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Management of ecofriendly practices with the environment in supermarkets: a perception of university students and managers

Gestión de prácticas eco amigables con el medio ambiente en supermercados: una percepción de estudiantes universitarios y gerentes

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ORIGINAL ARTICLE

KEYWORDS

Ecofriendly, ecological products, solid waste, supermarkets

Companies focus on eco sustainability and their contribution to sustainability is aimed at rethinking new practices for ecological products and waste disposal, committed to the environment. **Objective:** To describe and interpret the management of ecofriendly practices in supermarkets, based on the perception of university students and managers, to contribute towards a model of responsible culture management with the environment in organizations. **Method:** Qualitative-quantitative, mixed approach, non-experimental design, descriptive and interpretive type. It shows 93 university students and 02 managers, a cross-sectional survey and in-depth interviews. **Results:** The management of ecofriendly practices in supermarkets is comprehensively rated as regular with 37% according to the perception of university students; the management of waste energy and water qualifies regular with 30%, requires attention as centers of new income and reduction of expenses. **Conclusion:** The construction of the empirical bases of the ecofriendly management model are:

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Products, packaging and eco-labels. Waste, energy and water. Environmental communication and infrastructure.

PALABRAS CLAVE

Eco amigable, productos ecológicos, residuos sólidos, supermercados

Las empresas tienen como eje lo eco sostenible y su contribución de sustentabilidad, está encaminada a repensar nuevas prácticas de comercialización de productos ecológicos y disposición de residuos, comprometidos con el medio ambiente. **Objetivo:** Describir e interpretar la gestión de prácticas eco-amigables de supermercados, a partir de la percepción de los estudiantes universitarios y gerentes, para contribuir con un modelo de gestión de cultura responsable con el medio ambiente en las organizaciones. **Método:** El enfoque mixto, cualitativo-cuantitativo, diseño no experimental de tipo descriptivo e interpretativo. La muestra, 93 estudiantes universitarios y 02 gerentes, la encuesta de corte transversal y entrevistas de profundidad. **Resultados:** La gestión de prácticas eco amigables de los supermercados integralmente se califica como regular con el 37% según la percepción de los estudiantes universitarios. La gestión de residuos, energía y agua fue calificada como regular con el 30% el cual requiere la atención como centro de nuevos ingresos y reducción de gastos. **Conclusión:** La construcción de las bases empíricas del modelo de gestión eco amigable son: Productos, envases y eco etiquetas. Residuos, energía y agua. Comunicación e infraestructura ambiental.

1. INTRODUCTION

The globalization scenario has intensified competition in the supermarket sector and its environmental orientation. Supermarkets (with an area between 400 m2) and hypermarkets (with an area between 25000 m2) sell a large assortment, with an average of 40 outlet boxes and the area exceeds 2,500 m2 (Chullo, 2017).

We live the boom of green companies, under the commercialization of ecological, socially responsible products, awareness and commitment to cause the least possible impact on the environment (Molina, 2011). Sustainable businesses present friendly activities, do not have a negative impact on the environment and obtain economic benefits (cleaner production, renewable energy, smart buildings, social responsibility, etc.) (Austermuhle, 2002).

The environmental perception of supermarkets from the segment of university students (between 18 to 25 years old), are attractive for being large, modern formats, a variety of products and brands; however, foods with octagon information that exceed technical parameters are warned: high in sodium, in sugar, in saturated fats and trans fats; These processed products go against healthy eating, a negative impact on the quality of life and the environment. On the other hand, supermarkets generate large amounts of solid and liquid waste, presenting limitations in the disposal and valuation of their waste for preservation of the environment.

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In order to understand the importance of eco-friendly activities and practices with the environment, we start from the consideration that supermarkets include: Organic products, products with eco-labels, biodegradable bags, T8 and T5 lamps, waste, energy, water and training. of the staff. This allows responsible and sustainable ecofriendly management to determine a taxonomy of three categories: products, packaging and eco-labels; solid waste, energy and water and environmental communication (Díaz and Zea, 2017; Storino, 2013).

