

Export Processing Zones and their Constituent Firms: Over Four Decades of Research in Review

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Abstract

Free zones are specialized in manufacturing for exports that offer firms' free trade conditions and a liberal regulatory environment. Despite the mounting interest of scholars and practitioners, no effort till date has been made to take stock of a large amount of literature on free zones. To fill this gap, we systematically reviewed the extant literature on free zones, following a structured approach. We reviewed 188 articles (listed in JCR) belonging to 153 different journals over a span of 46 years (1974-2023). This detailed review indicated that free zones have generally been viewed and highlighted as a policy instrument that aims to achieve socio-economic objectives. However, realizing the interest of the management scholars, this review structures the extant literature to promote scholarly dialogue on management practices and environmental implications of this revelatory industrial research site, by mapping the literature into themes, summarizing trends and identifying gaps in extant literature.

Keywords: *Free Zones, Management, Strategy, Context, Review*

Introduction

Free zones are “fenced-in industrial estates” (World Bank, 1992, p. 7) “with special incentives set-up to attract foreign investors, in which imported materials undergo some degree of processing before being exported again” (ILO, 1998, p. 3). Free zones have many names—e.g., maquiladoras, duty-free zones (DFZs), export processing zones (EPZs), comprehensive zones, special economic zones (SEZs), factories or custom bonded warehouses and have different focuses--e.g., import substitution, export enhancement etc. (Wong & Chu, 1984). These different types of zones have different goals, rules, ownership models, and strategic directions (ILO, 1998; Alansary & Al-Ansari, 2023). This article examines the general concept of these zones and therefore, uses ‘Free Zones’ to represent all types of zones.

Globally, a rapid proliferation of free zones after World War II was mainly derived from the introduction of export-led growth strategies around the world. Increase of number of Free Zones from just 79 situated in 25 countries in 1975 to 5400 situated in 147 countries in 2023 shows their remarkable proliferation (UNCTAD, 2022, 2023). This number is increasing dramatically and around 500 additional free zones are planned in different countries (UNCTAD, 2022, 2023). Free zones employ approximately 65 million workers worldwide (UNCTAD, 2020). Today, free zones exist in different shapes and sizes, including an entire province or just a few firms. The nature of activity at free zones has also diversified and evolved from labor to technology intensive sectors and even includes the services sector—e.g., tourism (Cirera & Lakshman, 2017). With the rise in number and significance of free zones, a corresponding increase in the research involving free zones has also taken place. However, no comprehensive effort has yet been made to take stock of research in this field.

To fill this gap, we have conducted a comprehensive review of research articles on free zones following content analysis protocols (Krippendorff, 2004). Though a study by Alansary and Al-Ansari (2023) provides a general knowledge about the nature of Free Zones, by presenting the classifications and types of economic zones, and provides insight into what distinguishes Free Zones and economic zones from one another. Furthermore, it aggregates the Free Zone into its constituting components, concluding with insight into future research by identifying relevant challenges and gaps. However, a bird's eye-view of extant literature suggests that a free zone has mainly been viewed as a socio-economic policy instrument. With this view, scholars have focused on investment, growth, cost and benefits, consumption and production, employment generation, social welfare and social infrastructure related issues of free zones. Several promising aspects, inciting the great interest of management scholars and businesses, have remained underdressed. This review aims to contribute by shifting the focus of attention from overemphasized socio-economic implications of free zones and their contextual setting to underemphasized areas of management practices and environmental implications of free zones.

Since free zones appear to be at a critical junction, we believe that this is the important time to undertake this review. The growing protectionism is re-erecting the previously dismantled exchange and venture hindrances through the WTO and different instruments of liberalism (Arnold, 2012). Therefore, free zones are gaining more significance in business research.

This review makes the following contributions:

- a. Provides required guidance to the scholars by mapping free zones as a revelatory research site.
- b. Classifying literature into major themes
- c. Summarizes trends and identifies differences within different streams of research
- d. Pinpoints the gaps in the extant literature.

To achieve these objectives, we conduct a systematic review involving 182 articles (JCR listed) on free zones. We maintain that novelty in our work exists for the following reasons:

- I. It is the first ever review on free zones research for management scholars and practitioners. Despite a dire need, effort to structure and cluster the literature on non-

- socio-economic aspects of free zones and firms located therein was virtually non-existent. Our work fills this important gap.
- II. This review has been organized in such a way that it provides an informative summary kit for ready guidance to future researchers and practitioners in this arena.
 - III. It sheds light on the incongruities in extant literature to promote scholarly dialogue and to identify avenues for research that might offer convergence to different viewpoints.

This literature review is primarily a qualitative synthesis (Tranfield et al., 2003) with two major objectives; a) to map, consolidate and assess a field of study and b) to identify gaps that if filled, may further the body of knowledge. It is important to note that research on free zones is huge and quite diverse. Therefore, a preliminary mapping of this whole body of research is required to identify various streams and sub-streams for future literature reviews on free zones that might aim to develop framework by focusing on a particular stream of study.

With these objectives in mind, this systematic literature review of the 188 articles on Free Zones, employing a structured approach (e.g., Deng, 2012) and content analysis (Krippendorff, 2004) has resulted in extraction of four themes namely free zones-a policy instrument, context, management practices, and environmental implications of free zones.

In taking stock, this review finds that previously ‘free zones as policy instrument’ and their ‘context’ remained the focus of scholarly attention, but presently research focus has shifted to two other themes—i.e., management practices and environmental implications of free zones. This literature review discusses these two themes only.

This review is organized as follows. The first section describes the method employed for the literature review. The second section discusses the background and historical evolution of free zones. In the third section, we critically review the extant literature related to key themes and describe the avenues for future research. We concluded in the last section.

Method for Literature Review

Sampling

We have systematically reviewed the extant literature on Free Zones, following a structured approach for content analysis (Cropanzano, 2009; Deng, 2012). To ensure high quality and relevance, we included only Journal Citation Reports (JCR)-indexed journals. This decision aligns with systematic review best practices to limit publication bias and enhance rigor (Tranfield et al., 2003). This review consists of research work published over the duration of 49 years (1974-2023). We did not find any article from the Journal Citation Report published before 1974. We used different keywords--e.g., free zones, industrial free trade zone, maquiladoras, foreign trade zone, export free zone, export processing free zone and free production zone in Boolean and title searches.

The articles’ identification involves three steps. Firstly, we found relevant articles published by practice oriented as well as academic journals. We searched various databases (e.g, Wiley Blackwell Journals, Emerald, Elsevier (Science Direct), Ebrary, Springerlink, Taylor & Francis Journals, JSTOR and EBSCOHost Business Source Premier, that provided us access to the leading journals (**Table 1**). We considered all journals relating to categories—such as Business,

Geography, Economics, Finance, Management, Urban Studies, Planning and Development etc. Detailed searches of these databases returned 550 articles in total. Secondly, we sorted out articles to remove duplication and we ended up with 448 articles. All these articles were saved in chronological order in separate folders. The articles from the same journal were placed in one folder.

Table 1: Number of articles included in review- database wise

Year	Jstor	Elsevier	Taylor and Wiley-Blackwell	Emerald	Springer	Sage	American Economic	Northwes tern	World Scientific	Oxford Universit	The Cambrid	Total
1974		1										1
1975												
1976												
1977												
1978												
1979												
1980	1											1
1981												
1982		1										1
1983			1									1
1984			1	2								3
1985												
1986			2		1							3
1987		2		1								3
1988						1						1
1989	2				1							3
1990						1						1
1991				1								1
1992		1	1	2								4
1993		1	1	1		1						4
1994			1	1		1						3
1995			1	1								2
1996												
1997		1	4	1								6
1998		1	1	1								3
1999												
2000			1	3								4
2001	1		1	2								4

2002													1
2003	1												3
2004													5
2005													4
2006													7
2007													9
2008													5
2009													9
2010													7
2011	1												10
2012													8
2013													10
2014													7
2015	1												10
2016													9
2017													20
2018	1												8
2019													
2020													1
2021													1
2022													3
2023													3
Total	8	42	60	49	6	6	10	2	1	1	2	2	189

At the initial step, the inclusion criterion was quite broader. We collected all articles from 1974 to 2023. Next, we deleted all the articles not published in the Journal Citation Report (JCR) listed journals. This way, we ended up with 188 impact factor articles from 153 journals. Of 188 articles, 75 relate to Free Zones—a policy instrument; 41 relate to Management Practices; 57 relate to the context and 8 relate to environmental implications of free zones (**Table 3**). To bring into limelight the context's effect we have also categorized research studies on free zones country wise (**Table 2**).

