

Circular economy, cost leadership, focus and differentiation in exporting companies in emerging economies: A worker's perspective on competitiveness

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Abstract—The main objective of the research was to determine the relationship between the circular economy, cost leadership, strategic focus, and differentiation in exporting firms in an emerging economy. It is in line with Sustainable Development Goal (SDG) 12: Responsible consumption and production, promoting the efficient use of resources and the circular economy to reduce environmental impacts, improve efficiency, lower costs, and strengthen corporate social responsibility, thereby improving competitiveness.

The methodology was applied, with a quantitative approach, a non-experimental cross-sectional design, and a correlational scope. The final sample consisted of 75 employees from two companies located in Peru and Colombia. The results showed that there is a moderate positive relationship between the implementation of the circular economy, cost leadership, differentiation, and a focus on exporting companies in an emerging economy.

Key words: competitiveness, cost leadership, differentiation, focus, sustainability

I. INTRODUCTION

Since the 1970s, we have faced a global environmental crisis that has impacted various areas, yet the transition to a more sustainable way of life has been slow. Despite questions about the excessive exploitation of natural resources, a market-driven lifestyle persisted, intensifying pressure on resources and energy sources and pushing them to their limits [1]. This model, known as the linear economy, was influenced by consumerism, in which industries competed to increase sales volume through the excessive use of raw materials [2]; where greenhouse gas emissions reached 23% in 2015 [3].

Against this backdrop, the circular economy (CE) emerged as an alternative, promoting a business model focused on reducing, reusing, and recycling raw materials in order to foster a green and sustainable economy [4].

Internationally, this model gained relevance in Latin America and the Caribbean, where public policies were key factors in promoting circular practices, such as product design, supply chains, and the production stage in industries, seeking to reduce global emissions from production processes by up to 40% by 2050 [3].

On the other hand, in Peru, activities such as mining, fishing, industry, and agribusiness, the latter accounting for approximately 33% of deforested hectares, had a high environmental impact [5]; this led the Peruvian government to implement business policies geared toward an eco-efficient economy as part of a strategic plan from 2019 to 2030, which promoted responsible production and consumption, facilitating progress toward an optimal circular economy model that boosts national competitiveness [6].

In Colombia, the activities of coal mining companies have various environmental impacts. These include air and water pollution, deforestation, and increased greenhouse gas emissions. These issues directly affect the development of the circular economy. They hinder the sustainable use of resources and promote a linear economic model based on extraction and waste. Although coal mining contributes to economic growth, it also exacerbates environmental problems. This compels companies and the government to implement more sustainable and circular strategies. It is necessary to reduce waste, reuse materials, and mitigate ecological damage. [7]

Despite this, the hydrobiological sector is currently exposed to a collision of competitive challenges, due to its focus on mostly linear production models, where limited technological innovation and poor adoption of sustainable practices come into play, minimizing its ability to differentiate itself in demanding foreign markets. According to a study identified by the Arequipa Chamber of Commerce (2024) [8], the Peruvian hydrobiological sector experienced 329.2% growth in 2024, representing around 0.8% of the national GDP.

It is well known that the export of hydrobiological products in Peru and coal in Colombia is one of the most important economic activities in both countries, as it accounts for a large share of their exports due to their strategic locations. According to the Ministry of Production [9], exports face a number of challenges, including overfishing, a lack of adequate infrastructure, the informal economy, and limited technological innovation, all of which hinder their competitiveness in foreign markets with high sustainability standards.

In view of this, the main problem posed was: What is the relationship between the circular economy, cost leadership, focus, and differentiation in exporting firms in an emerging economy?

Accordingly, the main objective was to determine the relationship between the circular economy, cost leadership, focus, and differentiation in exporting firms in an emerging economy. The specific objectives were 1) to establish the relationship between the circular economy and cost leadership in exporting firms in an emerging economy, 2) to determine the relationship between the circular economy and differentiation in exporting firms in an emerging economy, and 3) to identify the relationship between the circular economy and the focus in exporting firms in an emerging economy.

From this point on, the research was theoretically justified by several theories. For variable 1, Ellen MacArthur's Circular Economy theory [10] was used, and for variable 2, 3 and 4, Michael Porter's Generic Strategies theory [1] was used.

Thus, in terms of methodology, a survey was used as a technique and a questionnaire as an instrument; these resources are useful not only for this research but also as a guide for other researchers on similar issues. In practical terms, relevant information was provided on the circular economy and competitiveness, with strategies aimed at promoting sustainability as an added value to stand out from the competition.