The management of ecological products, packaging and eco-labels

The search for suppliers with biodegradable and compostable products, biodegradable packaging (Patarroyo, 2019). The ecofriendly products and packaging respect the environment, and from the decomposition form it can be differentiated into biodegradable (in natural conditions), oxodegradable (by chemical decomposition process) and compostable (it ends up not only degrading but it becomes compost). Composting is the biochemical process by which organic matter (plant and animal) by action of microorganisms is degraded and transformed into organic compost (Chanduví, 2006). In the marketing of processed products with octagon-shaped labeling, the healthy eating standard warns. This makes it even more noticeable in the advertising warnings for the labeling high in sodium, in sugar, in saturated fats or contains transgenic fats, which exceed technical parameters established in regulations promoting healthy eating (Law No. 30021).

Friendly packaging is considered ecological if it is biodegradable (low CO2 footprint), recyclable or reusable (Bohm and León, 2015). The use of biodegradable and / or recyclable packaging to pack food contributes to the construction of a circular economy (eco-designs and promoting recycling) (Minam, 2019). In Peru, Law No. 30884 or the plastic law, regulates single-use plastic and disposable containers or containers. The use of eco-friendly containers allows the consumer to be responsible with the environment, reduces environmental contamination and allows citizens to become aware of using cloth or paper bags to purchase products.

Waste, energy and water management

Solid waste constitutes substances, products and by-products in solid or semi-solid state that your generator has and is obliged to dispose of pursuant to the provisions of the national standard or the risks that cause health and the environment, these must be managed through a system that includes operations and processes (Law No. 27314). Inorganic wastes such as plastic, aluminum, paper and most packaging can be used again through recycling (Sedesol, 2001).

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Organic residues in supermarkets constitute those from handling, preparation and consumption in dining rooms, and from discarded food due to its degradation.

In supermarkets there are areas capable of producing negative impacts on the environment, one of the focuses is the refrigeration area due to the amount of energy consumed and the generation of solid or liquid waste (Jara, 2004). The saving of water in the institutions must consider: the control of leaks, warnings about the good use of water, reporting breakdowns of relevant equipment, watering gardens in hours of low solar intensity (Olivo, 2011).

Waste disposal and recovery

Waste disposal seeks to minimize the amount of solid waste and recovery uses the 4R: reduce, reuse, recycle and recover waste (The Ministry of Environment and Sustainable Development (2005). In our understand in the management of solid waste in supermarkets, the recovery seeks to optimize the use and disposal of solid and semi-solid waste. The strategic activities in solid waste include: Reduce, is to avoid generating garbage with the purchase of only necessary products, give a second use to the garbage before discarding it. Recycling is using the raw material of a product to produce the same or new one. To recover is to extract energy or materials from the waste.

Ecofriendly communication and infrastructure

Where ecological communication informs buyers of the attributes and benefits of the eco-product it markets and the image of a company that is committed and informed on environmental issues (Calomarde, 2000). Ecological communication relates what urban consumers want to consume and find in organic products and that companies get involved with information campaigns on environmental products, environmental awareness and education (Conama, 2016). You can see a double perspective of communication, the benefits of eco-friendly products and on the other hand inform about environmental sustainability and make credible the image of a sustainable company committed to the environment.

Companies in ecofriendly communication include consumers, workers and stakeholders to understand the impact on the environment, it involves changing attitudes and behaviors, practices and values of environmental commitment. Environmental education, is a process of permanent continuous improvement, seeks to offer environmental awareness, ecological knowledge, attitudes and values, commitment to actions and responsibilities for the rational use of resources and achieve

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sustainable development (Esap, 2015). Communication and friendly education aim to change attitudes, behaviors, practices and values of environmental commitment, some topics include raising awareness of green purchases and sales, good use of waste for ecological purposes, reducing spending and impact of environmental deterioration, awareness of responsible commitment to the environment.

The contextualization of ecofriendly practices has allowed the review of bibliographic background on issues of friendly products, solid waste, liquids and environmental communication, to promote sustainability as the axis of supermarkets, responds to the following objective: describe and interpret the management of eco practices friendly supermarkets, based on the perception of university students and managers, to contribute towards a responsible culture management model with the environment in organizations.

2. METHOD AND MATERIALS

The research is focused on supermarkets in the city of Puno in Peru (Plaza Vea and Negolatina), in the area of corporate social responsibility. The perception of ecofriendly practices was made to university students of the Professional School of Administration of the National University of the Altiplano, and to Managers of the main supermarkets in the city.

