boards should be set up [31]. Large companies, schools, and government agencies could all be a part of these groups. They could work together to make specific courses, fund research projects that help local businesses, and set up well-organized job programs. It would change the university from a source that doesn't do anything to a partner that does. This would help build a long-term talent pool.

This proves that companies don't need what kids learn in school. The STEM gap isn't just a number. The best future groups will probably be the ones that make it easy for Triple Helix to work together. Schools work directly with cluster firms to make study programs and classes that help the firms build a long-term talent pool and keep new ideas coming from inside the firm instead of just hiring outsiders.

Putting Mexico's experience in the context of nearshoring around the world also shows both common trends and unique factors that affect the situation. Similarly, countries in Eastern Europe like Poland and the Czech Republic have used their closeness to markets in Western Europe, their skilled labor forces, and their membership in the EU to create advanced manufacturing clusters, especially in the electronics and automotive industries [32]. However, compared to Mexico, these countries tend to have stronger infrastructure within the area and higher graduation rates in STEM fields, which makes it easier for them to join global value chains. On the other hand, countries in Latin America like Costa Rica and Brazil have created specialized groups in medical products and airplanes, respectively [33]. This has been done by actively encouraging FDI and keeping their institutions stable. Still, they often have the same problems as Mexico, such as gaps in infrastructure, broken rules, and a lack of skilled workers. The USMCA's special access to the US market and decades of linked industrial ecosystems have made Mexico stand out. This is due to the unique size and strategic depth of its clusters. This comparison shows that the cluster model is a good way to bring jobs closer to home in developing economies, but only if policies are made that specifically address the region's educational, economic, and societal problems.

Prior to knowing what this study did not allow, you must first comprehend what it did not include. There is a success bias in business and government records because people don't talk about failures or mistakes as much. Still, it covers a lot of ground and uses official government data.

The case studies come from big, well-known businesses all over the world. Smaller companies from around the world or in the same country may not see the real problems they face when they try to fit in with cluster groups. A qualitative-exploratory study method was used to find themes and links in the data. It's not good for business to be nice to some groups, though.

This does, however, make it possible to learn more in some ways. Latin America or Eastern Europe are two new areas that are trying to use similar nearshoring models. The results could help them too, but it's important to remember that every case is different. The research might be able to get real-time information from longitudinal studies about how long and how well some groups can handle things that track their growth and function over time.

Changes in output depend on the amount of FDI, the number of groups, and the number of groups. In a quantitative study, this could be shown with an R model. Finally, more in-depth observational case studies that look at what small businesses in these groups have been through would be very helpful. Future study could also combine personal observations with quantitative analysis. For example, it could model the link between the number of clusters and FDI to get results that are more applicable to a wider range of situations.

These studies would give us a useful bottom-up view in addition to the top-down view given here. More study may be able to build on this work by filling in these gaps. This would give us a better and more useful picture of how poor countries can carefully use nearshoring to get fair and long-lasting growth.

6. Conclusions

It was the goal of this study to carefully look into how business groups have helped make Mexico a top place for nearshoring. A qualitative-exploratory method is used to look into nine foreign companies in important fields for the study. Being close to each other and having trade deals are found to be much more beneficial when people work together on tasks.

As it turns out, industry groups are the main way that Mexico's terrain helps companies compete. So that they can do this, they connect different parts of the value chain and share information to make things run more smoothly. It was found that these groups can't reach their full potential because of big problems, such as not having enough STEM experts and infrastructure problems that keep happening.

There are many ideas about nearshoring in developing countries, and this work adds to them. That is, it adds to Porter's GVC diamond model. The study shows that when a company nearshores, being close to strong foreign markets can help it grow. Models are often based on what people want in the present.

The study also shows that bunch growth looks very different for every kind of business. On the other hand, auto groups are better at adding new things and thoughts. Business groups send most of the money that comes into the country. Of course, these groups are more likely to be hurt by problems in the world's supply chain.

