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ORIGINAL

Sustainable Management in the Business Sector of Riobamba City

Gestión sustentable en el sector empresarial de la ciudad de Riobamba

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ABSTRACT

Introduction: the concept of sustainable management has gained prominence in the industrial sector as response to the environmental and social challenges of the 21st century. From a theoretical perspective, sustainable practices are proposed to integrate economic, environmental, and social strategies that enable companies to enhance their overall performance and reputation. The study identified the sustainability practices implemented in productive sectors, analyzing the perceptions, strategies, and outcomes observed by local business owners.
Method: a survey was conducted among 150 companies from the productive sector in Riobamba, equitably selected from the primary, secondary, and tertiary sectors. The instrument included closed-ended questions related to the level of knowledge, implemented practices, perceived benefits and challenges, suggested strategies, and willingness to invest in sustainability. The data collected were analyzed using frequencies and percentages to identify trends.
Results: seventy-five percent of the companies expressed a willingness to invest in sustainable practices, with waste management (28 %) and efficient water use (17 %) being the most common practices. Fifty-seven percent evaluated the impact of these strategies positively, while 29 % indicated a need for financial support to enhance their sustainability. Regulatory barriers and a lack of training and sustainable culture were cited as significant obstacles.
Conclusions: the productive sector shows significant progress in the implementation of sustainable practices, though challenges such as financing, training, regulation, and technical and economic support remain. It is suggested to adopt sustainable strategies that optimize the environmental, economic, and social impact of the sector.

Keywords: Sustainable Management; 3Rs (Reduce, Reuse, Recycle); Corporate Responsibility; Environmental Policies; Economic Development; Responsible Companies.

RESUMEN

Introducción: el concepto de gestión sustentable ha adquirido relevancia en el sector industrial como

respuesta a los desafíos ambientales y sociales del siglo XXI. Desde un enfoque teórico, se plantea que las prácticas sustentables integren estrategias económicas, ambientales y sociales que permitan a las empresas mejorar su desempeño integral y su reputación de empresa. El estudio identificó las prácticas de sostenibilidad implementadas en los sectores productivos, analizando las percepciones, estrategias y resultados observados por los empresarios locales.

Método: se realizó una encuesta a 150 empresas del sector productivo de Riobamba, seleccionadas equitativamente entre los sectores primario, secundario y terciario. El instrumento incluyó preguntas cerradas relacionadas con el nivel de conocimiento, prácticas implementadas, beneficios y desafíos percibidos, estrategias sugeridas y la disposición a invertir en sostenibilidad. Los datos obtenidos se analizaron mediante frecuencias y porcentajes para identificar tendencias.

Resultados: el 75 % de las empresas mostró disposición a invertir en prácticas sustentables, destacando la gestión de residuos (28 %) y el uso eficiente del agua (17 %) como las prácticas más comunes. El 57 % evaluó positivamente el impacto de estas estrategias, mientras que un 29 % manifestó la necesidad de apoyo financiero para mejorar su sostenibilidad. Las barreras regulatorias y la falta de capacitación y cultura sustentable fueron citadas como obstáculos relevantes.

Conclusiones: el sector productivo muestra avances significativos en la implementación de prácticas sustentables, aunque existen desafíos como: financiación, capacitación, regulación, el apoyo técnico y económico, se sugiere adoptar las estrategias sostenibles, que optimicen el impacto ambiental, económico y social del sector.

Palabras clave: Gestión Sustentable; 3RS; Responsabilidad Corporativa; Políticas Ambientales; Desarrollo Económico; Empresas Responsables.

INTRODUCTION

Sustainable management in the business sector has become an imperative need in the current context due to climate change and depletion of natural resources. In this research, a literature review on sustainable management has been conducted, addressing key concepts, benefits, challenges and implementation strategies, with a specific focus on its application in the productive sector in the city of Riobamba.