Table 2: Studies on Free Zones involving different countries

Country	Number of studies
China	33
Mexico	21
India	15
USA	11
Philippines	10

Korea	7
Sri Lanka	5
Indonesia	4
Malaysia	4
Mauritius	3
Poland	2
Iran	3
Taiwan	2
Dubai	2
Costa Rica	2
Thailand	2
Dominance Republic	2
Haiti	2
Others (Singapore, Neitherland, Hong Kong, South Africa, Israel, Jordan, France, Pakistan, Germany Canada, Russia, Bangladesh, Vietnam etc.)	24

Coding and Analysis

We used content analysis for our review by employing a systematic and structured approach for reduction of data (Krippendorff, 2004). Content analysis has helped us testing, revising, and constantly improving the coding process by comparing categories extracted from data, allowing traceability and intersubjective verifiability and providing historical insights through analysis of text (Seuring & Gold, 2012). Thus, this approach helps ensure the interpretive validity and reliability of data. We conducted two rounds of coding under the guidance of the lead author to ensure the reliability and plausibility of selected themes. Several meetings were conducted and discussions held in these meetings that helped in the refinement of the code book. We used a formalized codebook to review previous literature adapted from Laplume et al. (2008) and Seuring & Gold (2012), capturing variables such as research focus, methods, theories, and geographic settings. Moreover, to identify and elaborate themes, we used comparisons between and with-in themes (Eisenhardt, 1989).

Major Themes in Export Processing Zones

The literature review of 172 of 188 articles suggests that articles relating to free zones can be clustered around the following four main themes: 1) *Free zones as a policy instrument*, 2) *Context*, 3) *Management practices*, and 4) *Environmental implications of free zones* (**Table 3**). Empirical work won more space than theoretical work in the overall literature on Free Zones.

The themes frequency by year shows that ‘Free Zones a Policy Instrument’, ‘Context’ and ‘Management Practices’ have been the most scholarly investigated themes (**Figure 1**). Likewise, ‘Environmental Implications’ being a relatively less discussed theme has peaked in recent years. It is worth mentioning that during 1974 to 1984 research has solely been dedicated to examining the socio-economic implications of free zones (**Figure 1**). In the lines ahead, we discuss two themes—management practices and environmental implications that are of more interest to management scholars and business practitioners.

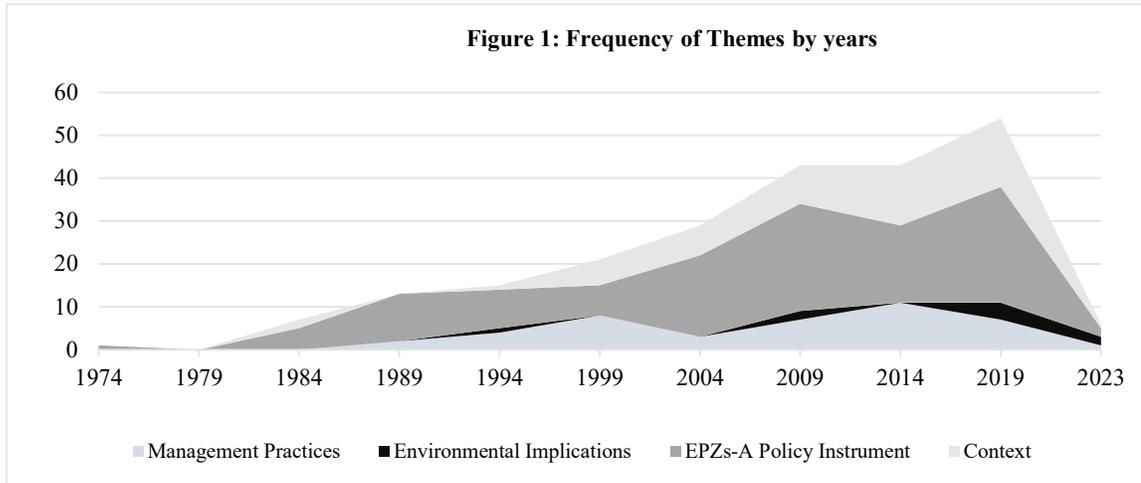


Table 3: Themes frequency period wise- Theoretical and Empirical

Years	Management Practices		Environmental Implications		Free Zones-A Policy Instrument		Context		Total	
	T	E	T	E	T	E	T	E	T	E
1974-1980	0	0	0	0	1	0	0	0	1	0
1981-1990	1	1	0	0	4	4	2	1	7	6
1991-2000	2	7	1	0	5	5	6	3	14	15
2001-2010	3	7	0	2	9	13	2	12	14	34
2011-2023	4	16	2	3	9	25	12	19	27	63
Total	10	31	3	5	28	47	22	35	63	118

Note: T= Theoretical; E= Empirical. Out of 182 articles, 172 articles are reported in this Table. 10 articles have been used to build introduction and method sections are not reported here.

After a careful review of several definitions (Ortega et al., 2015; Waters, 2013; Yucer & Siroen, 2017), we define Free Zones as statutorily created investment parks (delimited or not) that work as a quid pro quo between investing companies and host governments, where Governments offer fiscal incentives in exchange for export enhancement, job creation, transfer of technology, socio-economic development, social uplift etc. through free zones.

Management Practices

Multifarious and diverse research in this theme (with 41 articles) made us organize it at following levels of analysis: a) overall free zone level, b) constituent firm level, c) inter-firm level and d) intra-firm level. For instance, a study by Wu and Hong (2023) claims that EPZs have enhanced nearby (outside Zone) enterprises' performance and productivity in the zone's upstream and horizontal industries. But the downstream industries show no signs of improvement.

Overall Free Zones

Research relating to overall free zones *level of management* aimed to understand a) general management/administration of free zones, b) standards and c) supply chain and logistics management.

General management of free zones

Research on the first streamlet shows that administrative innovation is underway at free zones and incentives are being repealed (Hu, 2017). Similarly, Pak and Majid (2011) show a government led spatial umbrella plan emerges when zones fail to integrate interests of all stakeholders. While the maintenance related problems emanating from equipment, management and personnel cause serious performance decline at maquiladoras (Dowlatshahi, 2008).

This streamlet also explains how workplace management imposes coping strategies in the face of the pandemic like COVID 19, affecting levels of employment and lives of internally migrant workers (farmers) at EPZs in Vietnam (Le, 2022).

Standards

In the second streamlet, research has been conducted in two major areas. In the first research area, Dror's (1984) pioneer work on the labor laws and relations in free zones of four countries in terms of wage and remuneration structures recommends applicability of ILO instruments in full. Subsequently, Romero (1995) views labor standards a pressure on regimes governing free zones, while Domínguez et al. (2010) question the effectiveness of labor standards in improving working conditions. The second area of this streamlet deals with the effect of ISO certification on maintenance, supplier relationships, managerial support, employees' involvement and quality systems (Dowlatshahi, 2008, 2011).

Supply Chain and Logistics Management.