II. THEORETICAL FRAMEWORK

The theoretical basis for the research is presented below: the circular economy theory of the Ellen MacArthur Foundation [12], the authoritative organization on the circular economy worldwide, which is based on three fundamental principles: i) Preserve and enhance natural capital, which refers to promoting the sensible use of resources, prioritizing the most efficient or renewable ones, thus allowing natural capital to regenerate. ii) Optimizing resource performance, which involves keeping products, components, and materials in circulation for as long as possible, designing them to be renewed and/or recycled. iii) Promoting system effectiveness, which aims to eliminate from the design any negative external factors that may affect other sectors and/or environmental factors [10].

Likewise, in 1990, Porter himself put forward the theory of generic strategies, which has three effective strategies: i) Cost leadership, based on providing products at lower costs than competitors, which may require a reduction in production

costs, achieving greater efficiency in operations. ii) Differentiation, aimed at capturing a specific market segment by offering a product with unique characteristics that distinguish it from others and are innovative. iii) Focus, based on providing adequate and exclusive attention to a specific market segment, rationally adapting the offer to its demands [11].

III. METHODOLOGY

A. Type and design of the research

The research was conducted using an applied approach, as it sought primarily to offer practical solutions to current problems, emphasizing the application of scientific knowledge with the aim of generating findings and alternative solutions in line with the study objective [13].

According to the approach developed, it is characterized as quantitative. According to Yucra and Bernedo [14], they define it as an analytical process, that is, one that starts from the general and moves to the specific.

Likewise, the study design was non-experimental and cross-sectional, as it was conducted over a specific period of time. It took a correlational approach, with the aim of establishing the actual relationship between the circular economy, low costs, differentiation, and the business strategies of companies exporting hydrobiological products and coal in Peru and Colombia.

Coronel [15] mentioned that this perspective transcends a simple description, as it focuses on identifying and analyzing the degree of association between two or more variables within a specific phenomenon in reality.

B. Variables and operationalization

Regarding variable 1: circular economy, Cabrera [16] defined it as a model that involves a comprehensive perspective on economic activities in the context of a sustainable environment. It involves a wide range of fields in which production processes, consumption patterns, the type and use of raw materials, energy generation, the supply chain, and the treatment of solid waste, among other things, are modified.

Likewise, this variable has three fundamental principles that were adapted as dimensions: i) Preserve and enhance natural capital, with a focus on recording water circularity, renewable energy use, and material circularity. ii) Optimizing resource performance, where the type of recovery, useful life, productivity of circular material, on-site water circulation, and percentage of critical material were measured. iii) Promoting system effectiveness, where the measurement will be of the impact of greenhouse gases (GHG), the impact on nature, and science, technology, and information (STI) income.

Additionally, variables 2, 3, and 4 are components of competitiveness, which was conceptualized at the national level as the ability to sell in foreign markets while maintaining domestic income. From a business perspective, it refers to the supply of products or services that offer advantages in terms of

price, quality, and the opportunity to excel in profitability and efficiency on a global scale [17].

Three comparative strategies were considered as variables: i) Cost leadership, where cost reduction, process efficiency, and waste disposal were recorded. ii) Differentiation, which was measured by the degree of innovation, added value, and quality. iii) Focus, where the measurement was segmentation, loyalty, and personalization.

C. Population, sample, and sampling

To continue, the population is the total group of individuals with similar properties, which can be as extensive as the inhabitants of a country or as specific as the employees of an organization [18]. Therefore, after applying the inclusion and exclusion criteria described above, the final population consisted of 75 employees—50 from a hydrobiological products export company in Peru and 25 from a coal export company in Colombia—who participated in the questionnaire for this study.

According to the sampling, it is the set of techniques and processes for selecting a small set of a population that allows finding a reference point of knowledge in the research process [19]. For this study, census sampling was used.

D. Data collection, techniques and instruments

For the study, a survey was conducted due to the quantitative analysis applied during the research process. Similarly, a questionnaire was used as a data collection instrument, with the aim of targeting a specific group. Its use emphasized the search based on the researcher's objectives to obtain accurate information according to the company being prioritized [20].

Likewise, in order to support its reliability, pilot tests were applied to 20 valid cases without any type of exclusion, which allowed for the validation of internal consistency using Cronbach's alpha, with a result result of 0.811 for V1 (circular economy), 0.812 for V2 (cost leadership), 0.757 for V3 (differentiation), and 0.831 for V4 (focus), both above 0.7, which demonstrated its reliability.