In the contemporary business environment, sustainability and social responsibility have become fundamental pillars for the long-term success of any entity, regardless of its size. In the case of small and medium-sized enterprises (SMEs), the adoption of sustainable management practices (SMPs) not only contributes to environmental preservation and social welfare, but also results in tangible benefits capable of transforming organizational culture and improving competitiveness.[1,2,3]

Table 1. Triple Bottom Line Model or dimensions of Sustainable Management

Dimension	Indicator	Definition
Economic.	Financial Sustainability	The capacity of a company to generate revenues and profits in the long term without compromising its future resources.[4]
	Investment in Innovation	Encourages innovative practices and technologies that promote efficiency and cost reduction.[5]
Environmental.	Resource Management	Efficient use of natural resources to minimize environmental impact.[6]
	Emissions Reduction	Implementation of strategies to reduce carbon footprint and other pollutants.[7]
Social.	Corporate Social Responsibility (CSR)	Business initiatives that contribute to social welfare and community development.[8]
	Working Conditions	Ensuring a safe, fair and healthy working environment for employees.[9]

Sustainable management refers to the administration and coordination of economic, social and environmental resources in companies in order to ensure long-term viability and responsibility towards future generations.[2] The concept is based on the triple bottom line model, which considers a balance between economic development, environmental protection and social equity. . The concept is based on the triple bottom line model, which considers a balance between economic development, environmental protection and social equity, and is no longer a net economic entity, but a social connection in the preservation of the planet. This concept is also called the dimensions of sustainability.[3]

Benefits of sustainable management

The adoption of sustainable practices offers multiple benefits, both internal and external.[10]

Improved reputation: companies that adopt sustainable practices are perceived positively by consumers and other stakeholders.

Increased operating efficiency: efficiency in the use of resources reduces operating costs.

Access to new markets: sustainability can open doors to new markets and consumer segments.

Regulatory compliance: facilitates compliance with environmental and social regulations.

Challenges in the implementation of sustainable management

Companies face several challenges when trying to implement sustainable management practices.[11]

Initial costs: the initial investment in sustainable technologies and practices is high at the beginning and it takes time to see results in the short term.

Lack of knowledge and training: many companies lack the information and skills necessary to implement these practices.

Resistance to change: the transformation to sustainable management may encounter internal resistance due to organizational culture and established habits.

Strategies for sustainable management

Strategies to implement sustainable management may vary, but some general recommendations include:[12]

Integration of sustainability into corporate strategy: is to incorporate sustainable objectives into the company's mission and vision.

Innovation and technological development: consists of investing in clean technologies and innovative processes.

Partnership alliance: establishing alliances with other companies, governments and NGOs to promote sustainable practices.

Education and awareness: is to train employees and sensitize *stakeholders* on the importance of sustainability.

Sustainable management in the city of Riobamba

The city of Riobamba, like other localities, faces specific challenges on its path towards corporate sustainability. Local studies indicate a growing awareness and adoption of sustainable practices in various industries, although there are still significant barriers that need to be addressed.[13]

ISIC industry classification

The International Standard Industrial Classification (ISIC) establishes a classification that resembles productive economic activities, with the purpose of providing a set of categories according to activities; the term "activity" is understood as a process, and the combination of actions and its result is a product. The categories are grouped by activities and combined with resources such as equipment, labor, manufacturing techniques or products to obtain certain goods or services.

The ISIC User's Manual is an iterative product to know and manage the levels of disaggregation of economic activity and is based on the international classification published by the United Nations, adapted annually to the national statistical reality.[14] The international classification proposes a classification list as shown in table 2.

In the city of Riobamba, industrial land is classified into the following groups: low impact, medium impact, high impact, and hazardous; and the municipal administrative entity in charge of environmental management is the Risk Unit and the Fire Department, which issue the respective classification reports on industrial use based on the impacts caused by the companies. The companies located in Riobamba's industrial park are small and medium-sized businesses known as MSMEs that belong to the three productive sectors.

These MI-SMEs are economic establishments dedicated to the transformation of raw materials into finished products or industry, they carry out their economic activities in a dispersed manner in the cantonal territory; However, there is a polygon and area destined for to group the industrial sector, which due to the growing urban development requires a long-term project to mobilize the space towards the outskirts of the canton in order to reactivate the companies that are considered of medium and high impact so that they can strengthen their actions, the Mucicipio of Riobamba plans a new industrial zone, according to Ordinance 013-2017 of the 2017 Urban Code in which the location of said polygon is indicated in the sector of Nitiluisa between the parishes of Calpi and San Juan, with a projected area of 4,59 Km^2 459,21 hectares) covering 0,47 % of the cantonal territory. This area is exclusively used for industrial and raw material processing activities. Pre-existing factories located in other parts of the city may continue to operate with a provisional license as long as they comply with the environmental and functional impact mitigation measures determined by the Municipal Administrative Entity in charge of environmental management.