The research approach is of a mixed qualitative and quantitative nature, non-experimental design, descriptive and interpretive type of research. The population is made up of 664 university students, the sample is 93 students and 02 executives from the companies under study. The survey technique based on a cross-section questionnaire and in-depth interviews.

The implementation of the field work began in teaching coordination and students of the ethics and social responsibility course, visit to the companies' facilities. The study was conducted from August 2019 to January 2020.

Company executives were interviewed as experts in eco-friendly practices and strategies with the environment, and complemented by the application of a structured questionnaire to students to obtain consistent data on ecofriendly practices of the supermarkets.

The responses were raised as an information standard for a management model of eco-friendly practices responsible for the environment in supermarkets.

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In order to consolidate the theoretical model, an information pattern for managing ecofriendly practices responsible for sustainability was established with application to supermarkets.

3. RESULTS

Interpretation of perceptions of eco-friendly practices with the environment, according to supermarket managers

The executives of the Plaza Vea (PV) and Negolatina (NL) supermarkets offer us their point of view:

Products, packaging and eco labels from the ecofriendly culture.

> "The line of organic products are distributed in different areas of the supermarket; these products have different purchasing sensibilities. I assume organic products as healthy, instead of having a normal brush have a bamboo brush. Example investing in bamboo brushes quoting will give us between 6 to 8 of the normal that is 2.5 soles this would affect us. These organic products have a very small audience" (PV and NL).

In the executive conception of eco-friendly products, this responds from the seller-centered orientation, they have a clear notion of healthy products and relate them to the organic matter that forms the final product and those that exceed the parameters of healthy eating. In purchases, demand defines customer types, the sensible ones in healthy purchases, which is a still small segment of buyers. In investments, the prices to offer products are normal, low-price and the friendly calls of super-high prices, these affect the optimization of the capital of the company. The organization of organic products or product lines does not yet differentiate them from sustainable and environmentally committed businesses. They do not refer to ecofriendly packaging and eco labels. They are still just focusing and building their commitment to social responsibility and environmental awareness.

Solid waste, its disposal and recovery from recycling management.

> "There is a person in charge who collects, for example, the plastics or boxes and others, they come to collect it from the company because they have a contract with us and they recycle and reuse the waste. We have tried to work with a recycling company, but this could not be sustained and now these boxes are being used by people who want to carry

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their products in it. Besides, with the support of the municipality of Puno, with the recycling program, it is managing to be part of recycling, but it is not very effective either". PV and NL.

In solid waste disposal strategy, the intention of collecting waste cartons, papers, tetra pack, bags, glass, etc. is born from the companies to keep facilities clean, healthy and friendly. The strategy of valuing your waste is not in the interest of companies as a contribution to their income. They choose to outsource their solid waste and it is these companies that recycle and reuse the waste. Some recycling companies do not fulfill their task efficiently and are not sustainable, nor is it giving results on the disposal of their waste with the recycling program of the municipality, which is not very effective. The positive is the willingness to donate some materials such as boxes so that people can make better use of it.

Electricity and water consumption based on reduction and savings.

"The use of electrical energy is being reduced where it is not needed, in the same way in water. Also reduce the use of household implements in the company". Of course, we have implemented the issue of energy under the use of LED spotlights, apart from refrigeration equipment, we moved to eco-friendly refrigeration equipment, "these policies we currently have regarding the issue of energy and water saving" (PV and NL).

The management of reducing electrical energy becomes important in companies, they are sensitive to the use of LED spotlights, achieve savings, and lighting performance and are aware of environmental protection. The implementation of ecofriendly refrigeration equipment has brought them closer with their commitment and with the environmental culture. Water is not very considered as a relevant activity unless it is given details, and they only tend to reduce consumption. Energy saving is a practice that is increasing in the country and is spread by OSINERMING and electricity companies due to the impact it causes on the deterioration of the environment.

Communication and infrastructure as an image of ecofriendly awareness.

"On the environment, training is given with different exhibitors from related areas and they carry out the dissemination of environmental commitment issues. Our format is wide and we seek better attention. We have two important meetings a year, a meeting for Labor Day and Company Day, where we sensitize how the company has evolved, changes and some

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processes that have to do with budget in order to develop this environmental aspect and facilities. The last talk that was made, emphasized the issue of the use of plastic bags and the difference with biodegradable or oxy-biodegradable bags. With the old bags you did not have the problem of giving away for its price of 0.006 cents. In that you can see that there is a change where 20% bring their own bags to make their purchases". PV and NL.