IV. RESULTS

An inferential analysis of the results was performed to identify the correlations and significance of both the specific objectives and the general objective. We began with the first specific objective, which was to establish the relationship between the circular economy and cost leadership. The alternative hypothesis was: There is a significant relationship between the circular economy and cost leadership in exporting firms in an emerging economy, and the null hypothesis was: There is no significant relationship between the circular economy and cost leadership in exporting firms in an emerging economy.

TABLE 1
RELATIONSHIP BETWEEN CIRCULAR ECONOMY AND
COST LEADERSHIP

			Circular economy	Cost Leadership
Spearman's Rho	Circular economy	Correlation coefficient	1.000	0.742
		Sig. (bilateral)		<00.1
		N	75	75
	Cost Leadership	Correlation coefficient	0.742	
		Sig. (bilateral)	<00.1	
		N	75	75

Note: The correlation is positive at the 0.01 level (two-tailed).

The table showed Spearman's correlation between the first and the second variable, where the coefficient was 0.742, indicating the existence of a moderate positive relationship for both circular economy and cost leadership. This suggested that as the adoption of circular practices in the company increases, they also contribute to improving cost leadership. Likewise, the bilateral significance value is less than 0.001, which is below the commonly accepted level of ($p < 0.01$). This confirmed that the identified relationship is statistically significant; in other words, it is not a product of chance. The alternative hypothesis was accepted and the null hypothesis was rejected.

This suggests that as the adoption of circular practices increases among exporting firms, these practices also contribute to improving cost leadership, indicating that actions such as streamlining inputs, reducing and efficiently using goods contribute effectively to increasing operating expenses and improving the cost structure.

To continue with specific objective number two, the alternative hypothesis was: There is a significant relationship between the circular economy and differentiation in exporting firms in an emerging economy, and the null hypothesis was: There is no significant relationship between the circular economy and differentiation in exporting firms in an emerging economy.

TABLE 2
RELATIONSHIP BETWEEN CIRCULAR ECONOMY AND
DIFFERENTIATION

			Circular economy	Differentiation
Spearman's Rho	Circular economy	Correlation coefficient	1.000	.689
		Sig. (bilateral)		<.007
		N	75	75
	Differentiation	Correlation coefficient	.689	1.000
		Sig. (bilateral)	<.007	
		N	75	75

Note: The correlation is positive at the 0.01 level (two-tailed).

The table presented the correlation analysis between the first and third variables, resulting in a Spearman's coefficient of 0.689, which showed a low positive relationship. This indicated that, as circular economy practices are implemented in the entity, areas for improvement were observed in order to achieve the ability to differentiate from the competition, in actions such as process innovation and the effective use of resources, which help to create distinctive attributes that strengthen the organization's competitive positioning vis-à-vis its competitors.

Similarly, the reported bilateral significance value was less than 0.007, falling below the accepted threshold ($p < 0.01$). As a result, it is evident that the relationship established is statistically valid, rather than being the product of chance; therefore, it can be stated that differentiation and the circular economy are positively correlated. The alternative hypothesis was accepted and the null hypothesis was rejected.

Regarding the third and final specific objective, which was to identify the relationship between the circular economy and the focus, the alternative hypothesis was: There is a significant relationship between the circular economy and the focus on exporting firms in an emerging economy, and the null hypothesis was: There is no significant relationship between the circular economy and the focus on exporting firms in an emerging economy.

TABLE 3
RELATIONSHIP BETWEEN CIRCULAR ECONOMY AND
THE FOCUS

			Circular economy	Focus
Spearman's Rho	Circular economy	Correlation coefficient	1.000	.815
		Sig. (bilateral)		<.001
		N	75	75
	Focus	Correlation coefficient	.815	1.000
		Sig. (bilateral)	<.001	
		N	75	75

Note: The correlation is positive at the 0.01 level (two-tailed).

The table showed the correlation between the first and fourth variables, which resulted in a Spearman coefficient value of 0.760, reflecting a high positive relationship. This indicated that the greater the management of circular economy practices within the organizations, the stronger the approach, contributing to the development of a more solid strategic vision focused on specific market segments. In addition, the value, which was much lower than the significance level ($p < 0.01$), confirmed that the identified relationship is statistically significant. The alternative hypothesis was accepted and the null hypothesis was rejected.

Finally, with regard to the main objective, the following research hypotheses were considered: H1: There is a significant relationship between the circular economy, cost leadership, strategic focus, and differentiation in exporting firms in an emerging economy; and H0: There is no significant relationship between the circular economy, cost leadership, strategic focus, and differentiation in exporting firms in an emerging economy.