Table 2. International Standard Industrial Classification	
A	Agriculture, livestock, hunting and forestry
B	Mining and quarrying
C	Manufacturing industries
D	Electricity, gas, steam and air conditioning supply
E	Water supply; sewerage, waste management and sanitation activities.
F	Construction
G	Wholesale and retail trade; repair of motor vehicles, motorcycles, personal and household goods.
H	Transportation and storage
I	Accommodation and food service activities
J	Information and communication
K	Financial and insurance activities
L	Real estate activities
M	Professional, scientific and technical activities
N	Administrative and support service activities
O	Public administration and defense; compulsory social security schemes
P	Education P.E.
Q	Q. Human health care and social welfare activities
R	Arts, entertainment and recreation
T	Activities of households as employers; undifferentiated activities of households as producers of goods and services for own use
U	Activities of extraterritorial organizations and bodies

The productive entities carry out their economic activities in the traditional production sectors called: primary, secondary and tertiary.

The primary sector: these are the economic activities related to the transformation of natural resources into primary, direct, unprocessed products; these are the unprocessed products. The main activities are: agriculture, mining, livestock, fishing, hunting, aquaculture, forestry, beekeeping, among others.

The secondary sector: these are economic activities related to artisanal and industrial activities, which come from the primary sector and are transformed into new products, producing tangible goods. The main activities are: chemical industry, iron and steel, mechanics, production of consumer goods, industries, construction, textiles, among others.

The tertiary sector: are activities of the service sector, trade, transportation, education, health and tourism. This sector does not produce tangible goods that can be physically touched or perceived. The main activities are: education, communications, catering, health, banks, transportation, tourism companies, among others.

METHOD

This study applies a mixed approach by combining qualitative and quantitative methods that allowed obtaining a comprehensive understanding of sustainable management in the business sector of the city of Riobamba. The descriptive research design was carried out in the following stages: (i) Bibliographic review on sustainable management and business practices, conducted in academic databases (Scopus, Google Scholar), publications of organizations such as the United Nations Global Compact, and journals specializing in sustainability and business. (ii) The application of research instruments, the technique was the survey, the objective was to assess the time of permanence, level of knowledge, current practices and challenges faced by companies in sustainable management. A structured questionnaire was conducted with questions on sustainable practices, perceived benefits, internal and external barriers. The survey was applied to managers, directors and those responsible for sustainability in the companies. The selection of the sample of 150 companies is representative in the different sectors (primary, secondary and tertiary) with equity, including both companies that implement sustainable practices and those that do not. (iii) in the data analysis, SPSS statistical software was used for descriptive analysis of the indicators of the study variables, to discuss the preliminary results, identify points of convergence and divergence, compile suggestions for future strategies and draw conclusions.

RESULTS

The results of the survey to entrepreneurs on sustainable management in the business sector of Riobamba are presented.

Section 1: General information about the company

Table 3. Sector of activity

Sector of activity	Frequency	Percentage
Primary: agriculture, livestock, fishing, and others.	50	33
Secondary: industries	50	33
Tertiary: services	50	34
Total	150	100

Table 3 shows the distribution of companies by sector of activity, the total number of companies surveyed was 150, distributed in three main sectors, the primary sector (agriculture, livestock, fishing, etc.) are 50 companies (33 %); the secondary sector (industries) 50 companies (33 %) and the tertiary sector (services): 50 companies (34 %). The characteristics of the distribution were equal for the primary, secondary, and tertiary sectors with the same percentage of participation (33 %) so that the analysis is unbiased.

Table 4. Number of employees

Number of employees	Frequency	Percentage
Less than 10	87	58
From 10 to 50	52	35
51-100	11	7
More than 100	0	0
Total	150	100

Table 4 shows the number of employees and provides information on the composition of the companies in terms of size in terms of personnel working in the companies in the different productive sectors: with less than 10 employees, 58 % represent more than half and because of their number they are considered “micro-enterprises” which are more common in the city of Riobamba. Companies with 10 to 50 employees represent 35 %, which are “small” companies that make up a significant part of the business fabric. Companies with 51 to 100 employees represent 7 %, which would be “medium-sized” companies that are scarce in the business context of Riobamba; and companies with more than 100 employees represent 0 %, showing that there are no large companies in the study sample, which may be a reflection of the economic characteristics of the region in the absence of large companies; which may be due to an economy centered on local or family businesses and little investment by large corporations.