A body of research shows that Mexican free zones (maquiladoras) could not successfully manage supply chain and logistics because of poor procurement practices leading to failure to develop local resource for inputs (MacLachlan & Aguilar, 1998), less integration of work force and more distance (Haytko et al., 2007) and not successfully localizing various segments of the supply chain (Blyde, 2014).

The role of efficient management of resources in free zones has been studied as well. Elimam and Girgis (2012) propose measures through which production and delivery of water resource costs can be reduced. The efficient management of electricity resources to control the rise in electricity

consumption (Flores et al., 2004) and to gain competitive advantage (Munguia et al., 2018) have also been investigated.

Constituent Firm Level

At the firms' level in free zones, researchers mainly examined the firms' strategies. Success of Just in Time (JIT) production strategy depends on commitment and education of the management (Alcaraz et al., 2014), proper administration and right use of powers by managers (Garcia et al., 2014). This research proposes that the success of the JIT strategy can be assessed through increase in productivity indices, operational flexibility of production systems and inventory, cost and quality indicators. Similarly, business strategy is important in shaping the firm's important decisions. In the language of strategy, innovation is a part of business strategy (Johnson, Whittington & Scholes, 2011). Innovation performance improves with better clusters' mutual relationships, improved resource availability and proper knowledge management (Lai et al., 2014). Moreover, paying better attention to local issues leads to more eco-innovation (Alosie & Macke, 2017) and leads to improved import intensity (Seyoum, 2017).

Research at firms' level involving human resource strategies at free zones is scarce. We noted only one study that empirically examined the shift in human resource strategy at free zones in China (Ding et al., 1997). This study illustrates the way foreign invested firms switched from a) centrally planned job allocation to open job markets, b) long job to contract based jobs, and c) egalitarian pay structure to remuneration structure that attends to differences in skills and training levels.

In terms of outsourcing strategies, Fernandes and Tang (2012) examine the choices of vertical integration vis-à-vis outsourcing and suggest that regulations relating to imported components can affect integration decisions. In a similar treatment, Li (2013) examines the reasons to outsource the tasks and suggests that decrease in offshoring costs affect firm offshoring choices.

Inter-Firm Level

Research aimed at inter-firms' level of analysis is quite limited, and we noted only two (2) studies. With an optimistic view, Vargas and Johnson's (1992) work shows that quality management methods and techniques might be successfully transferred between firms located in distant countries. On the other hand, Dowlatshahi's (2005) study on concurrent engineering and designing portrays a quite pessimistic view of inter-firm relationships, showing that the lower involvement of maquiladoras in design effort is due to low level of understanding between firm (maquiladoras) and headquarters.

Intra-Firm Level

At the intra-firm (organizational) level, researchers have examined the individual employees, firm-employees dyad and employee-employee dyad.

At the level of **individual employees**, two areas have received the scholarly attention– corporate entrepreneurship and religiosity of the managers. Corporate entrepreneurship plays a key role in industrial upgrading and roles of higher responsibility are earned by managers themselves rather than given by the parent firm (Sargent & Mathews, 2006). Likewise, better managerial performance is earned through improved alignment between modern technology, divinity and nature and for this purpose managers worship spirits at Indian free zones (Ishii, 2017).

Researchers paid highest attention to the streamlet of ***firm-employee relationships***. Of eight (8), five (5) studies examine the antecedents of employee turnover working at free zones. The causes include hazardous and stressful working conditions (Becerril et al., 1997; Le, 2022), health related factors like smoking, surgery and chronic illness (Becerril et al., 1997; Guendelman et al., 1998), occupational, and social factors, such as work shift duration, nationality of the company, direct wage and human capital formation (Loess et al., 2008). Extant stream of literature also explores the effects of work values like values relating to social status of job and upward striving (Pelled & Hill, 1997a) and effects of participative management on turnover in Free Zones (Pelled & Hill, 1997b). The rest three (3) studies are devoted to the role of training and empowerment in environmental performance (Daily, Bishop & Massud, 2010), TQM practices in free zones (Jun et al., 2006) and the causes of industrial disputes like contract of employment, employer-employee relationships, working conditions, pay rates etc. (Nzuve & Kiilu, 2013).

At the intra-firm level of analysis, in terms of ***employee – employee dyad***, a study empirically negates the notion that MNEs at free zones employ expatriates only at senior positions (Sannassee, 2007). In the same vein, work by Wang (2017) suggests several measures to resolve these problems between local and foreign staff members. Another interesting article in this streamlet examines the role of discourse, language and subjectivity in terms of the gender division at free zones (Soni-Sinha, 2016).

Environmental Implications of Free Zones

Despite the mounting scholarly significance of the proactive management for environmental protection, this theme has commanded little scholarly attention in free zone literature. Research in this theme can be categorized into three main sub themes: a) negative environmental effects of free zones, b) positive environmental effects of free zones and c) managerial responses to environmental degradation.

This review identifies four (6) studies discussing the negative implications of free zones due to managerial insensitivity/concern to the environment in three different countries. Moure-Eraso et al. (1994) conducted research showing communities serious concerns regarding environmental degradation caused by free zones in Mexico. Liu et al. (2007) posit that free zones are responsible for causing economic degradation. They identify Environmental Kuznets Curve while studying the concentration of production induced pollutants in Shenzhen (China). Similarly, another study shows public dissatisfaction with corporate management practices relating to environmental conservation (Choudri et al., 2017). Likewise, research by Rahman et al. (2021) investigates the sources of toxic elements in indoor dust samples to evaluate possible health risks due to exposure of human body through dermal contact, inhalation, and ingestion. However, this study suggests that toxic elements present in indoor dust samples might not have significant impact on causing non-cancer and cancer risks to children and adults in the EPZ area, Bangladesh.

However, Shah and Rivera (2007) claim Trinidad and Tobago's facilities operating inside free zones and facilities located in Government managed free zones (not private) show higher environmental responsibility owing to the higher pressures to comply with institutional demands. Likewise, findings of a study by Kalumba et al. (2017) depict that noncompliance to environmental standards happens in industries located outside free zones due to poor monitoring and least interest of the government.

Two (2) studies have been identified dealing with the response by the governments' agencies to the environmental degradation caused by free zones. For instance, Yang (2017) reports the measures taken by the Chinese government to control pollution caused by free zones by promoting cleaner production mechanisms and environment friendly industry. Similarly, Otwong and Phenrat (2017) examine the quality of environmental impact assessment at two sites in Thailand, emphasizing the public participation as key to success of such assessments.

Future Directions

Since free zones in various countries are part of big master-planned development and have also been transformed into science parks, there arises a need to understand global-local dynamics leading to the integration of free zones. This integration has led to the mega-urban regions (Schrank, 2001), extending them beyond "static state delimited urban boundaries" (Ortega et al., 2015: 130).

Future Directions related to Management Practices

Management and strategy researchers need to rethink normative relational planning involving stakeholders (multicultural and diverse) in these rapidly evolving unique, revelatory and complex mega urban centers. They might investigate issues surrounding strategic planning and human resource diversity, selection, performance, attitudes and behaviors etc.