It's smart to focus on one way of making money instead of many. The results show that policy efforts should focus on three important areas. First, public–private partnerships should be made to set up specialized STEM training institutes in key groups. These schools should teach skills like robotics and digital supply chain management. Second, smart investments in infrastructure that improve both main transport routes and "last-mile" secondary networks inside industrial parks. Third, encouraging small and medium-sized businesses to join together through cluster-based supplier development programs. These programs involve MNCs and government agencies helping with technical issues and foreign approval.

To find business-friendly places in Mexico, people who work in the field know how important it is to use numbers. Unless it's for business reasons, most people won't tell you to pick a clump. Don't worry about how safe the cluster is or how clever the people who work there are. Things can get better.

They demonstrate how crucial it is for field workers to pick places in Mexico that are good for business. Few people say you should only work when you choose a place. Feel confident that the cluster is secure, creative, and able to assist workers in improving their health.

A long-term study is the best way to see how groups change over time. This study should use numbers to look at how rules that group things together hurt the business. To look at how small businesses fit in, this study should use words. It would be helpful to know how nearshoring can help poor countries grow in a fair and long-lasting way.

New rules, being in the right place, and changes in how global supply chains work have all made Mexico a hub for nearshoring. The study finds that industrial groups are where these parts come together most often to give a business an edge over its competitors. Mexico has achieved a lot of progress, but for it to be successful in the long run, it has to find ways to improve its infrastructure and human capital development while also creating more creative and inclusive cluster ecosystems. The results shown here provide us both an academic basis for understanding this phenomenon and a practical way to improve Mexico's place in GVCs.

Acknowledgment

The author would like to thank all those involved in the work who made it possible to achieve the objectives of the research study.

Ethical Statement

This study does not contain any studies with human or animal subjects performed by the author.

Conflicts of Interest

The author declares that he has no conflicts of interest to this work.

Data availability statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

Author Contribution Statement

Gabriel Silva-Atencio: Conceptualization, Methodology, Software, Validation, Investigation, Resources, Data curation, Writing – original draft, Writing – review & editing, Visualization, Supervision, Project administration, Funding acquisition.

References

[1] van Hassel, E., Vanelslander, T., Neyens, K., Vandeborre, H., Kindt, D., & Kellens, S. (2022). Reconsidering nearshoring to avoid global crisis impacts: Application and calculation of the total cost of ownership for specific scenarios. *Research in Transportation Economics*, *93*, 101089. https://doi.org/10.1016/j.retrec.2021.101089

[2] Martinez, N., & Terrazas-Santamaria, D. (2024). Beyond nearshoring: The political economy of Mexico's emerging electric vehicle industry. *Energy Policy*, *195*, 114385. https://doi.org/10.1016/j.enpol.2024.114385

[3] Cavenaile, L. (2021). Offshoring, computerization, labor market polarization and top income inequality. *Journal of Macroeconomics*, *69*, 103317. https://doi.org/10.1016/j.jmacro.2021.103317

[4] Piedra Mayorga, V. M., Vázquez Alamilla, M. Á., Rodríguez Moreno, R., Alcántara Hernández, M. E., Piedra Guzmán, M. L., & Hernández Gálvez, J. W. (2024). El impacto del nearshoring en México: Una oportunidad competitiva [Foreign capital in neo-structuralism: The subordinate internationalisation of Latin America]. *Ciencia Latina Revista Científica Multidisciplinar*, *8*(4), 4632–4647. https://doi.org/10.37811/cl_rcm.v8i4.12688

[5] Heidenreich, M., & Mattes, J. (2025). Regional innovation systems and innovation clusters. In I. S. Schulz-Schaeffer, A. Windeler, & B. Blättel-Mink (Eds.), *Handbook of innovation: Perspectives from the social sciences*, (pp. 1–18). Springer. https://doi.org/10.1007/978-3-031-25143-6_44-1