Table 5. Company age

Age of the company	Frequency	Percentage
Less than 5 years	97	65
5-10 years	42	28
11-20 years	10	7
More than 20 years old	1	1
Total	150	100

Table 5 describes the age of the company or the duration of these; companies with less than 5 years 65 % of the companies are young, indicating a high rate of business creation in recent years. However, it reflects a dynamic business market, but with challenges in long-term sustainability. Companies with 5 to 10 years 28 % representing a considerable lower percentage, suggesting that many companies do not make it past the first five years in their economic operations. Companies with 11 to 20 years, 7 % are middle-aged companies and are scarce due to the fact that business survival decreases over time; and finally, companies with more than 20 years, 1 % are consolidated companies with a long trajectory and are almost scarce in this context, being a challenge to the economic environment of the market that seeks permanence over time.

Section 2: Knowledge and Perception of Sustainable Management

Table 6. Level of knowledge about sustainable management

What level of knowledge does your company have about sustainable management?	Frequency	Percentage
None	16	11
Basic	94	63
Intermediate	35	23
Advanced	5	3
Total	150	100

Table 6 describes the level of knowledge on sustainable management and how the managers of the surveyed companies perceive their knowledge on the subject of sustainable management. At the "none" level, 11 % representing a minority of companies have no knowledge on sustainable management, which evidences the need for awareness raising and basic training initiatives. At the "basic" level, 63 %, which is the majority of the companies that have a basic knowledge of the subject and show interest, although effective strategies are not yet implemented. At the "intermediate" level, 23 %, which represents almost a quarter of the companies that have intermediate knowledge, indicating a progressive advance in the understanding of sustainable management. The "advanced" level represents 3 %, which shows that very few companies have advanced knowledge, which could limit the development of high impact sustainable practices in the local business context.

Table 7. How is the company informed about sustainable management?

How have you been informed in the company about sustainable management?	Frequency	Percentage
Media (internet)	12	8
Internal training	78	54
External consultants	49	33
Business networks	11	8
Total	145	100

Table 7 describes the main sources through which companies have obtained information on sustainable management. Eight percent have been informed by the media (internet) in the search for information on sustainable management, which could be due to a low interest and focus on business issues. By means of internal training, 54 % representing more than half of the companies have acquired knowledge on sustainable management through internal programs, which highlights the role of training and self-management within the organizations. Thirty-three percent of the companies have resorted to external consultants, which shows an interest in obtaining specialized advice adapted to their particular needs; and through business networks, 8 % that show a limited impact in the search for information, although they could be an underutilized resource to share good practices and experiences in sustainable management by the companies.

Section 3: Sustainable Management Practices

Table 8. Sustainable management practices

What sustainable management practices does your company currently implement?	Frequency	Percentage
Efficient use of energy	23	15
Waste management	42	28
Efficient use of water	25	17
Emissions reduction	6	4
Recycling practices	18	12
Investment in clean technologies	20	13
Corporate social responsibility	16	11
Total	150	100

Table 8 describes the sustainable actions implemented by managers in the surveyed companies. Waste management 28 % is the most common practice implemented, possibly because waste management is a regulatory requirement or perhaps because it generates immediate benefits in the business operation. Efficient use of water 17 % of the companies are focused on optimizing the use of a critical resource such as water, which is relevant in contexts where this resource is scarce. Efficient use of energy 15 % seek to reduce operating costs, in addition to the energy crisis that Ecuador is going through, through savings a contribution is made towards environmental sustainability. Investment in clean technologies, 13 % is still limited; very few companies are investing in technological innovations that favor long-term sustainability. Recycling practices, 12 %, a low percentage indicating logistical or infrastructure challenges to implement recycling systems. Corporate social responsibility (CSR) 11 % perform CSR actions which represent a lower percentage, possibly because they are perceived as a complement and not as a central part of sustainability; and emissions reduction 4 % which is a less adopted practice reflecting technological limitations with the perception that emissions are not a priority issue in the local business context.

Table 9. How long has the company implemented sustainable management practices?

How long has your company implemented sustainable management practices?	Frequency	Percentage
Less than 1 year	25	17
1-3 years	84	56
4-6 years	23	15
More than 6 years	18	12
Total	**150**	**100**

Table 9 shows the age of sustainable initiatives in the surveyed companies. less than 1 year 17 % of the companies have recently started to implement sustainability practices, which reflects a growing interest or pressure to adopt responsible measures. From 1-3 years 56 % representing more than half of the companies have relatively recent experience (1-3 years) in implementing sustainable practices, suggesting that sustainable management is in a growing phase in Riobamba. From 4-6 years, 15 % of companies have more time applying these practices, which could indicate a more consolidated and strategic approach in this group; and more than 6 years, 12 %, which is a minority, have a long trajectory in sustainability, which suggests that these companies could act as leaders or referents in the topic.