Overall free zones level of management: This review identifies the following important avenues for future research in overall free zones management:

- a. Several research gaps exist in literature relating to standards and certification in overall management of free zones. An ISO certification positively affects a firm's relationships with suppliers, managerial support, employee involvement and systems etc. (Dowlatshahi, 2011). The need is to conduct similar studies in other regions with contextual peculiarities, to ascertain whether similar results would hold. Though maintenance plays an important role in free zones progress (Dowlatshahi, 2008), the need is to transcend examining Total Preventive Maintenance (TPM) of equipment to include workers who maintain equipment at free zones in the second place, paving way for future research. Thirdly, free zones overall pre and post ISO certification performances (financial, environmental and social) also need an in-depth comparison. Moreover, future studies need to go beyond ISO 9000 to other certifications, especially in developing countries' context. Lastly, achieving ISO certification is a challenging task at free zones due to various inhibitors to ISO certification. Researchers in future should empirically explore the exhaustive list of inhibitors of ISO certification other than high costs and lack of managerial support.
- b. Free zones with energy efficient systems gain competitive advantages (Flores et al., 2004). Since comprehensive energy surveys of free zones are virtually non-existent globally, extant literature reveals little energy efficiency sensitivity on the part of managers of free zones.
- c. Hayto et al. (2007) explore the barriers to efficient cross-border supply chain management for Mexican Maquiladoras. With the global supply chain growing more important for manufacturers, future research should focus on identification of context specific impediments like supply time variations due to varied inspection times in different

- countries, inventory levels requirements, customer service etc. and should propose their solutions.
- d. The share of domestic value added as a proportion of a firm's exports is recorded decreasing in Mexican Maquiladoras for all firms irrespective of their sizes (Blyde, 2014). While free zones in China are not suffering from this decline. Why free zones fail to incorporate local content into the international supply chain is another important area that needs to be explored.
 - e. A significant gap in the reviewed literature is the limited comparative analysis of Free Zones located in Africa, South Asia (excluding India), and the Middle East. While the focus on China and Mexico is understandable due to the richness of data, zones in Pakistan, Bangladesh, Kenya, UAE, and Nigeria, among others, remain under-studied. Future empirical research must prioritize these regions to ensure a more globally inclusive understanding of Free Zone outcomes and governance models (Hartwell, 2018; UNCTAD, 2023).

Firm level:

This review identifies and suggests four areas for future research in free zones literature at Firm level.

- a. Limited efforts have been made to understand how Just in Time (JIT) production strategy affects the firm's performance. Garcia et al. (2014), however, standing out as an exception, identify fourteen (14) factors in Mexican Maquiladoras. Besides, they acknowledge that results obtained are not generalizable to free zones positioned in economies like China or India with different sets of regulations, institutions and firms' characteristics.
- b. Though free zones are a viable subsistence device for firms to protect their local market share in the face of import rivalry (Seyoum, 2017). However, future research is required to identify the factors—e.g., collaborative relationships, global supply chain capability etc.—that define export and import intensities in free zones of different countries.
- c. Interestingly, we equally do not know managers' decision-making styles in free zones situated in different countries.
- d. Moreover, there is also a need to explore, perhaps employing qualitative methods, why free zones located in developing countries produce more for exports while those located in developed countries produce more for the domestic market?

Inter-firm level: This review identifies two (02) avenues for future research at inter-firm literature level.

a- Quality management helps the export processing maquiladora industry to cope effectively with the challenges related to quality assurance, such as problems associated with resource utilization, the extent of operational regulation, product and process quality, final product costs and prevailing market costs (Vargas & Johnson, 1992). Besides, organizational structure, technology transfer and vertical integration mechanisms of firms located in different countries are important topics for future research.

b- From an operational perspective, two major issues—the design for manufacturability/assembly (DFM/DFMA) and exercise of concurrent engineering (CE)—are linked directly to the product design in the maquiladoras (Dowlatshahi, 2005). Previous research shows mixed results

concerning various dimensions of product design in the maquiladoras. In future research, the need is to examine the precise nature and the extent of product redesign at the operational level of different maquiladoras. For this purpose, an assessment of product design perspective of the success stories and failed firms like Eureka can be considered. Likewise, the effective role of highly adept in innovative technology workforce, co-locating product design in maquiladoras, geographic distance, cultural and communication dimensions vis-à-vis re-design angle can be investigated in future.

Intra-firm level:

At intra-firm level, we propose five (05) areas for future research.

- a. Extant research uncovering the antecedents of subsidiary initiatives taken by managers for industrial upgrading is virtually non-existent. Following Sargent and Mathews (2006), future research should examine the effect of type of industry, nationality of senior managers, national and organizational culture and locus of market opportunity etc. on corporate entrepreneurship and subsidiary initiatives.
- b. Employees' turnover vis-a-vis organizational attachment and work values in Mexican context has been examined (Pelled & Hill, 1997a). As acknowledged by authors, the weaknesses in research design and methodology can be reduced by employing a longitudinal research design in the future. Moreover, the effects of other work values like honesty and fairness etc. can also be investigated by Judge and Bretz (1992).
- c. Though Mexico is characterized by the culture of high-power distance, participative management is found to be positively related to effectiveness in Mexican Maquiladoras (Pelled & Hill, 1997b). These findings may not be held in other research sites and in industries that are more stable, less technologically sophisticated, experience less supply demand fluctuations and occupy a different niche (Stoddard, 1987).
- d. Maquiladora's generation (age) and direct compensation have significant effects on the turnover (Loess et al., 2008). Higher fixed pay leads to lower turnover as per efficiency wage theory. Furthermore, labor markets in Mexico show considerable variations at the level of unionization (Loess et al., 2008). A comparative study linking efficiency wage theory, convergence of human resource practices and level of unionization in different cultural settings (offshore operations) would further our understanding of the phenomenon.
- e. Extending the work by Daily et al. (2011), other significant variables like an employee's perception of managerial support, commitment, motivation and rewards etc. may also be examined vis-à-vis offshore operations management, particularly environmental management.
- f. This study encompasses the existing research on inter-firm collaborations and employee-level dynamics; nonetheless, both domains remain comparatively underexamined. Only two studies expressly investigate inter-firm connections, and less than ten analyse employee-firm dynamics, including employee empowerment, turnover, or workplace adaptability. Future research should examine the psychological and relational dimensions within and among enterprises in Free Zones to better understand the human factors influencing zone-based competitiveness.

Future Directions related to Environmental Implications of Free Zones

- a. The need is to complement the extant research by Shah and Rivera (2007), employing longitudinal data from multiple countries for generalization to investigate various variables affecting corporate environmental performance.
- b. Previously, the assessment of environmental performance in free zones recording perceptions of various external and internal stakeholders was subject to subjective biases. Therefore, more objective measures of corporate environmental performance may be introduced and used.
- c. To achieve environmental justice and shared environmental responsibility, improper environmental monitoring leading to non-compliant behavior of the firms (Kalumba et al., 2017) can be addressed by exploring strategies to make stakeholders green.
- d. Similarly, free zones' effect on the environment in terms of land cover change, land use, metal accumulation, climate change and sustainability need to be inquired as well.

Conclusion

Free zones are specialized manufacturing walled industrial estates for export purposes, offering the firms free trade and liberal regulatory environment. Despite their rising significance, no effort till date has been made by the scholars and practitioners to collect and stock literature on the free zone. Our work fills this important gap. For this purpose, we systematically reviewed over 182 articles from 153 different journals.

This review systematically categorizes the extant literature around four main themes—i.e., free zones—a policy instrument, context, management practices, and environmental implications of free zones. The first two decades of scholarly discourse has been dominated by the first theme—free zones as a policy instrument (over 30% of total articles) and context (50% of total articles). Meanwhile, the theme of management practices (35% of total articles) and environmental implications (6% of total articles) has received remarkably high scholarly attention in recent years.

Free zones are a quid pro quo between investing firms and host governments, since both receive considerable incentives out of this symbiotic dyad (for detail please see Rolfe et al., 2004). This review urges us to link the incentives to the business activities carrying the strongest potential for national wellbeing. In a situation, when governments are gradually turning selective in offering expensive incentive packages, research needs to be directed to examine what strategies firms shall pursue to win fiscal incentives? And which businesses/sectors shall bear the brunt? In the absence of fiscal incentives, what alternatives shall the governments employ? Which optimal mix of the various incentive factors shall generate more returns for governments and firms? These and many other areas need to be uncovered.