Since positive significance values and Spearman's Rho coefficients were obtained across all dimensions, the research hypothesis (H1) is accepted and the null hypothesis (H0) is rejected. These results provide compelling empirical evidence to affirm that the circular economy is a cross-cutting axis that

consolidates a sustainable and difficult-to-imitate competitive advantage, fulfilling the fundamental purpose of this study.

The results confirmed a positive and statistically significant correlation between the adoption of circular economy practices and the three dimensions of competitive advantage analyzed: cost leadership, differentiation, and focus. The findings suggested that, in the context of exporting firms in emerging economies, the transition to circular production models is not a secondary financial commitment, but rather a critical determinant of operational efficiency and international strategic positioning.

V. DISCUSSION

In line with the main objective of the research, positive Spearman's coefficients were obtained, indicating a statistically significant positive relationship of moderate-to-high strength between the study variables. This indicator shows that improving the incorporation of circular strategies, such as the reincorporation of resources and innovation in productive activities, substantially boosts business competitiveness.

This finding is reinforced by studies conducted by Corcoles and Triguero [21] and Enciso and Garcia [22], who determined that adopting circular practices in production systems not only maximizes the use of raw materials, but also strengthens the competitive position of entities vis-à-vis other increasingly self-sufficient markets. Likewise, Garcia and Vargas [23] recognized that there is a moderate positive correlation between the two variables used for exports, enhancing their role as a key pillar for encouraging performance in international markets.

On the other hand, Zuñiga et al. [24] highlighted their direct influence on business competitiveness, demonstrating that this factor is decisive and necessary for both the stability and development of business entities. Agazu and Kero [25] in their competitive analysis advocate the integration or flexible redesign of all sustainable processes, in contrast to those practices that make use of a traditional model limited to optimization.

Similarly, Ugarte [26] examined in detail that productive societies that involve control and monitoring devices, as well as integrating organizational evolution strategies, allow for the achievement of higher levels of both productivity and differentiation. In relation to this, Chikan et al. [27] noted that competitive performance is reflected in cost minimization, coupled with the ability to supply products or services with a differential strategic value.

Sarmiento et al. [10] demonstrate this empirical relationship by linking it directly to the theory proposed by the Ellen MacArthur Foundation [12], confirming that the integration of sustainable practices, rather than influencing the reduction of environmental impacts, contributes directly to increased competitiveness related to foreign market demands.

In line with the first specific objective, a moderate positive correlation ($\rho = 0.742$, $p < 0.01$) is detailed, which allows us to accept the alternative hypothesis, confirming that

the circular economy contributes directly to efficiency in cost leadership management.

These results are consistent with the contributions of Castro et al. [28], who found that the circular economy acts as an efficient method for increasing operating costs by promoting the use of reused materials and reducing dependence on basic materials. Likewise, Ortiz-Palomino and Fernandez [29] further explored how this innovative model achieves economic sustainability advantages by reducing production costs, taking into account the optimization of recycled resources and strengthening the profitability structure of companies.

Regarding the second specific objective, a Spearman coefficient (Rho) of 0.689 and a bilateral significance of less than 0.01 are statistically evident, indicating a low positive association. These findings reveal that as companies strengthen their circular economy practices, they improve their ability to differentiate themselves from the competition. However, there are still areas for improvement related to the implementation of green technologies and digitalization that can be strengthened in the future.

This coincides with the proposals of Serrano et al. [30], Despoudi et al. [31], and De Angelis [32], who highlight that incorporating the circular economy into organizations allows for the generation of sustainable competitive advantages through innovation and differentiation.

This is also consistent with the contributions of Lakshmi et al. [33] and Diaz and Menoscal [34], who show that companies that adopt resource reduction and optimization strategies are better positioned in global competitive contexts by highlighting their environmental commitment to the SDGs.

Likewise, according to Cajahuanca et al. [35] and Quijada [36], business competitiveness is strengthened through comprehensive actions that allow companies to adapt to international transformations in increasingly demanding markets.

Finally, specific objective number three has a Spearman coefficient (Rho) of 0.815 with a bilateral significance of 0.001, which shows a strong positive relationship between the circular economy and the approach, indicating that as the company strengthens the implementation of sustainable practices, it also consolidates its strategic and organizational approach, directing its resources and processes towards sustainability with innovation and competitive adaptation in international markets.

These results are similar to those reported by Garcia and Ramirez [37] and Massapina et al. [38], who highlight that export competitiveness is driven by strategies based on the segmentation of international markets, quality and sustainability certifications as the main focus of the organizational approach; where the circular economy provides strategic value by guiding companies toward comprehensive management of their resources, combining both environmental and international projection.