Environmental communication stems from talks and training for staff to achieve their commitment to the company and better customer service. Environmental issues guide you to communicate through your ecofriendly bags your commitment to the environment and raise awareness of a change in your customers for environmental respect. The facilities try to present them in a better way to their clients, so they allocate budgets.

The following table has been prepared where a theoretical model of management of eco-friendly practices for supermarkets is clearly appreciated and perceived:

Table 1. Ecofriendly practices management model for supermarkets

Macro activity	Micro processes and relationships	Result
Ecofriendly practices management	Practices: Products. Packaging and eco labels	Economic impact: Green purchases.
	Practices: Products, energy and water	Social impact: Green purchases.
	Practices: Communication and friendly infrastructure.	Environmental impact: Responsible environmental learning.

Source: Systematization according to background and interviews, 2019.

Table 1, shows a taxonomy of categories: first, the macro activity focused on ecofriendly management; the second one has to do with micro-friendly relationships and processes of ecofriendly practices, and third the results are the impact of sustainable ecofriendly management. This theoretical model for the ecofriendly management of supermarkets, systematizes and allows the prospecting of ecofriendly sustainable practices of responsibility and commitment to the environment.

Description and evaluation of the level of ecofriendly practices with the environment in supermarkets, according to university students

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Table 2. Level of presence of ecofriendly food products

Category	Frequencies	Percentage
Very high	0	0%
High	22	24%
Regular	54	58%
Low	17	18%
Very low	0	0%
Total	**93**	**100%**

Source: Survey applied to university students Puno, 2019.

In ecological or organic food products, a rating of regular level 58%, high level 24% and low level 18%. The commercialization of ecofriendly products is regular (54 students), with the presence of transnational and national lines and brands and small local companies (these promote organic products from the area).

Table 3. Product level with ecolabel and octagon.

Category	Frequencies	Percentage
Very high	21	23%
High	33	35%
Regular	27	29%
Low	9	10%
Very low	3	3%
Total	**93**	**100%**

Source: Survey applied to university students Puno, 2019.

In products processed with an eco-label that includes the octagon, a rating of high 35%, fair 29%, very high 23% and low 10%. The octagon information is high (33 students) mainly in soft drinks, dairy products, snacks, chocolates, cookies, etc.

Table 4. Level of products with ecofriendly packaging

Category	Frequencies	Percentage
Very high	15	16%
High	26	28%
Regular	29	31%
Low	14	15%
Very low	9	10%
Total	**93**	**100%**

Source: Survey applied to university students Puno, 2019.

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In products with ecofriendly packaging, a rating of regular 31%, high 28%, high 16%, low 15% and very low 10%. In regular ecofriendly packaging (29 students), there are biodegradable packaging, eco boxes and traditional cardboard, glass and metal materials.

Table 5. Level of use of ecofriendly dispatch bags.

Category	Frequencies	Percentage
Very high	22	24%
High	37	40%
Regular	21	23%
Low	9	10%
Very low	4	4%
Total	93	100%

Source: Survey applied to university students Puno, 2019.

The use of ecofriendly dispatch bags, a rating of high 40%, very high 24%, regular 23% and very high 24%. The use of ecofriendly bags is high (37 students) presence of biodegradable and compostable, oxo-biodegradable bags. To buy single-use bags or choose to carry backpacks or personal bags.

Table 6. Level of waste, energy and water management.

Category	**Frequencies**	**Percentage**
Very high	18	19%
High	21	23%
Regular	28	30%
Low	20	22%
Very low	6	6%
Total	**93**	**100%**

Source: Survey applied to university students Puno, 2019.

In waste, energy and water management, a rating of regular 30%, good 23%, bad 22%, very good 19% and very bad 6%. Waste management is regular (28 students) in inorganic waste, hard and polyethylene plastic containers, cardboard, paper, tetra pack and glass, small solid waste collection modules. In organic waste left over from dishes, vegetables and meat. In energy management, use of saving lights and policies to reduce water consumption.