This review recommends transcending beyond the present horizon of knowledge to ascertain antecedents and outcomes of environmental performance of free zones as well. Since the contextual settings in which free zone firms operate are distinct and unique, results obtained outside free zones cannot be fully generalized to EPZ-firms. Free Zones firms, on the one hand, operate and compete under immense pressure to win fiscal incentives and meet requirements of standards and certification. On the other hand, these firms also carry logistical advantages,

expedited licensing or permits, simplified administrative procedures and fewer regulations, subsidies and better infrastructure compared to non-free zone firms. EPZ firms have foreign (exports) focus while non free zone-firms have domestic focus. Therefore, in view of clear differences between two research sites, this study finds an array of explanatory replication research avenues in the area of environmental performance of free zones.

Given that free zones are a survival tool for firms, having flexible operational arrangements. Free zones-firms might have advantages over non-free zone-firms in corporate entrepreneurship i.e., in developing new products, processes and services inside an existing business. A full spectrum of research investigating factors that facilitate or hinder corporate entrepreneurship awaits research endeavors.

Besides a full range of exploratory and explanatory research avenues listed in section 3, this review highlights various data gaps in terms of free zones as an industrial site. For example, water resource and energy surveys of free zones are virtually non-existent. Likewise, a database to measure the corporate environmental performance in free zone-firms objectively is not available. This review, therefore, urges the relevant government and private agencies to shift their focus of attention towards collection and compilation of these important databases.

Declarations

Availability of data and material

Data will be provided on request.

Competing interests

The authors declare solemnly that they have no conflict of interests.

Funding

The authors declare that for this research paper, they have received no funding at all.

Authors' contributions

The authors are responsible for conception of the research idea, data collection and analysis and discussing the findings for this manuscript.

Acknowledgements

Not applicable.

References

- Alansary, O. S., & Al-Ansari, T. (2023). Defining 'free zones': A systematic review of literature. *Heliyon*, 9(4), e15344. <https://doi.org/10.1016/j.heliyon.2023.e15344>
- Alcaraz, J. L., Maldonado, A. A., Iniesta, A. A., Robles, G. C., & Hernández, G. A. (2014). A systematic review/survey for JIT implementation: Mexican maquiladoras as case study. *Computers in Industry*, 65(4), 761-773. <https://doi.org/10.1016/j.compind.2014.02.013>
- Alder, S., Shao, L., & Zilibotti, F. (2016). Economic reforms and industrial policy in a panel of Chinese cities. *Journal of Economic Growth*, 21(4), 305-349. <https://doi.org/10.1007/s10887-016-9131-x>
- Aloise, P. G., & Macke, J. (2017). Eco-innovations in developing countries: The case of Manaus free trade zone (Brazil). *Journal of Cleaner Production*, 168, 30-38. <https://doi.org/10.1016/j.jclepro.2017.08.212>

- Ambroziak, A. A., & Hartwell, C. A. (2017). The impact of investments in special economic zones on regional development: The case of Poland. *Regional Studies*, 52(10), 1322-1331. <https://doi.org/10.1080/00343404.2017.1395005>
- Arnold, D. (2012). Spatial practices and border SEZs in Mekong Southeast Asia. *Geography Compass*, 6(12), 740-751. <https://doi.org/10.1111/gec3.12012>
- Attanapola, C. T. (2006). Were they ever 'in place'? Sense of place and self-identities among migrant female export-processing zone workers in Sri Lanka. *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 60(3), 217-226. <https://doi.org/10.1080/00291950600891778>
- Basu, B. (2017). Labor market effects of export processing zones in the presence of unemployment. *Economic Modelling*, 66, 19-29. <https://doi.org/10.1016/j.econmod.2017.05.008>
- Bedi, H. P. (2015). Judicial justice for special economic zone land resistance. *Journal of Contemporary Asia*, 45(4), 596-617. <https://doi.org/10.1080/00472336.2015.1048406>
- Blyde, J. S. (2014). The participation of Mexico in global supply chains: The challenge of adding Mexican value. *Applied Economics Letters*, 21(7), 501-504. <https://doi.org/10.1080/13504851.2013.870647>
- Bräutigam, D., & Tang, X. (2014). "Going global in groups": Structural transformation and China's special economic zones overseas. *World Development*, 63, 78-91. <https://doi.org/10.1016/j.worlddev.2013.10.010>
- Bräutigam, D., & Xiaoyang, T. (2011). African Shenzhen: China's special economic zones in Africa. *The Journal of Modern African Studies*, 49(1), 27-54. <https://doi.org/10.1017/s0022278x10000649>
- Cañas, J., Coronado, R., Gilmer, R. W., & Saucedo, E. (2013). The impact of the Maquiladora industry on U.S. Border cities. *Growth and Change*, 44(3), 415-442. <https://doi.org/10.1111/grow.12014>
- Cedillo Becerril, L. A., Harlow, S. D., Sánchez, R. A., & Monroy, D. S. (1997). Establishing priorities for occupational health research among women working in the Maquiladora industry. *International Journal of Occupational and Environmental Health*, 3(3), 221-230. <https://doi.org/10.1179/oeh.1997.3.3.221>
- Choudri, B. S., Baawain, M., Al-Zeidi, K., Al-Nofli, H., Al-Busaidi, R., & Al-Fazari, K. (2016). Citizen perception on environmental responsibility of the corporate sector in rural areas. *Environment, Development and Sustainability*, 19(6), 2565-2576. <https://doi.org/10.1007/s10668-016-9855-y>
- Cirera, X., & Lakshman, R. W. (2017). The impact of export processing zones on employment, wages and labour conditions in developing countries: Systematic review. <https://doi.org/10.1596/27677>
- Ciżkowicz, P., Ciżkowicz-Pękała, M., Pękała, P., & Rzońca, A. (2016). The effects of special economic zones on employment and investment: A spatial panel modeling perspective. *Journal of Economic Geography*, lbw028. <https://doi.org/10.1093/jeg/lbw028>
- Cling, J., Razafindrakoto, M., & Roubaud, F. (2005). Export processing zones in Madagascar: A success story under threat? *World Development*, 33(5), 785-803. <https://doi.org/10.1016/j.worlddev.2005.01.007>

- Cropanzano, R. (2009). Writing Nonempirical articles for Journal of management: General thoughts and suggestions. *Journal of Management*, 35(6), 1304-1311. <https://doi.org/10.1177/0149206309344118>
- Cropanzano, R. (2009). Writing Nonempirical articles for Journal of management: General thoughts and suggestions. *Journal of Management*, 35(6), 1304-1311. <https://doi.org/10.1177/0149206309344118>
- Daily, B. F., Bishop, J. W., & Massoud, J. A. (2012). The role of training and empowerment in environmental performance. *International Journal of Operations & Production Management*, 32(5), 631-647. <https://doi.org/10.1108/01443571211226524>
- Del Prado-Lu J. L. (2008). “Organizational Work Factors among Workers and Supervisors in Export Processing Zones Which Support Global Markets.” *Industrial Health*, 46 (5), 435–442
- Deng, P. (2011). The internationalization of Chinese firms: A critical review and future research*. *International Journal of Management Reviews*, 14(4), 408-427. <https://doi.org/10.1111/j.1468-2370.2011.00323.x>
- Din, M. (1994). Export processing zones and backward linkages. *Journal of Development Economics*, 43(2), 369-385. [https://doi.org/10.1016/0304-3878\(94\)90014-0](https://doi.org/10.1016/0304-3878(94)90014-0)
- Ding, D., Fields, D., & Akhtar, S. (1997). An empirical study of human resource management policies and practices in foreign-invested enterprises in China: The case of Shenzhen special economic zone. *The International Journal of Human Resource Management*, 8(5), 595-613. <https://doi.org/10.1080/095851997341405>
- Domínguez, E., Icaza, R., Quintero, C., López, S., & Stenman, Å. (2010). Women workers in the Maquiladoras and the debate on global labor standards. *Feminist Economics*, 16(4), 185-209. <https://doi.org/10.1080/13545701.2010.530603>
- Dowlatshahi *, S. (2005). An operational perspective of the relationships between the headquarters and the maquiladoras. *International Journal of Production Research*, 43(14), 2949-2975. <https://doi.org/10.1080/00207540500031881>
- Dowlatshahi, S. (2008). The role of industrial maintenance in the maquiladora industry: An empirical analysis. *International Journal of Production Economics*, 114(1), 298-307. <https://doi.org/10.1016/j.ijpe.2008.02.009>
- Dowlatshahi, S. (2011). An empirical study of the ISO 9000 certification in global supply chain of maquiladoras. *International Journal of Production Research*, 49(1), 215-234. <https://doi.org/10.1080/00207543.2010.508949>
- Dror, D. M. (1984). Aspects of labour law and relations in selected export processing zones. *International Labor Review*, 123 (6), 705-722.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532-550. <https://doi.org/10.5465/amr.1989.4308385>
- Elimam, A. A., & Girgis, M. A. (2012). Optimization of water resources planning for Jordan's Aqaba special economic zone. *Interfaces*, 42(6), 528-543. <https://doi.org/10.1287/inte.1110.0622>
- Eskenazi, B., Guendelman, S., & Elkin, E. P. (1993). A preliminary study of reproductive outcomes of female maquiladora workers in Tijuana, Mexico. *American Journal of Industrial Medicine*, 24(6), 667-676. <https://doi.org/10.1002/ajim.4700240603>