It is also related to the findings of Pham [39], Mamani [40], and Ahmadov et al. [41], who assert that competitiveness

is strengthened when organizations develop an approach based on learning and adaptation in the face of changes in the global environment. Similarly, Rehman et al. [42], Bravo and Paucar [43], and Marcos et al. [44] show that strategic planning, positioning, and constant progress in processes are essential to maintaining competitiveness.

For their part, Herencia and Magallanes [45] highlight that the hydrobiological products export sector manages to maintain its competitiveness due to the implementation of improvement processes and market diversification, which allows it to adapt to the demands of each specific customer group.

Finally, the results obtained show a direct link to Michael Porter's Generic Strategies theory [11], which allows for a comprehensive analysis of how the company under investigation achieves a sustainable competitive advantage by directing its resources towards each of the strategies (cost leadership, differentiation, and focus), validating Porter's model in the hydrobiological export sector.

VI. CONCLUSIONS

It was concluded that there is a positive and significant correlation between the implementation of circular practices, cost leadership, differentiation, and market focus among exporting firms in an emerging economy, which supports the alternative hypothesis and rejects the null hypothesis. These results indicated that the adoption of eco-friendly practices, evidenced by waste minimization and resource optimization, directly contributed to strengthening the companies' competitive performance.

Similarly, for the first specific objective, the statistical evaluation yielded a value of $\rho = 0.742$ ($p < 0.01$), demonstrating a moderate positive relationship between the circular economy and cost leadership. This indicated that implementing sustainable actions not only improves cost management and control, but stimulates process innovation, encouraging a more conscious use of resources and allowing the company to be more adaptable to market fluctuations.

With regard to the second specific objective, the inferential analysis showed a Spearman coefficient of $\rho = 0.689$ ($p < 0.01$), which concluded a low positive relationship between circular economy and differentiation, accepting the alternative hypothesis and rejecting the null hypothesis. This showed that although circular practices have an effective impact on business differentiation, there are still areas for improvement within the companies to strengthen this relationship, such as process innovation and the effective use of resources.

Finally, with the third specific objective, the research found a strong positive relationship between circular economy and focus, with a Spearman coefficient of $\rho = 0.815$ ($p < 0.01$), accepting the alternative hypothesis. This concluded that sustainability activities are directly linked to the strategic focus of companies, consolidating their ability to adapt to the challenges of international trade.

VI. RECOMMENDATIONS

It is pertinent in future studies focused on the circular economy and competitiveness to carry out continuous monitoring to demonstrate how the strengthening of circular mechanisms influences operational performance levels and competitive positioning. This perspective adopted by Coronel [15] helps to unify opportunities for continuous improvement that contribute to adapting these business strategies to changes in market needs, ensuring more sustainable management.

Likewise, it is suggested that companies exporting hydrobiological products incorporate technological tools that allow real-time monitoring of circularity indicators. According to Schröder et al. [3], the use of sustainable digital systems enhances internal coordination, which is reflected in greater production visibility and a reduction in potential process interruptions.

Based on the results that show a positive but low relationship between the circular economy and differentiation, it is suggested that innovation in sustainable products be strengthened by developing new product lines with more ecological traceability and international certifications. This strategy allows the company to stand out in international markets where sustainability is a purchasing value. Ju et al., [46].

It is recommended to strengthen the strategic approach by adopting digital tools, training staff, and developing traceability systems that ensure transparency in the value chain, with the aim of entering and remaining in new markets. Geissdoerfer et al., [47].

ACKNOWLEDGMENT

A la Dirección de Investigación de la Universidad Peruana de Ciencias Aplicadas por el apoyo brindado para la realización de este trabajo de investigación a través del incentivo UPC-EXPOST-2026-1.

Funding: Universidad Peruana de Ciencias Aplicadas / UPC-EXPOST-2026-1.