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Table 7. Eco friendly communication level

Category	Frequencies	Percentage
Very high	4	4%
High	19	20%
Regular	41	44%
Low	18	19%
Very low	11	12%
Total	**93**	**100%**

Source: Survey applied to university students Puno, 2019.

In ecofriendly communication, a rating of regular 44%, good 20%, bad 19% and very bad 12%. In regular environmental communication (41 students) in training in social and environmental responsibility, good customer service practices, website, etc.

Table 8. Level of ecofriendly infrastructure

Category	Frequencies	Percentage
Very high	22	24%
High	33	35%
Regular	31	33%
Low	7	8%
Very low	0	0%
Total	**93**	**100%**

Source: Survey applied to university students Puno, 2019.

In infrastructure, a good level rating 35%, regular 33% and very good 24%. In appearance of infrastructure it is good (33 students). Clean and hygienic environment, good lighting, attractive color and good distribution of product sections.

A table has been prepared consolidating the application of the management of ecofriendly practices in supermarkets:

Table 9. Consolidated summary of management of ecofriendly practices in supermarkets

Macro activities (1)	Micro processes and relationships (9)	Results (37%)
Ecofriendly practice management.	Eco products practices Eco packaging practices Plastic bag practices Eco Label Practice	Economic impact: Regular / Good: 41%
	Waste practices Energy practices Water practices	Social impact: Regular: 30%
	Communication practices	Environmental impact:

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Infrastructure practices	Regular / Good: 40%

Source: Own based on ecofriendly practices evaluation results, 2019.

In summary, the level of management of ecofriendly practices is regular in application of ecofriendly practices in supermarkets, these have an impact on the environment and responsible commitment of companies.

4. DISCUSSION

Of the results in practices, products, packaging and eco labels

Regarding the commercialization of ecofriendly products, it turned out that it is the hallmark of sustainable companies, sensitive to acquiring their products from ecofriendly suppliers and committed to the environment. In the results of the perception of university students, the presence of eco-friendly products is regular in 58%, foods with transnational brands are more widespread and preferred than those of local suppliers. Despite the consumption trend towards organic and healthy foods, the price is decisive in organic products, they still belong to a small segment of buyers sensitive to healthy eating and pay above-average prices, this is where suppliers have advantages local organic products. Making a comparison with the commercial strategies of organic products implemented by Lima supermarkets, there is still a supply gap as Storino (2013) points out. In supermarket stores in Lima, sales of organic, lead-free, CFC-free products stand out. fluoride carbonate); the products carry eco-labels that identify this information and are sensitive to certain interest groups.

In relation to the presence of packaging and ecofriendly labels, the results indicate a level of fair with 31% and good with 35% respectively; This is the product of the gradual adjustment with the commitment of the consumer and the protection of the environment of the supermarkets. Which stands out in Rivera (2019); PROMPERÚ (2016) environmentally friendly packaging, become the strategy to contribute to the sustainability of the environment and also fulfill the function of making it attractive to the consumer. On the other hand, the Peruvian standard establishes the mandatory use of frontal labeling on all processed and ultra-processed products that are high in sugar, sodium, saturated fat and that contain transgenic fats (Law No. 30021).

The results of the research on the use of biodegradable plastic bags by supermarkets, obtained a good level with 40%. The presence of the use for dispatch of biodegradable and

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compostable bags in supermarkets is favorable and consistent with a responsible business culture committed to sustainability and environmental awareness. Pachamama (2019) reaffirms it in commercial establishments such as Plaza Vea and others in the city of Puno, they stopped delivering single-use plastic bags for free because they are polluting and have a value of 10 cents. It is added when Green and DeMeo (2012) point out some plastic products, disposable containers are considered not to be friendly and harmful to the environment and ecosystem, and these are the so-called single-use products. Furthermore, in Peru, Law No. 30884 seeks to discourage the consumption of single-use plastics and disposable containers or containers via taxes on plastic bags.

Results in waste, energy and water

Regarding solid waste, the results of inorganic waste management show a regular level with 30% in supermarkets. It is similar to the results at the national level, on average of 25%, from Plaza Vea and Vivanda supermarkets (7.3% plastic, 24.6% tetra pack, 29.2% paper and 38.8% glass), thus reducing the environmental impact. (Plaza Vea, 2019) and it is considered that 70% corresponds to organic substances (Díaz and Zea, 2017). On the other hand, in organic waste, we must highlight Tottus open plaza Piura in which they constitute 65.2%, these degrade faster. (Seminario and Tineo, 2018). According to Eriksson (2015), in order not to waste organic waste, there is the donation of food, and if they are no longer fit for human consumption, they can choose to apply them for the generation of biogas.