- Feltenstein, A., & Plassmann, F. (2008). The welfare analysis of a free trade zone: Intermediate goods and the Asian tigers. *The World Economy*, 31(7), 905-924. <https://doi.org/10.1111/j.1467-9701.2008.01108.x>
- Ferguson, W. (1989). How foreign trade zones can reduce costs. *Management Decision*, 27(5). <https://doi.org/10.1108/00251748910132557>
- Ferguson, W. (1989). How foreign trade zones can reduce costs. *Management Decision*, 27(5). <https://doi.org/10.1108/00251748910132557>
- Fernandes, A. P., & Tang, H. (2015). Scale, scope, and trade dynamics of export processing plants. *Economics Letters*, 133, 68-72. <https://doi.org/10.1016/j.econlet.2015.04.033>
- Flores, C. E., Phelan, P. E., Mou, J., & Bryan, H. (2004). Forecasting the electricity consumption of the Mexican border states maquiladoras. *International Journal of Energy Research*, 28(7), 641-660. <https://doi.org/10.1002/er.989>
- Fujii-Gambero, G., & Cervantes-Martínez, R. (2017). The weak linkages between processing exports and the internal economy. The Mexican case. *Economic Systems Research*, 29(4), 528-540. <https://doi.org/10.1080/09535314.2017.1351332>
- Fussell, E. (2000). Making labor flexible: The recomposition of Tijuana's Maquiladora female labor force. *Feminist Economics*, 6(3), 59-79. <https://doi.org/10.1080/135457000750020137>
- García, J., Rivera, L., Blanco, J., Jiménez, E., & Martínez, E. (2014). Structural equations modelling for relational analysis of JIT performance in maquiladora sector. *International Journal of Production Research*, 52(17), 4931-4949. <https://doi.org/10.1080/00207543.2014.885143>
- Giannantonio, C. M. (2008). Book review: Krippendorff, K. (2004). Content analysis: An introduction to its methodology (2nd ed.). Thousand Oaks, CA: Sage. *Organizational Research Methods*, 13(2), 392-394. <https://doi.org/10.1177/1094428108324513>
- Glick, P., & Roubaud, F. (2006). Export processing zone expansion in Madagascar: What are the labour market and gender impacts? *Journal of African Economies*, 15(4), 722-756. <https://doi.org/10.1093/jae/ejk016>
- Goodburn, C., & Knoerich, J. (2021). Importing export zones: Processes and impacts of replicating a Chinese model of urbanization in rural South India. *Urban Geography*, 43(10), 1496-1518. <https://doi.org/10.1080/02723638.2021.2014669>
- Guendelman, S., & Silberg, M. J. (1993). The health consequences of maquiladora work: Women on the US-Mexican border. *American Journal of Public Health*, 83(1), 37-44. <https://doi.org/10.2105/ajph.83.1.37>
- Guendelman, S., Samuels, S., & Ramirez, M. (1998). Women who quit maquiladora work on the U.S.-Mexico border: Assessing health, occupation, and social dimensions in two transnational electronics plants. *American Journal of Industrial Medicine*, 33(5), 501-509. [https://doi.org/10.1002/\(sici\)1097-0274\(199805\)33:53.0.co;2-1](https://doi.org/10.1002/(sici)1097-0274(199805)33:53.0.co;2-1)
- Hamada, K. (1974). An economic analysis of the duty-free zone. *Journal of International Economics*, 4(3), 225-241. [https://doi.org/10.1016/0022-1996\(74\)90044-0](https://doi.org/10.1016/0022-1996(74)90044-0)
- Hamilton, C., & E.O. Svensson, L. (1982). On the welfare effects of a 'duty-free zone'. *Journal of International Economics*, 13(1-2), 45-64. [https://doi.org/10.1016/0022-1996\(82\)90005-8](https://doi.org/10.1016/0022-1996(82)90005-8)

- Hancock, P. (2006). Women, work and empowerment: A portrait of women workers in two of Sri Lanka's export processing zones. *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 60(3), 227-239. <https://doi.org/10.1080/00291950600891836>
- Hartwell, C. A. (2017). Bringing the benefits of David to Goliath: Special economic zones and institutional improvement. *Regional Studies*, 52(10), 1309-1321. <https://doi.org/10.1080/00343404.2017.1346371>
- Haytko, D. L., Kent, J. L., & Hausman, A. (2007). Mexican maquiladoras: Helping or hurting the US/Mexico cross-border supply chain? *The International Journal of Logistics Management*, 18(3), 347-363. <https://doi.org/10.1108/09574090710835101>
- Haywood, R. (2000). Free zones in a modern world. Presentation of the World Economic Processing Zones Association, CFATF Meeting, Aruba, October 2000
- Hovell, M. F., Sipan, C., Hofstetter, C. R., DuBois, B. C., Krefft, A., Conway, J., Jasis, M., & Isaacs, H. L. (1988). Occupational health risks for Mexican women: The case of the Maquiladora along the Mexican-United states border. *International Journal of Health Services*, 18(4), 617-627. <https://doi.org/10.2190/1gbv-09qv-vbpps-ubt9>
- Hu, J. (2017). A retrospective view on the first three years of China (Shanghai) pilot free trade zone. *The Chinese Economy*, 50(4), 225-237. <https://doi.org/10.1080/10971475.2017.1321458>
- ILO (2003). Employment and social policy in respect of export processing zones (EPZs). International Labor Office, Governing Body, Committee on Employment and Social Policy. Geneva: ILO.
- ILO. 1998. Labour and Social Issues Relating to Export Processing Zones. Geneva: International Labor Organization (ILO).
- International Labor Organization (ILO). (2007). Export processing zones statistics, International Labor Organization, Geneva: ILO. Available at: <http://www.ilo.org/public/english/dialogue/sector/themes/epz/stats.htm>. Accessed on February 7, 2007.
- Ishii, M. (2016). Caring for divine infrastructures: Nature and spirits in a special economic zone in India. *Ethnos*, 82(4), 690-710. <https://doi.org/10.1080/00141844.2015.1107609>
- Jenkins, M. (2006). Sourcing patterns of firms in export processing zones (EPZs): An empirical analysis of firm-level determinants. *Journal of Business Research*, 59(3), 331-334. <https://doi.org/10.1016/j.jbusres.2005.09.005>
- Jenkins, M., & Arce, R. (2016). Do backward linkages in export processing zones increase dynamically? firm-level evidence from Costa Rica. *Journal of Business Research*, 69(2), 400-409. <https://doi.org/10.1016/j.jbusres.2015.06.045>
- Jensen, C. (2017). The employment impact of Poland's special economic zones policy. *Regional Studies*, 52(7), 877-889. <https://doi.org/10.1080/00343404.2017.1360477>
- Johansson, H., & Nilsson, L. (1997). Export processing zones as catalysts. *World Development*, 25(12), 2115-2128. [https://doi.org/10.1016/s0305-750x\(97\)00103-4](https://doi.org/10.1016/s0305-750x(97)00103-4)
- Johnson, G., Whittington, R., Scholes, K. (2011). Exploring strategy. Financial Times Prentice Hall.
- Jones, R. C. (2001). Maquiladoras and U.S.-bound migration in central Mexico. *Growth and Change*, 32(2), 193-216. <https://doi.org/10.1111/0017-4815.00156>
- Judge, T. A., & Bretz, R. D. (1992). Effects of work values on job choice decisions. *Journal of Applied Psychology*, 77(3), 261-271. <https://doi.org/10.1037//0021-9010.77.3.261>