REFERENCES

- [1] Dai, S., Duan, X., & Zhang, W. (2020). Knowledge map of environmental crisis management based on keywords network and co-word analysis, 2005–2018. *Journal of Cleaner Production*, 262(121168). <https://doi.org/10.1016/j.jclepro.2020.121168>
- [2] Geistdörfer, M., Savaget, P., Bocken, N., & Hultink, E. (2017). The Circular Economy - A new sustainability paradigm? *Journal of Cleaner Production*, 143(1), 757-768. <https://doi.org/10.1016/j.jclepro.2016.12.048>
- [3] Schröder, P., Albaladejo, M., Alonso, P., MacEwen, M. y Tilkkanen, J. (2020). La economía circular en América Latina y el Caribe: Oportunidades para fomentar la resiliencia. Programa de Energía, Medio Ambiente y Recursos. https://www.catedrasostenibilidadaege.org.do/Portals/0/OpenContent/Files/46/La_economia_circular_en_America_Latina_y_el_Caribe_compressed-2.pdf
- [4] Carrillo, G., & Torres, L. (2020). *Biorrefinerías y Economía Circular* (Primera Edición ed.). México: Universidad Autónoma Metropolitana UAM Xochimilco. <http://up-rid2.up.ac.pa:8080/xmlui/handle/123456789/1643>