Taking Jara (2014) into account, solid or inorganic waste is produced by unpacking merchandise with cardboard, paper and plastics that must be collected by a recycling company in order to reuse it as much as possible. In reference to solid waste in local supermarkets, the rescue of solid waste valuation is not a practice, rather they opt for outsourcing with recycling companies. At a national level, Storino (2013) points out that Peruvian supermarkets (Los Olivos) recycle plastic 33%, glass 67%, Tetra pack and paper 100%. Díaz and Zea (2017) adds in waste management, currently the Peruvian Supermarkets sell most of their waste to companies such as Kimberly Clark and Lindley so that they can make boxes, to dispatch their products or develop PET plastics.

In reference to energy and water management, local supermarkets have opted for the use of LED lights to achieve savings, and the implementation of ecofriendly refrigeration equipment, with which they are sensitive to policies to reduce their consumption and protect the environment.

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According to Díaz and Zea (2017), in Peruvian supermarkets regarding energy management, LED luminaires have been implemented in all stores to reduce internal consumption and in water management, saving valves have been implemented in stores, offices and production. For Erikson (2015), one way to save energy and money is to reduce the storage temperature so that the products are preserved and have a longer life time. Jara (2014) points out, fruits and vegetables whose temperature ranges between 5°C and 7°C are stored in cold chambers; and meat, dairy, cold cuts and cheeses the temperature is between 1°C and 4°C.

The results in communication and infrastructure

With regard to communication and image from the perception in university students, it is regular with 44%, it is limited and it is more oriented towards training in social responsibility, the environment, good customer service practices. The approach to corporate social responsibility for Díaz and Zea (2017) leads internally to develop responsible activities in waste management, energy, water and externally creates a good image for stakeholders, if they identify that they have environmental policies.

Finally, the management of environmental practices in local supermarkets, from the perception of university students, is classified as regular. The results are similar to that indicated by Storino (2013) "the environmental practices carried out by supermarkets, Wong, Metro, Plaza Vea and Tottus are still very basic, since these are simple, do not merit great investment, so the programs of caring for the environment are not reflected in greater benefits for the company" (p. 45).

5. CONCLUSIONS

The management of ecofriendly practices in supermarkets is comprehensively rated as regular with 37% according to the perception of university students.

The management of waste, energy and water (its disposal and recovery), this requires attention as centers of generation of new income, as well as improving standards of reduction in the consumption of energy and water in supermarkets.

The construction of an eco-friendly management model starts with the dimensioning of its empirical bases in: Products, packaging and eco-labels. Waste, energy and water. Communication and environmental infrastructure. This must respond to the sustainability with social and environmental commitment of supermarkets

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6. BIBLIOGRAPHIC REFERENCES

Austermuhle, S. (2002). Sostenibilidad y ecoeficiencia en la empresa moderna. Perú: UPC.

Bohn, E, León, A. (2015). Diseño de packaging ecológico para producto en polvo soluble. Paliatea, 11(20). Pp.67-86.

Calomarde, J. (2000). Marketing ecológico. Editorial Pirámide, España

Chanduví, R. G. (2006) compostaje y vermicompostaje piramidal. Piura Perú. Recuperado en julio del 2017

Chullo, O. (2017) Tesis: Impacto de los supermercados en el mercado de abastos de Arequipa. Caso: Mercado San Camilo, 2017. Arequipa: Universidad Nacional de San Agustín.

Conama, (2010). Comunicación ambiental 2.0. Documento de trabajo de Congreso nacional sobre medio Ambiente, de fecha 28 de noviembre al 1 de diciembre 2016. Madrid.

Díaz, J. y Zea, S. (2017) Tesis: Responsabilidad social empresarial en el sector retail. análisis de una empresa local a través del benchmarking de 3 empresas extranjeras en buenas prácticas de gestión medio ambiental durante el periodo 2012 – 2016. Caso: Supermercados Peruanos S.A. Lima. Universidad Peruana de Ciencias A.