- Jun, M., Cai, S., & Shin, H. (2005). TQM practice in maquiladora: Antecedents of employee satisfaction and loyalty. *Journal of Operations Management*, 24(6), 791-812. <https://doi.org/10.1016/j.jom.2005.09.006>
- Kalumba, A., Olwoch, J., Van Aardt, I., Botai, J. O., & DeW Rautenbach, C. (2016). Industrial development zone and South African environmental legal initiatives post-1994: A quest for sustainable industrial development. *Journal of Environmental Planning and Management*, 60(3), 462-481. <https://doi.org/10.1080/09640568.2016.1160828>
- Kim, S. K. (2017). The effects of applying alternative discounting methods on the economic feasibility test of Free Trade Zone development project: Based on the Korean preliminary feasibility study cases. *Journal of Korea Trade*, 21 (1), 69-82.
- Krippendorff, K. (2004). Content Analysis: An Introduction to Its Methodology (2nd ed.). Thousand Oaks, CA: Sage. *Organizational Research Methods*, 13(2), 392–394.
- Kyum Kim, S. (2017). The effects of applying alternative discounting methods on the economic feasibility test of free trade zone development project. *Journal of Korea Trade*, 21(1), 69-82. <https://doi.org/10.1108/jkt-12-2016-0043>
- Lai, Y., Hsu, M., Lin, F., Chen, Y., & Lin, Y. (2014). The effects of industry cluster knowledge management on innovation performance. *Journal of Business Research*, 67(5), 734-739. <https://doi.org/10.1016/j.jbusres.2013.11.036>
- Laplume, A. O., Sonpar, K., & Litz, R. A. (2008). Stakeholder theory: Reviewing a theory that moves us. *Journal of Management*, 34(6), 1152-1189. <https://doi.org/10.1177/0149206308324322>
- Le, T. M. (2022). Reserve army of Ho Chi Minh City: Migrant workers in the Ho Chi Minh city's industrial parks and processing export zones under the impacts of COVID-19 pandemic. *Social Identities*, 28(5), 595-607. <https://doi.org/10.1080/13504630.2022.2114893>
- LEVIEN, M. (2011). Special economic zones and accumulation by dispossession in India. *Journal of Agrarian Change*, 11(4), 454-483. <https://doi.org/10.1111/j.1471-0366.2011.00329.x>
- Levien, M. (2013). Regimes of dispossession: From steel towns to special economic zones. *Development and Change*, 44(2), 381-407. <https://doi.org/10.1111/dech.12012>
- Li, K., Whitwell, J., & Yao, S. (2005). A growth model for China's special economic zone. *Pacific Economic Review*, 10(4), 439-449. <https://doi.org/10.1111/j.1468-0106.2005.00284.x>
- Li, Z. (2013). Task offshoring and organizational form: Theory and evidence from China. *Journal of Economic Behavior & Organization*, 94, 358-380. <https://doi.org/10.1016/j.jebo.2012.11.008>
- Liberato, A. S., & Fennell, D. (2007). Gender and well-being in the Dominican Republic: The impact of free trade zone employment and female headship. *World Development*, 35(3), 394-409. <https://doi.org/10.1016/j.worlddev.2006.11.003>
- Lim, S. (2011). Risks in the North Korean special economic zone: Context, identification, and assessment. *Emerging Markets Finance and Trade*, 47(1), 50-66. <https://doi.org/10.2753/ree1540-496x470103>
- Liu, X., Heilig, G. K., Chen, J., & Heino, M. (2007). Interactions between economic growth and environmental quality in Shenzhen, China's first special economic zone. *Ecological Economics*, 62(3-4), 559-570. <https://doi.org/10.1016/j.ecolecon.2006.07.020>

- Liu, Y., & Jin, Y. (2022). Special economic zones, export status, and firms' productivity: Theory and evidence from China. *Review of Development Economics*, 26(3), 1338-1360. <https://doi.org/10.1111/rode.12883>
- LOESS, K., MILLER, V. V., & YOSKOWITZ, D. (2008). Offshore employment practices: An empirical analysis of routines, wages and labour turnover. *International Labour Review*, 147(2-3), 249-273. <https://doi.org/10.1111/j.1564-913x.2008.00033.x>
- Lonarkar, P. P. (2014). Export Performance Analysis of India's SEZ. *Journal of International Economics*, 5(1), 18.
- Lu, J. L. (2008). Occupational hazards and illnesses of Filipino women workers in export processing zones. *International Journal of Occupational Safety and Ergonomics*, 14(3), 333-342. <https://doi.org/10.1080/10803548.2008.11076771>
- LU, J. L. (2008). Organizational work factors among workers and supervisors in export processing zones which support global markets. *Industrial Health*, 46(5), 435-442. <https://doi.org/10.2486/indhealth.46.435>
- MacLachlan, I., & Aguilar, A. G. (1998). Maquiladora myths: Locational and structural change in Mexico's export manufacturing industry. *The Professional Geographer*, 50(3), 315-331. <https://doi.org/10.1111/0033-0124.00123>
- Melitz, M. J., & Trefler, D. (2012). Gains from trade when firms matter. *Journal of Economic Perspectives*, 26(2), 91-118. <https://doi.org/10.1257/jep.26.2.91>
- Miyagiwa, K. (1993). The locational choice for free-trade zones. *Journal of Development Economics*, 40(1), 187-203. [https://doi.org/10.1016/0304-3878\(93\)90110-9](https://doi.org/10.1016/0304-3878(93)90110-9)
- Moure-Eraso, R., Wilcox, M., Punnett, L., Copeland, L., & Levenstein, C. (1994). Back to the future: Sweatshop conditions on the Mexico-U.S. border. I. Community health impact of maquiladora industrial activity. *American Journal of Industrial Medicine*, 25(3), 311-324. <https://doi.org/10.1002/ajim.4700250302>
- Munguia, N., Vargas-Betancourt, N., Esquer, J., Giannetti, B. F., Liu, G., & Velazquez, L. E. (2018). Driving competitive advantage through energy efficiency in Mexican maquiladoras. *Journal of Cleaner Production*, 172, 3379-3386. <https://doi.org/10.1016/j.jclepro.2017.11.253>
- Nzuve, S. N., & Kiilu, L. M. (2013). Causes of industrial dispute: A case of the garment factories at the athi-river export processing zones in Kenya. *Problems of Management in the 21st Century*, 6(1), 48-59. <https://doi.org/10.33225/pmc/13.06.48>
- Ortega, A. A., Aciego, J. M., & Hermida, M. C. (2015). Mega-regions in the Philippines: Accounting for special economic zones and global-local dynamics. *Cities*, 48, 130-139. <https://doi.org/10.1016/j.cities.2015.07.002>
- Otwong, A., & Phenrat, T. (2017). Comparative analysis of public participation in the EIA process for Thai overseas investment projects: Krabi coal terminal, Hongsa coal power plant, and Dawei special economic zone. *Impact Assessment and Project Appraisal*, 35(4), 325-339. <https://doi.org/10.1080/14615517.2017.1354641>
- Pak, A., & Majd, F. (2011). Integrated coastal management plan in free trade zones, a case study. *Ocean & Coastal Management*, 54(2), 129-136. <https://doi.org/10.1016/j.ocecoaman.2010.10.033>
- Pelled, L. H., & Hill, K. D. (1997). Employee work values and organizational attachment in north Mexican maquiladoras. *The International Journal of Human Resource Management*, 8(4), 495-505. <https://doi.org/10.1080/095851997341577>