Section 4: Benefits and Challenges to be Implemented

Table 10. Benefits of implementing sustainable practices

What benefits has your company observed since implementing sustainable practices?	Frequency	Percentage
Reduction of operating costs	10	7
Improved company image or reputation	62	41
Increases employee satisfaction	33	22
Compliance with regulations or standards	45	30
Access to new markets	0	0
Total	150	100

Table 10 shows how companies perceive the results of their sustainability efforts. Improved company image or reputation 41 % of the companies identify this as the main benefit, indicating that sustainable practices are being valued by customers and other stakeholders. Compliance with regulations or standards 30 % of companies highlight regulatory compliance as a benefit, suggesting that sustainable practices also help reduce legal risks and penalties. Increased employee satisfaction 22 % think that sustainable practices seem to have a positive impact on the work environment, contributing to employee motivation and well-being. Reduced operating costs 7 % think that sustainability can generate operational savings, few companies perceive this as a direct benefit, which could reflect initial implementation difficulties or a limited focus on resource efficiency. Access to new markets 0 % no company has reported this benefit, which indicates a lack of exploration in sustainable markets or the absence of incentives in the local context.

Table 11. Challenges in sustainable practices

What are the main challenges your company has faced in the implementation of sustainable practices?	Frequency	Percentage
High initial costs	10	7
Lack of knowledge and training	44	29
Resistance to internal change	71	47
Lack of government support	25	17
Total	150	100

Table 11 identifies the main barriers perceived by the companies in the application of sustainability to sustainability. Resistance to internal change 47 % showed resistance to change within the organization, a common challenge that companies face when modifying organizational culture and adapting to new practices. Lack of knowledge and training 29 % point to lack of knowledge and training as an obstacle, highlighting the need for specific training programs to equip staff with sustainability skills. Lack of government support 17 % show a lack of support from authorities is a significant concern, indicating the need for public policies and incentives to facilitate the transition to more sustainable practices. High upfront costs 7 % consider that the initial cost of sustainability investments remains a barrier for some companies, particularly those with limited resources.

Section 5: Strategies and the Future

Table 12. Strategies to promote sustainable management in companies

What strategies do you consider to be effective in promoting sustainable management in your company?	Frequency	Percentage
Continuous training of personnel	30	20
Investment in sustainable technologies	18	12
Alliances with other companies and organizations	19	13
Participation in sustainability programs	35	23
Implementation of internal sustainability policies	48	32
Total	150	100

Table 12 describes the main strategies applied by the companies to promote sustainable practices: the implementation of internal sustainability policies, 32 % consider internal policies to be an effective strategy and reflect the importance of establishing standards and practices aligned with sustainability within the organization. Participation in sustainability programs, 23 % participate in external initiatives, because it facilitates access to resources, training and recognition in the business environment. Continuous training of personnel, 20 % of the companies have constant training for personnel to implement and maintain sustainable practices. Alliances with other companies and organizations, 13 % are less common, but have the potential to strengthen the capacity of the companies through the exchange of resources and knowledge. Investment in sustainable technologies 12 %, which could reflect budgetary constraints or lack of knowledge about their positive impact.

Table 13. Investment of resources in sustainable practices

Is your company willing to invest resources in sustainable practices in the future?	Frequency	Percentage
Yes	113	75
No	37	25
Total	150	100

Table 13 shows the intentions of the companies surveyed with respect to the allocation of resources for sustainability in the future: companies willing to invest in sustainable practices, 75 % a majority of the companies are open to invest in sustainable practices, which reflects a positive attitude towards sustainability

and a recognition of its importance in the long term. Companies unwilling to invest are 25 % a quarter of the companies are not willing to allocate resources to sustainable practices, possibly due to economic constraints, lack of knowledge or perception that these practices do not generate immediate benefits.

Table 14. Support needed by the company for sustainable practices

What kind of support would your company need to improve its sustainable management practices?	Frequency	Percentage
Financial support (grants, donations, credits, tax incentives)	43	29
Technical assistance and consulting	35	23
Training and education	35	23
Reduction of regulatory barriers	37	25
Total	150	100

Table 14 details the needs perceived by the companies to strengthen their sustainability initiatives. Financial support (subsidies, grants, donations, credits, tax incentives) 29 % require access to financial resources. Reducing regulatory barriers 25 % represent a quarter of the companies that identify regulatory barriers as a major obstacle, suggesting the need to simplify processes or adapt regulations to promote sustainability. Technical advice and consulting 23 % demand technical advice and reflect the need for specialized guidance to effectively develop and implement sustainable strategies. Capacity building and training 23 % need staff training recognizing that internal knowledge is key to sustainability.