[6] Juhász, R., Lane, N., & Rodrik, D. (2024). The new economics of industrial policy. *Annual Review of Economics*, *16*, 213–242. https://doi.org/10.1146/annurev-economics-081023-024638

[7] Siddiqui, M. F., Khalid, W., & Arsalan, M. (2024). Reshoring concepts: Definitions and a structured bibliometric review. *Modern Supply Chain Research and Applications*, *6*(4), 393–410. https://doi.org/10.1108/MSCRA-04-2024-0012

[8] Lábaj, M., & Majzlíková, E. (2023). How nearshoring reshapes global deindustrialization. *Economics Letters*, *230*, 111239. https://doi.org/10.1016/j.econlet.2023.111239

[9] Seiferlein, B., Gernsheimer, O., & Kanbach, D. K. (2022). Fostering entrepreneurial competencies for business model innovation-the case of Audi Denkwerkstatt. *International Journal of Automotive Technology and Management*, *22*(4), 401–423. https://doi.org/10.1504/IJATM.2022.126821

[10] Weiss, N., Schreieck, M., Wiesche, M., & Krcmar, H. (2020). From product to platform: How can BMW compete with platform giants? *Journal of Information Technology Teaching Cases*, *11*(2), 90–100. https://doi.org/10.1177/2043886920944185

[11] Pérez-Moure, H., Lampón, J. F., & Cabanelas, P. (2024). Mobility business models toward a digital tomorrow: Challenges for automotive manufacturers. *Futures*, *156*, 103309. https://doi.org/10.1016/j.futures.2023.103309

[12] Choi, B. (2022). Competitive advantage of Taiwanese tech companies–focusing on the cases of Foxconn and TSMC. *China Regional Studies*, *9*(1), 31–53. https://doi.org/10.34243/JCAS.9.1.31

[13] Sarangdhar, V., Awate, S., & Mudambi, R. (2024). Business model innovations in high-velocity environments. *Journal*

of Business Research, *183*, 114864. https://doi.org/10.1016/j.jbusres.2024.114864

[14] Rangel-Padilla, M. (2021). State-business relations and industrial upgrading in the digital era: The cases of software and aerospace sectors in Mexico (2000–2012). *Business and Politics*, *23*(3), 309–329. https://doi.org/10.1017/bap.2020.18

[15] Whitchurch, P. C., & Johnson, J. A. (2023). The Honeywell UOP Parex ™ process: Fifty years of growth for the petrochemical industry (case study. In J. Mortier (Ed.), *Industrial arene chemistry: Markets, technologies, sustainable processes and cases studies of aromatic commodities*, (pp. 297–325). Wiley. https://doi.org/10.1002/9783527827992.ch11

[16] Yumurtacı Hüseyinoğlu, I. Ö., Kurtay, D., Aşar, İ., & Dilmaç, S. (2022). Designing of cost-effective and sustainable logistics system: Whirlpool case. *Emerald Emerging Markets Case Studies*, *12*(3), 1–22. https://doi.org/10.1108/EEMCS-09-2020-0321

[17] de Lima, O. P., Maduro, M. R., Correia Filho, W. L., de Melo, Goncalves., H, Simonetti., R, G., & Amorim, A. (2025). Logistics and global strategy: Impacts of offshoring, nearshoring and reshoring on supply chains. *RGSA – Revista de Gestão Social e Ambiental*, *19*(2), 1–21. https://doi.org/10.24857/rgsa.v19n2-081

[18] Delgado Linares, K. J. (2023). *Evaluación de la competitividad en PRONIED bajo el enfoque del Instituto Mexicano para la competitividad (IMCO) para ofertas en obras por licitación pública: Caso de estudio peruano [Evaluation of competitiveness in PRONIED under the approach of the Mexican Institute for Competitiveness (IMCO) for bids in public works tenders: Peruvian case study]*. *Universidad Católica de Santa María*. Retrieved from: https://repositorio.ucsm.edu.pe/handle/20.500.12920/13027