- Picarelli, N. (2016). Who really benefits from export processing zones? Evidence from nicaraguan municipalities. *Labour Economics*, 41, 318-332. <https://doi.org/10.1016/j.labeco.2016.05.016>
- Quaicoe, A., Aboagye, A. Q., & Bokpin, G. A. (2017). Assessing the impact of export processing zones on economic growth in Ghana. *Research in International Business and Finance*, 42, 1150-1163. <https://doi.org/10.1016/j.ribaf.2017.07.052>
- Quintero-Ramírez, C. (2002). The North American Free Trade Agreement and Women. *International Feminist Journal of Politics*, 4(2), 240-259. <https://doi.org/10.1080/14616740210135478>
- Rahman, M. S., Jolly, Y. N., Akter, S., Kamal, N. A., Rahman, R., Choudhury, T. R., & Begum, B. A. (2021). Sources of toxic elements in indoor dust sample at export processing zone (EPZ) area: Dhaka, Bangladesh; and their impact on human health. *Environmental Science and Pollution Research*, 28(29), 39540-39557. <https://doi.org/10.1007/s11356-021-13167-3>
- ROLFE, R. J., WOODWARD, D. P., & KAGIRA, B. (2004). Footloose and tax free: Incentive preferences in Kenyan export processing zones. *South African Journal of Economics*, 72(4), 784-807. <https://doi.org/10.1111/j.1813-6982.2004.tb00134.x>
- Romero, A. T. (1995). Labour standards and export processing zones: Situation and pressures for change. *Development Policy Review*, 13(3), 247-276. <https://doi.org/10.1111/j.1467-7679.1995.tb00093.x>
- Rondinelli, D. A. (1987). Export processing zones and economic development in Asia: A review and reassessment of a means of promoting growth and Jobs. *The American Journal of Economics and Sociology*, 46(1), 89-106. <https://doi.org/10.1111/j.1536-7150.1987.tb01766.x>
- Sannasee, R. V. (2007). Employment creation and skill diffusion by multinationals and foreign joint ventures in the Mauritian export processing zone. *Journal of the Textile Institute*, 98(2), 99-108. <https://doi.org/10.1533/joti.2005.0188>
- Sargent, J., & Matthews, L. (2006). The drivers of evolution/upgrading in Mexico's maquiladoras: How important is subsidiary initiative? *Journal of World Business*, 41(3), 233-246. <https://doi.org/10.1016/j.jwb.2006.06.001>
- Schrank, A. (2001). Export processing zones: Free market islands or bridges to structural transformation? *Development Policy Review*, 19(2), 223-242. <https://doi.org/10.1111/1467-7679.00132>
- Schweinberger, A. G. (2003). Special economic zones in developing and/or transition economies: A policy proposal. *Review of International Economics*, 11(4), 619-629. <https://doi.org/10.1111/1467-9396.00407>
- Seyoum, B. (2017). US foreign trade zones and import intensity examining determinants of import intensity in US foreign trade zones. *European Business Review*, 29(1), 103-122. <https://doi.org/10.1108/eb-06-2016-0072>
- Shah, K. U., & Rivera, J. E. (2007). Export processing zones and corporate environmental performance in emerging economies: The case of the oil, gas, and chemical sectors of Trinidad and Tobago. *Policy Sciences*, 40(4), 265-285. <https://doi.org/10.1007/s11077-007-9045-8>

- Shamsie, Y. (2009). Export processing zones: The purported glimmer in Haiti's development murk. *Review of International Political Economy*, 16(4), 649-672. <https://doi.org/10.1080/09692290802477670>
- Soni-Sinha, U. (2006). Where are the women? Gender, labor, and discourse in the noida export processing zone and Delhi. *Feminist Economics*, 12(3), 335-365. <https://doi.org/10.1080/13545700600670442>
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14(3), 207-222. <https://doi.org/10.1111/1467-8551.00375>
- UNCTAD (2020). Chapter IV Special Economic Zones. <https://www.unctad.org>
- UNCTAD (2022). Export Processing Zones Authority. <https://www.unctad.org>
- UNCTAD (2023). Technology and innovation Report 2023. <https://www.unctad.org>
- VARGAS, G. A., & JOHNSON, T. W. (1992). An assessment of quality management in the US/Mexico export processing industry. *International Journal of Production Research*, 30(8), 1845-1859. <https://doi.org/10.1080/00207549208948126>
- Waldkirch, A., Nunnenkamp, P., & Alatorre Bremont, J. E. (2009). Employment effects of FDI in Mexico's non-maquiladora manufacturing. *The Journal of Development Studies*, 45(7), 1165-1183. <https://doi.org/10.1080/00220380902952340>
- Wang, B. (2017). Employment in China (Shanghai) pilot free trade zone. *The Chinese Economy*, 50(4), 266-273. <https://doi.org/10.1080/10971475.2017.1321892>
- Waters, J. J. (2013). Achieving World Trade Organization compliance for export processing zones while maintaining economic competitiveness for developing countries. *Duke LJ*, 63, 481.
- Wong, K., & Chu, D. K. (1984). Export processing zones and special economic zones as generators of economic development: The Asian experience. *Geografiska Annaler: Series B, Human Geography*, 66(1), 1-16. <https://doi.org/10.1080/04353684.1984.11879496>
- World Bank, 1992. Adjustment Lending and Mobilization of Private and Public Resources for Growth. Country Economics Department, Policy and Research Series, vol. 22. World Bank, Washington, DC.
- Wu, W., Hong, C., & Muhammad, A. (2020). The Spillover effect of export processing zones. *China Economic Review*, 63, 101478. <https://doi.org/10.1016/j.chieco.2020.101478>
- Wu, W., & Hong, C. (2022). How processing trade assists local industrial upgrading: Input–output analysis of export processing zones in China. *Journal of Industrial and Business Economics*, 50(2), 369-397. <https://doi.org/10.1007/s40812-022-00246-w>
- Yang, W. (2017). Environmental protection review in the free trade zone. *The Chinese Economy*, 50(4), 291-296. <https://doi.org/10.1080/10971475.2017.1321896>
- Yao, D., & Whalley, J. (2015). The Yuan and Shanghai pilot free trade zone. *Journal of Economic Integration*, 30(4), 591-615. <https://doi.org/10.11130/jei.2015.30.4.591>
- Young, L. (1987). Intermediate goods and the formation of duty-free zones. *Journal of Development Economics*, 25(2), 369-384. [https://doi.org/10.1016/0304-3878\(87\)90091-5](https://doi.org/10.1016/0304-3878(87)90091-5)
- Young, L., & Miyagiwa, K. F. (1987). Unemployment and the formation of duty-free zones. *Journal of Development Economics*, 26(2), 397-405. [https://doi.org/10.1016/0304-3878\(87\)90038-1](https://doi.org/10.1016/0304-3878(87)90038-1)

- Young, L., & Miyagiwa, K. F. (1987). Unemployment and the formation of duty-free zones. *Journal of Development Economics*, 26(2), 397-405. [https://doi.org/10.1016/0304-3878\(87\)90038-1](https://doi.org/10.1016/0304-3878(87)90038-1)
- Yücer, A., & Siroën, J. (2016). Trade performance of export processing zones. *The World Economy*, 40(5), 1012-1038. <https://doi.org/10.1111/twec.12395>