Section 6: Impact and evaluation

Table 15. Evaluation of the impact of sustainable practices

How does your company evaluate the impact of sustainable practices on economic, environmental and social performance?	Frequency	Percentage
Very positive	24	16
Positive	85	57
Neutral	28	19
Negative	13	9
Very negative	0	0
Total	150	100

Table 15 presents the perception of companies regarding the effect of sustainable practices on their overall performance: 57 % are positive, which represents more than half of the companies that evaluate the impact as positive and consider it beneficial in multiple areas. Very positive 16 % perceive a very positive impact, suggesting success stories in which sustainability has significantly improved their performance. Neutral 19 % a portion of companies evaluate the impact as neutral, indicating that they have not experienced significant changes or are still in the early stages of implementation. Negative 9 % a minority group perceives adverse effects, probably due to implementation costs, lack of immediate results or operational challenges; and Very negative 0 % there is an absence of this assessment and reinforces that sustainable practices do not usually have critical unfavorable impacts.

Does your company carry out periodic evaluations of its sustainable practices?

Table 16. Does your company carry out periodical evaluations of its sustainable practices?

Does your company carry out periodic evaluations of its sustainable practices?	Frequency	Percentage
Yes, annually	24	16
Yes, every two years	85	57
Yes, every three years	28	19
No	13	9
Total	150	100

Table 16 details the frequency with which companies review and analyze their sustainability initiatives. Fifty-seven percent carry out evaluations every two years and represent the majority of companies that choose to evaluate their practices. Nineteen percent choose to conduct spaced evaluations every three years due to time or budget constraints; and 16 % conduct annual evaluations, indicating that few companies have a rigorous system of continuous monitoring; and "No evaluations" is the 9 % that do not evaluate their practices, which limits their ability to identify improvements or demonstrate the impact of their implemented initiatives.

DISCUSSION

Table 17. Sutainable management indicators and improvement strategies

Indicator: time of permanence of the enterprises.	Improvement strategies
Local economy: it is essential for Riobamba's economic development, however, it can limit large-scale economic growth due to the absence of large companies. High proportion of young businesses: 65 % of businesses have less than 5 years of operations in the active entrepreneurial environment, with difficulties for long-term sustainability. Low long-term persistence: only 1 % of companies exceed 20 years of age, indicating that few businesses manage to establish themselves as stable pillars in the local economy. Gradual loss: as age increases, the number of businesses decreases significantly, due to factors such as: lack of capital, market changes or low innovation.	Support policies: implement programs to help young businesses overcome initial challenges and foster their sustainability. Issue laws and external regulations for their regulation by the state[15] Investment in innovation: create incentives to diversify and adapt to market changes. Business strengthening: design strategies to increase business longevity, with training and access to financing.
Indicator 2: knowledge of sustainable management.	Improvement strategies
Predominance of basic knowledge: most of the surveyed enterprises (63 %) are at an initial level of knowledge, and with limitations in the implementation of complex sustainable strategies. The analyzed establishments(68 %) focus more on economic results, and neglect the importance of the environmental and social perspective.[16] Low specialization: only 3 % of the companies have advanced knowledge, therefore, there is a need for training and specialization. Opportunity for improvement: 11 % do not have any knowledge in environmental sustainability, being a key challenge to raise awareness and train these companies.	Training and education: implement accessible educational programs to promote knowledge in sustainable management. Promotion of success stories: highlight companies that maintain an advanced level of knowledge, to motivate other companies to follow their similar practices. Differentiated strategies: Design training strategies that address different levels of knowledge, from basic awareness to the development of competencies that are more advanced.
Indicator 3: Activities carried out in sustainable management.	Improvement strategies
Predominance of internal training: most of the companies carry out training internally, with their own human and educational resources within the organizations. Role of external consultants: a high percentage of companies that resort to external experts with more specialized knowledge carry out training. Opportunities for the media and corporate networks: the media and corporate networks are little used as channels to disseminate sustainable management activities, being necessary to improve their use in order to increase the scope of this information and share experiences.	Strengthen business networks: promote collaborative activities among companies to share experiences and generate synergy. Promote alliances with the media: encourage the creation of media communication campaigns aimed at the business sector with topics of importance in sustainability. Specialized external training: complement internal training with external expert programs that offer a broader vision and updated tools.
Indicator 4: sustainable management practices.	Improvement strategies
Reactive practices: companies focus on practices that respond to immediate needs (such as waste management) instead of strategic actions that are proactive (such as reducing gas emissions). Companies engage in common practices to meet immediate needs in sustainable management[17] engage in immediate rather than long-term sustainable practices.[18] Low investment in advanced technologies: although there is interest in clean technologies, their implementation is still limited, which may be related to budgetary restrictions or lack of knowledge. Opportunities for improvement: there is scope for increasing the adoption of more advanced practices, such as emissions reduction and corporate social responsibility, which generate economic and social value.	Training and awareness: provide training and awareness programs that explain the long-term benefits of practices such as emission reductions and Corporate Social Responsibility. Financial support: provide access to financial incentives to invest in clean technologies and advanced sustainable practices. Strengthening recycling and emissions: develop infrastructure to facilitate these practices at an affordable cost for companies.
Indicator 5: Implementation time of sustainable management practices.	Improvement strategies