- [5] Hernández, J. y Yagui, V. (2021). Análisis de información y factores de desempeño ambiental y de economía circular en empresas peruanas. *Comuni@cción*, 12(1), 37-52. http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S2219-71682021000100037
- [6] Radio Nacional. (2020). Gobierno aprueba "Hoja de Ruta hacia una Economía Circular en Sector Industria". <https://www.radionacional.gob.pe/noticias/politica/gobierno-aprueba-hoja-de-ruta-hacia-una-economia-circular-en-sector-industria>
- [7] Ayala Hernández, R. M., & Díaz Lizcano, L. M. (2022). Impacto socioeconómico y ambiental de la explotación carbonífera de la empresa Drummond en el departamento del Cesar entre los años 2004 y 2019. *Universidad Industrial de Santander*. <https://noesis.uis.edu.co/items/3bac9131-94d3-414a-965b-fb9bb75e6742>
- [8] Cámara de Comercio e Industria de Arequipa. (2024). Pesca peruana registra mejor desempeño en América del Sur gracias a su sostenibilidad. <https://www.camara-arequipa.org.pe/erpeccia/boletin/noticia/12807>
- [9] Ministerio de la Producción. (2023). Anuario estadístico pesquero y acuícola 2023. PRODUCE. https://www.producempresarial.pe/wp-content/uploads/2024/09/Anuario_Estadistico-de-Pesca-y-Acuicultura_2023_09.09.2023-1-I.pdf
- [10] Sarmiento, S., Carro, J., y Nava, D. (2022). La transición a una economía circular como una ventaja competitiva en la Pyme de la manufactura textil en Tlaxcala, México. *Acta universitaria*, (32), 1-21. <https://doi.org/10.15174/au.2022.3492>
- [11] Mashingaidze, M., Phiri, M., Nyatsambo, M., Bomani, M. & Chokera, F. (2024). Porter 's Strategies and Firm Competitiveness: The Mediating Role of Market and Technological Innovation. *African Journal of Hospitality, Tourism and Leisure*, 13(2):401-409. <https://doi.org/10.46222/ajhtl.19770720.522>
- [12] Ellen MacArthur Foundation. (2015). Towards a circular economy: Business rationale for an accelerated transition. <https://www.ellenmacarthurfoundation.org/towards-a-circular-economy-business-rationale-for-an-accelerated-transition>
- [13] Medina, M., Rojas, R., Bustamante, W., Loaiza, R., Martel, C., y Castillo, R. (2023). Metodología de la investigación: Técnicas e instrumentos de investigación. Instituto Universitario de Innovación Ciencia y Tecnología InuDi Perú. <https://doi.org/10.35622/inudi.b.080>
- [14] Yucra, T. y Bemedo, L. (2020). Epistemología e Investigación Cuantitativa. *IGOBERNANZA*, 3(12), 107-120. <https://doi.org/10.47865/igob.vol3.2020.88>
- [15] Coronel, C. (2023). Los objetivos de la investigación. *Revista Archivo Médico de Camagüey*, 27. http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1025-02552023000100048&lng=es&tlng=pt
- [16] Cabrera, F. (2021). Economía circular: Concepto, implicancias, indicadores y sistemas de monitoreo. Biblioteca del Consejo Nacional de Chile. https://obtienearchivo.bcn.cl/obtienearchivo?id=repositorio/10221/32826/1/Info_rme_BCN_Economia_Circular_concepto_FINAL.pdf
- [17] Romero-Suárez, D., Pertuz, V. & Orozco-Acosta, E. (2020). Determining factors of competitiveness and organizational integration: scoping review. *Información tecnológica*, 31(5), 21-32. <https://dx.doi.org/10.4067/S0718-07642020000500021>
- [18] Alcántara, M. y Ramírez, M. (2023). Análisis crítico del uso de rúbricas en metodología de la investigación. *Human Review*, (12), 46-77. <https://doi.org/10.37467/revhuman.v12.4677>
- [19] Villeda, J. (2024). Muestreo en la Investigación Científica. Universidad Nacional Autónoma de Honduras. https://www.researchgate.net/publication/380000028_Muestreo_en_la_Investigacion_Cientifica
- [20] García, J y Sánchez, P. (2020). Diseño teórico de la investigación: instrucciones metodológicas para el desarrollo de propuestas y proyectos de investigación científica. *Información tecnológica*, 31(6), 159-170. <https://dx.doi.org/10.4067/S0718-07642020000600159>
- [21] Córcoles, D., & Triguero, Á. (2025). The influence of eco-innovation on high-performing firms: The dynamics of productivity in the context of a circular economy. *European Research On Management And Business Economics*, 31(2), 100275. <https://doi.org/10.1016/j.iiedeen.2025.100275>
- [22] Enciso, S., & García, I. (2024). Are innovative firms more circular when women hold upper positions? *Journal Of Innovation & Knowledge*, 9(4), 100556. <https://doi.org/10.1016/j.jik.2024.100556>
- [23] García, K. y Vargas, L. (2023). La economía circular y su relación con la competitividad en las exportaciones de las empresas mineras peruanas de cobre SPN 2603.00.00.00 a china en el período 2016-2021. [Tesis de licenciatura, Universidad Peruana de Ciencias Aplicadas]. Archivo digital. https://repositorioacademico.upc.edu.pe/bitstream/handle/10757/668031/Garci_a_RK.pdf?sequence=4&isAllowed=y
- [24] Zúñiga, X., Tapia, D., Espinoza, R., Romero, E. & Carrasquero, E. (2025). Meta-Analytical Analysis of Competitiveness in Small- and Medium-Sized Manufacturing Enterprises: The Role of Technology and Quality. *Applied Sciences*, 15 (8), 4124. <https://doi.org/10.3390/app15084124>
- [25] Agazu, BG, Kero, CA. Innovation strategy and firm competitiveness: a systematic literature review. *J Innov Entrep* 13, 24 (2024). <https://doi.org/10.1186/s13731-024-00381-9>
- [26] Ugarte, J. (2022). La influencia de la gestión empresarial en la competitividad de la empresa exportadora de productos hidrobiológicos Franfood S.R.L., Tacna 2021. [Tesis de licenciatura, Universidad Privada de Tacna]. Archivo digital. <http://161.132.207.135/handle/20.500.12969/2256>
- [27] Chikán, A., Czako, E., Kiss-Dobronyi, B. & Losonci, D. (2022). Firm competitiveness: A general model and a manufacturing application. *International Journal of Production Economics*. Volume 243 (2022), 0925-5273. <https://doi.org/10.1016/j.ijpe.2021.108316>
- [28] Castro, P., García, J., Cevallos, P., Mera, J. y Murillo de la Cruz, E. (2024). Economía circular como estrategia para la competitividad empresarial. *Ciencia y Desarrollo*, 27(4). <https://doi.org/10.21503/cyd.v27i4.2762>
- [29] Ortiz-Palomino, M. y Fernández, V. (2021). Economía circular en Sudamérica. Una revisión sistemática de evidencias en Scielo y Redalyc, 2018-2020. *Espíritu Emprendedor TES* 2021, 5(3), 13-28. <https://doi.org/10.33970/eetes.v5.n3.2021.269>
- [30] Serrano, A., Cuellar, B., & Fuertes, Y. (2024). Financial performance of new circular economy companies in rural settings. *Small Business Economics*. <https://doi.org/10.1007/s11187-024-00971-7>
- [31] Despoudi, S., Sivarajah, U., Spanaki, K., Charles, V. & Durai, V. (2023). Industry 4.0 and circular economy for emerging markets: evidence from small and medium-sized enterprises (SMEs) in the Indian food sector. *Annals of Operations Research* (2023). <https://doi.org/10.1007/s10479-023-05404-4>
- [32] De Angelis, R (2021). Circular Economy Business Models: a Repertoire of Theoretical Relationships and a Research Agenda. *Circular Economy and Sustainability*. 2, 433-446 (2022). <https://doi.org/10.1007/s43615-021-00133-x>
- [33] Lakshmi, K., Geetanjali, S., Swapna, H., Nikhil, M., Raji, R., Digvijay, P. & Binay, K. (2024). Circular Economy: A Catalyst for Economic Growth - An Empirical Study. *Circular Economy and Sustainability*. 5, 729-750 (2025). <https://doi.org/10.1007/s43615-024-00434-x>
- [34] Diaz, N. y Menoscal, R. (2020). Economía circular: desafíos para una visión estratégica de las empresas exportadoras. *Revista Compendium: Cuadernos de Economía y Administración*, 7(3). <https://doi.org/10.46677/compendium.v7i3.865>
- [35] Cajahuanca, F., Rojas, E. y Tito, K. (2024). La gestión logística internacional y su relación con la competitividad en la empresa exportadora de truchas Piscifactoría de los Andes S. A., Huancayo, Junín, 2023. [Tesis de licenciatura, Universidad Continental]. Archivo digital. <https://hdl.handle.net/20.500.12394/15931>
- [36] Quijada, C. (2020). Business intelligence: un factor crítico para la competitividad de las empresas. *Realidad Empresarial*, (9), 45-48. <https://doi.org/10.5377/reuca.v0i9.10068>
- [37] García, M. y Ramirez, Z. (2025). Análisis de los planes estratégicos para la exportación de café en el Perú 2020-2024. [Tesis de licenciatura, Universidad Señor de Sipán]. Archivo digital. <https://repositorio.uss.edu.pe/bitstream/handle/20.500.12802/14375/Gar>