Erikson, M. (2015). Prevention and management with focus on reduced waste for reduced carbon foot print. Recuperado de http://pub.epsilon.slu.se/12756/1/Eriksson_m_151029.pdf

Esap (2005) Programa de cultura ambiental (documento de trabajo). Escuela superior de administración pública. Recuperado de www.esap.edu.pe.co-portal-index-php.

Gestión (19 de septiembre 2017). Perú en el "top ten" de países con más atractivo para invertir en retail. Recuperado de http://www.colliers.com/media/files/latam/perú/gestion_top10peruretail.pdf.

Green, K. & DeMeo, E. (2012) The crusade against plastic bags. Pacific Research Institue. Recuperado de https://www.Pacificresearch.org/the-crusade- against-plastic-bags/

This work is under a Creative Commons Attribution 4.0 international license.

Jara, G. (2014) Proyecto de Supermercado "El Pueblo". Evaluación de impacto medioambiental, Paraguay.

Ley N° 27314. Ley general de residuos sólidos. Perú. Recuperado en mayo del 2017 de http://www.vivienda.gob.pe/grd/normas/normasestadogrd/01%20ley%20grd%20estado/01%20ley%20n%c2%bo%2027314%20%20ley%20general%20de%20residuos%20solidos.pdf

Ley N° 30884. Ley que regula el plástico de un solo uso y los recipientes o envases descartables. Recuperado de https://spijweb.minju.gob.pe/wpcontent/uploads/2018/12/19/ley-30884.pdf

Ley N° 30021. Ley de promoción de la alimentación saludable para niños, niñas y adolescentes. Perú. Diario el Peruano del 17 de mayo del 2013. Recuperado. www.leyes.congreso.gob.pe.documento-leyes-30021.

Minam (09 julio 2019) Minam incentiva uso de envases alternativos para empacar alimentos.https://www.gob.pe/institución/minam/noticias/45529-minam-incentiva- uso-de-envases-alternativos-para-empacar-alimentos.

Molina, N. I. (2011) Medidas operativas para la ecoeficiencia. Recuperado de http://datateca.unad,edu.co/contenidos/358049/AVA/Entorno_de_conocimiento/Contenido_del_Curso/Modulo_Medidas_Operativas_para_la_Ecoeficiencia_Presentacion_pdf

Olivo, C.A. (2013). Medidas de eco eficiencia para el sector público. Actualidad Gubernamental.

Pachamama. (03 agosto 2019)) En Plaza Vea de Puno se vende la bolsa de plástica de un solo uso a 10 céntimos. (Ley 30884 del plástico). https://www.pachamama.org/regional/103-puno/2266-enPlaza-vea-de-puno-se- vende-la-bolsa-de-plástica-de-un-solo-uso-a-10-éntimos.

Patarroyo, C. (2019) Productos eco amigables para la comercialización de alimentos y bebidas. Informe. Bogotá: Universidad Santo Tomás.

Plaza Vea (2019). Sostenibilidad y responsabilidad social. Pasión por el planeta. Recuperado de https://www.plazavea.com.pe

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Prom Perú. (2006) Informe especializado: Tendencias en envases para la industria alimentaria. Perú: Servicios al exportador, departamento de inteligencia de mercados.

Rivera, C., Conteras, F., Ariza, W., Bonilla, S., & Cruz, A. (2019). Los empaques biodegradables, una respuesta a la consciencia ambiental de los consumidores. Realidad empresarial, (7), 2-8. https://doi.org/105377/reuca.vol7.7830.

Secretaría de Ambiente y Desarrollo Sustentable (2005). Estrategia Nacional para la gestión Integral de Residuos Sólidos Urbanos. Buenos Aires. Argentina

Sedesol (2001) Manual para el establecimiento de un programa regional de reciclaje. Secretaria de desarrollo social México D.F.

Seminario, R. y Tineo, A. (2018) gestión de residuos sólidos en un hipermercado local. Tesis. Perú: Universidad de Piura

Storino, B. (2013) Falencias y oportunidades de gestión ambiental en los supermercados Wong, Metro, Plaza Vea y Tottus. Revista de Ciencias empresariales de la Universidad San Martín de Porres, Julio-diciembre. 4(2) Pp. 37-47.

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