Recent incorporation: the majority of companies (73 %) have started to implement sustainable practices in the last three years, with an emerging trend towards sustainability in the business sector. Limited experience: only 12 % of companies have more than 6 years working on sustainability, with limitations and depth in the scope of current initiatives. Positive evolution: companies that have initiated these sustainable practices maintain a growing awareness and acceptance of sustainable management.	Consolidate recent initiatives: design follow-up and support programs for companies that have recently initiated sustainable practices, in order to promote their efforts to be sustainable in the long term. Foster leadership: promote the exchange of best practices and experiences between companies with more than 6 years in sustainable management and those that are just starting out. Impact measurement: implement tools to evaluate the impact of these practices and adapt them according to the results obtained.
Indicator 6: benefits in sustainable management	Impediments or barriers
Intangible benefits: improving the company's reputation and regulatory compliance, which are considered to be the direct economic benefits.[18] Practices must not only be profitable, but also sustainable and socially responsible so that they contribute to balanced development that benefits businesses in the sector, and promote a responsible sector that is prepared to face future challenges.[19] Lack of focus on sustainable markets: the lack of impact of sustainable markets is an opportunity for companies that maintain sustainable practices to position themselves in sectors with high demand for sustainable products and services. Potential to optimize costs: there is a low percentage of reduction in operating costs and it is necessary to implement effective measures to make better use of resources.	Incentivize access to new markets: promote strategies in companies to position their sustainable products or services in specialized markets. Strengthen the focus on operational efficiency: promote the implementation of technologies and processes to reduce costs. Measuring and communicating benefits: Design tools for companies to measure and communicate the tangible and intangible benefits of having implemented their sustainable practices.
Indicator 6: Challenges in Sustainable Management	Improvement strategies
Predominance of internal challenges: Resistance to change and lack of internal training represent the greatest barriers, therefore, companies need to work on cultural transformation and training of their internal staff. Relevance of external support: Lack of government support and financial cost are challenges for companies. Implement environmental impact mitigation projects to solve barriers related to lack of information on rational energy use alternatives; technical potentials and alternatives; little or no internal technical advice; lack of capital and sources of financing due to credit line facilities.[20]	Cultural change programs: develop initiatives to reduce internal resistance among workers through awareness-raising, sustainability leadership, and continuous training. Supportive public policies: encourage dialogue between companies and governments to design policies that support sustainability, such as tax incentives, subsidies, or regulations. Accessible financial solutions: Propose forms of financing that minimize initial implementation costs for companies interested in applying sustainable practices.
Indicator 7: sustainable management strategies	Improvement strategies
Develop internal policies: internal policies structure and formalize the commitment towards sustainability within the companies.[21] Training and driver training programs: training and participation in external programs that help to create awareness and motivation. through the education (eco pedagogy) in children and adults, creation of neighborhood committees, and community interaction with different institutions, governmental, non-governmental and investors.[22] Low technological investment: The low priority of investment in sustainable technologies is a challenge for companies to integrate advanced solutions into business operations. Few companies have implemented sustainable energy management practices in a systematized way, in research and development and innovation.[23]	Design policies and practices: create specific internal policies that fit business objectives and resources. Strengthen strategic alliances: promote collaborations between companies and organizations to share experiences, reduce costs and share experiences on the impact of sustainable practices. Facilitate access to technologies: create financial incentives and support programs that enable companies to acquire and implement sustainable technologies.
Indicator 8: need for support in sustainable management	Improvement strategies
Financing: the need for economic support is a barrier for many companies, especially those with limited resources. There is a need for economic support to implement sustainability.[24] Balance between regulatory and technical aspects: in addition to financing, companies seek regulatory and technical solutions that allow them to implement sustainable practices more smoothly. Importance of internal strengthening: training and technical consulting are essential to ensure that companies have the necessary skills to adopt these practices in a sustainable manner.	Design accessible financing programs: create grant profiles, soft loans and tax incentives to facilitate investment in sustainability. Simplify regulations and procedures: work with regulatory agencies to reduce bureaucratic barriers and adapt regulations to the needs of companies. Promote knowledge transfer: organize workshops, training and business support networks to share best practices and experiences in sustainable management.
Indicator 9: Investment in sustainable management.	Improvement strategies