- cia%20Cruz%20Maryuri%20%26%20Ramirez%20Parrilla%20Zenobia.pdf
- [38] Massapina, M., Meireles, M., & Madaleno, M. (2024). Circular economy in firms' strategies—What are the determinants of eco-innovation? *Environment Development And Sustainability*. <https://doi.org/10.1007/s10668-024-05593-3>
 - [39] Pham, T., Nguyen, T., Le, T. (2025). Innovation and National Competitiveness: Empirical Evidence from Emerging Economies. *Proceedings of the 5th International Conference on Research in Management and Technovation*. https://doi.org/10.1007/978-981-97-9992-3_18
 - [40] Mamani, K. (2024). La competitividad empresarial y el desempeño exportador en las empresas productoras de café en la región de Puno, 2023. [Tesis de licenciatura, Universidad Continental]. Archivo digital. <https://repositorio.continental.edu.pe/handle/20.500.12394/15627>
 - [41] Ahmadov, T., Durst, S. & Gerstlberger, W. (2024). Unveiling success factors for implementing and sustaining circular economy practices in SMEs: multi-level perspective. *The Bottom Line*. <https://doi.org/10.1108/BL-12-2023-0320>
 - [42] Rehman, U., Gyamfi, S., Rasool, S., Akbar, F., Hussain, K & Prokop, V. (2023). The nexus between circular economy innovation, market competitiveness, and triple bottom lines efficiencies among SMEs: evidence from emerging economies. *Environ Sci Pollut Res* 30, 122274–122292 (2023). <https://doi.org/10.1007/s11356-023-30956-0>
 - [43] Bravo, W., y Paucar, L. (2022). Percepción del nivel de competitividad de la empresa exportadora de uva ECOSAC, Piura - 2021. [Tesis de licenciatura, Universidad Privada del Norte]. Archivo digital. <https://hdl.handle.net/11537/33567>
 - [44] Marcos, F., Kaczam, F., Luiz de Moura, G., Costa Vieira, L., Vieira, W. & Pereira, C. (2021). Competitive advantage and dynamic capability in small and medium-sized enterprises: a systematic literature review and future research directions. *Rev Manag Sci* 16, 617–648 (2022). <https://doi.org/10.1007/s11846-021-00459-8>
 - [45] Herencia, D. y Magallanes, B. (2021). Propuesta de implementación de indicadores de control en el área de Producción, para mejorar la gestión en una empresa exportadora de recursos hidrobiológicos del sector pesquero. [Tesis de licenciatura, Universidad Peruana de Ciencias Aplicadas]. Archivo digital. <http://hdl.handle.net/10757/670722>
 - [46] Ju, Y., Cheng, Y., Chen, L. & Xing, X. (2024). Enhancing firms' innovation persistence in the circular economy through government-supported green supply chain demonstrations: cost leadership or differentiation?. *International Journal of Logistics Research and Applications*, 28 (5). pp. 1-21. ISSN 1367-5567, 1469-848X. <https://doi.org/10.1080/13675567.2024.2311192>
 - [47] Geissdoerfer, M., Pieroni, M., Pigosso, D. & Soufani, K. (2020). Circular business models: A review. *Journal of Cleaner Production*, 277. <https://doi.org/10.1016/j.jclepro.2020.123741>