[19] George, A. S. (2024). The fourth industrial revolution: A primer on Industry 4.0 and its transformative impact. *Partners Universal Innovative Research Publication*, *2*(1), 16–40. https://doi.org/10.5281/zenodo.10671872

[20] Hartley, K., Baldassarre, B., & Kirchherr, J. (2024). Circular economy as crisis response: A primer. *Journal of Cleaner Production*, *434*, 140140. https://doi.org/10.1016/j.jclepro.2023.140140

[21] Adler, R. H. (2022). Trustworthiness in qualitative research. *Journal of Human Lactation*, *38*(4), 598–602. https://doi.org/10.1177/08903344221116620

[22] Ahmed, S. K.. (2024). The pillars of trustworthiness in qualitative research. *Journal of Medicine, Surgery, and Public Health*, *2*, 100051. https://doi.org/10.1016/j.glmedi.2024.100051

[23] Burnard, K. J. (2024). Developing a robust case study protocol. *Management Research Review*, *47*(2), 204–225. https://doi.org/10.1108/MRR-11-2021-0821

[24] Cleland, J., MacLeod, A., & Ellaway, R. H. (2021). The curious case of case study research. *Medical Education*, *55*(10), 1131–1141. https://doi.org/10.1111/medu.14544

[25] Wohlin, C. (2021). Case study research in software engineering—It is a case, and it is a study, but is it a case study? *Information and Software Technology*, *133*, 106514. https://doi.org/10.1016/j.infsof.2021.106514

[26] Khoa, B. T., Hung, B. P., & Hejsalem-Brahmi, M. (2023). Qualitative research in social sciences: Data collection, data analysis and report writing. *International Journal of Public Sector Performance Management*, *12*(1–2), 187–209. https://doi.org/10.1504/IJPSPM.2023.132247

[27] Ambos, B., Brandl, K., Perri, A., Scalera, V. G., & van Assche, A. (2021). The nature of innovation in global value chains. *Journal of World Business*, *56*(4), 101221. https://doi.org/10.1016/j.jwb.2021.101221

[28] Panwar, R., Pinkse, J., & de Marchi, V. (2022). The future of global supply chains in a post-COVID-19 world. *California Management Review*, *64*(2), 5–23. https://doi.org/10.1177/00081256211073355

[29] Cai, Y. (2022). Neo-triple helix model of innovation ecosystems: Integrating triple, quadruple and quintuple helix models. *Triple Helix*, *9*(1), 76–106. https://doi.org/10.1163/21971927-bja10029

[30] Leydesdorff, L. (2021). *The evolutionary dynamics of discursive knowledge: Communication-theoretical perspectives on an empirical philosophy of science*. Switzerland: Springer.

[31] Ladeira, C. S. B., & Ferreira, J. J. M. (2025). Multinational enterprises in global value chains using MCA approach: Mapping the field and future research. *International Marketing Review*.https://doi.org/10.1108/imr-03-2025-0104

[32] zu Ermgassen, S. O. S. E., E, S. O. S., Hawkins, I., Lundhede, T., Liu, Q., Thorsen, B. J., & Bull, J. W. (2025). The current state, opportunities and challenges for upscaling private investment in biodiversity in Europe. *Nature Ecology & Evolution*, *9*(3), 515–524. https://doi.org/10.1038/s41559-024-02632-0

[33] Martinez, V., & Pessoa, L. (2024). Foreign capital in neo-structuralism: The subordinate internationalisation of Latin America. *Problemas del Desarrollo*, *55*(219), 139–166. https://doi.org/10.22201/iiec.20078951e.2024.219.70208

How to Cite: Silva-Atencio, G. (2026). Industrial Clusters and Nearshoring: A Cross-Sectoral Analysis of Mexico's Competitive Advantage. *FinTech and Sustainable Innovation*. https://doi.org/10.47852/bonviewFSI62025963