Favorable tendency to invest: there is a predisposition of the companies that are willing to invest, which is an encouraging indication of the opportunity to expand sustainable practices in Riobamba's business sector. Resistance from a significant minority: companies that are not willing to invest could benefit from awareness campaigns and programs that demonstrate the tangible benefits of sustainability by the government and the experiences of other companies through partnerships.	Create incentives for investment: design government programs or public-private partnerships that offer financing, credits or subsidies to facilitate investments in sustainability. Awareness raising and training: implement workshops and campaigns aimed at reluctant companies, highlighting success stories and the economic, social and environmental benefits of sustainable management. Strengthen accompaniment strategies: provide technical advice and practical tools to ensure that future investments have a positive and sustainable impact by the government.
Indicator 10: Evaluation of sustainable management practices.	Improvement strategies
Predominantly positive perception: 73 % of the companies value the impact as positive or very positive, in the perception of sustainability as an element that adds value. Sustainable companies generate a positive impact on the company's reputation and on regulatory compliance.[24]	Strengthen success stories: share stories of companies with "very positive" evaluations to inspire and guide other companies and apply benchmarking. Support companies in difficulty: provide technical and financial advice to companies that have not yet implemented sustainability practices to optimize their processes. Apply measurable metrics: establish measurement systems that allow companies to identify and evaluate the tangible and intangible benefits of applying sustainable practices between before and after.
Indicator 11: Periodic evaluations in sustainable management.	Improvement strategies
Frequent evaluations: most of the companies carry out periodic evaluations (91 %), which is an indicator to ensure the monitoring and improvement of sustainable practices. Continuous improvement: Frequent evaluations indicate an opportunity to encourage improvement analysis. Lack of evaluation in some companies: Indicator evaluations are tools for improvement.[25]	Encourage continuous evaluations: promote a monitoring system at least on an annual basis through performance indicators. Support companies that do not carry out evaluations: design programs that provide advice and initial resources for those companies that have not yet implemented periodic evaluations. Establish key performance indicators (KPIs): apply metrics to systematically measure the impact of sustainable practices.

The distribution of the companies in the city of Riobamba was carried out according to the three productive sectors primary, secondary and tertiary in a total of 150 companies surveyed, conducted in an equitable manner the results reflect a diversified economy, with a contribution to the local GDP with an impact in terms of income, employment or sustainability. Although the time of permanence defines sustainability in micro and small businesses that have challenges in terms of resources to implement sustainable practices. An analysis by indicator and improvement strategies is presented below.

The proposed strategies have been developed according to the results of the study, complemented with references from authors in sustainable management, international studies and regulations, and scientific publications on the impact of these practices. The results of the study confirm that the majority of Riobamba's companies perceive a positive impact of sustainable practices and that they seek to contribute to sustainable improvement by improving their corporate reputation and following regulatory compliance.

CONCLUSIONS

The results of the surveys reflect an encouraging outlook with respect to sustainable management in the business sector in the city of Riobamba, highlighting that most companies recognize the importance of environmental sustainability and are willing to invest in it, although they need financial, technical and regulatory support. The challenges faced by companies with a culture committed to sustainability; however, there are mediated practices such as waste management and efficient use of resources that are implemented by most companies in the last three years, but there is still room for progress with long-term practices in areas such as emissions reduction and investment in clean technologies. Most companies evaluate the impact of these practices as positive or very positive, they recognize that implementing these practices improves the company's reputation, as well as regulatory compliance and employee satisfaction, although they face challenges in terms of immediate results in accessing new specialized and socially conscious markets. Finally, the strategies that have been implemented the most to promote sustainability are internal policies, training and participation in internal awareness and sensitization programs, evidencing a need to structure concrete support from government policies that encourage and consolidate these practices in the medium and long term.

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CONFLICT OF INTEREST

None.

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