Estudio de factibilidad para elaborar barras energéticas con insumos andinos

Feasibility study to develop energy bars with Andean supplies

Estudo de viabilidade para desenvolver barras energéticas com entradas andinos

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Resumen

El presente trabajo tiene como objetivo realizar un estudio de factibilidad para elaborar barras energéticas con insumos combinados propios de la sierra ecuatoriana en la ciudad de Ambato, en Ecuador. Para ello se ejecutó un diagnóstico a través del sistema de marco lógico, posteriormente se realizaron estudios de mercado, técnico-administrativos y económico-financieros con el propósito de determinar la factibilidad y viabilidad de esta idea de negocio a través de la evaluación económica y financiera. Además, con el marco lógico se definieron los problemas e involucrados directos e indirectos. Mediante el análisis de mercado se determinó una demanda potencial insatisfecha, por los altos índices de trastornos digestivos en la sociedad que provocan bajo rendimiento en el desarrollo de actividades cotidianas. En el estudio técnico-administrativo se destaca el marco legal de la empresa y la ingeniería del proyecto, estableciendo los insumos,

materia prima, materiales directos e indirectos, servicios básicos, maquinaria, equipos, herramientas y mano de obra indispensable, además de la localización, tamaño óptimo y los procesos de producción. La fase económica-financiera se centró en encontrar la inversión inicial, determinar los ingresos brutos y costos, reflejados en el estado de resultados y el balance general. Finalmente, la evaluación económica y financiera mostró la factibilidad y viabilidad del proyecto mediante evaluadores a futuro.

Palabras clave: Estudio de factibilidad, marco lógico, barras energéticas, estudio técnico-administrativo, estudio económico-financiero.

Abstract

The present work aims to carry out a feasibility study to develop energy bars with combined supplies of the Ecuadorian sierra in the city of Ambato, Ecuador. This was a diagnosis through the system of logical framework, later studies were conducted of market, administrative and financial for the purpose of determining the feasibility and viability of this idea of business through the economic and financial evaluation. In addition, with the logical framework were defined problems and involved direct and indirect. Through the analysis of market determined an unmet potential demand, by high rates of digestive disorders in society that lead to low efficiency in the development of activities of daily living. The technical and administrative study highlights the legal framework of the company and the engineering of the project, establishing supplies, raw material, direct and indirect materials, basic services, machinery, equipment, tools and essential labor, in addition to the location, optimal size and production processes. The financial phase focused on finding the initial investment, determine the revenue and costs, reflected in the statement of income and balance sheet. Finally, economic and financial evaluation showed the feasibility and viability of the project by evaluators in the future.

Key words: feasibility study, logical framework, energy bars, study technical and administrative, economic and financial analysis.

Resumo

Este trabalho tem como objetivo realizar um estudo de viabilidade para desenvolver bares própria energia com entradas combinadas da montanha equatoriana, na cidade de Ambato, Equador. Isso requer um diagnóstico através do sistema de quadro lógico foi implementado posteriormente pesquisa de mercado, técnica e administrativa e econômico-financeira foram realizados a fim de determinar a viabilidade e viabilidade desta ideia de negócio através da avaliação económica e financeira . Além disso, o quadro lógico e os problemas envolvidos direta e indireta definido. Ao analisar mercado potencial demanda não atendida foi determinado pelas altas taxas de distúrbios digestivos na sociedade que causam o mau desempenho no desenvolvimento das atividades diárias. No estudo técnico e administrativo do quadro jurídico da empresa e projeto de engenharia está, definindo insumos, matérias-primas, materiais diretos e indiretos, utilitários, máquinas, equipamentos, ferramentas e trabalho indispensável de trabalho, além da localização , tamanho e produção de processos óptimos. A fase econômico-financeiro focado em encontrar o investimento inicial, determinar a renda bruta e despesas reflecte-se na declaração de renda e balanço. Finalmente, a avaliação económica e financeira demonstrou a viabilidade e viabilidade do projeto por avaliadores futuro.

Palavras-chave: Estudo de viabilidade, quadro lógico, barras energéticas, estudo técnico e administrativo, estudo económico-financeiro.

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Introduction

Currently people seek accelerated style of healthy living in your lifestyle, reason why fast foods and processed products are a choice by many, although it is not healthy. In addition, the food industry in the Ecuador makes a great contribution to the industrial and manufacturing sector, as the production of food and drinks was 7.70% of gross added value within the Gross Domestic Product (GDP) in the year 2014 and 54.50% manufacturing, as specified by the INEC by its name in Spanish (National Institute of statistics and censuses, 2012).

It is important to note that, in reference to the National Institute of Statistics and Censuses and to the Ministry of Public Health (2013), 6.4% of Ecuadorians consume proteins in an inappropriate way, of which 9.5% of citizens in the urban sierra and 10.9% of the rural sierra continue this habit. The consumption of carbohydrates is 22.8% and fats of 8.2% in the saw urban in the rural highlands are of 39.2% and 3.9%. This indicates that the high consumption of carbohydrates and fat is harmful to health. With these figures, draw up energy bars with a balanced proportion of vitamins, minerals, carbohydrates and fats, is essential to satisfy a growing target market before the eventual increase in daily activities.

In this work it is important to consider several aspects, such as: the term socio-productive project that focuses on promoting the development of activities that generate goods and services useful for the community, and to generate productive networks to meet the needs of the society (Iñigo Carrión and Losune Berastegui, 2010); (Martínez Montes and Pellicer Armiñana, 2011); (Zilvetty Torrico, 2013).

The logical framework, EML for its acronym in English, is a very useful tool to develop a socio-productive project (De la Torre, 2010); (Martínez and Pellicer, 2011). These authors note it as an instrument that defines problems and needs of an environment, through a structure of planning to meet objectives and achieve results in a logical and systematic way. Through the logical framework, the market study allows to quantify the supply and demand, prices and the marketing process, to check the real possibility of penetration of a product, good or service in the market today (Baca Urbina, 2010). In this way gets the unsatisfied demand of the segment to analyze.

Likewise, Limas (2012) specifies that the administrative technical study contemplates the necessary technical aspects in the efficient use of the resources available for the production of a desired good or service, in which the determination of the optimal size of the place of production , The location, facilities and organization required.

Another important aspect is the financial and economic evaluation, which aims to quantify and evaluate the project with established criteria, so that the decision to execute it is based on reliable indicators (Inter-American Development Bank, 2001). Similarly, these methods are complex, so the balance of this report discusses these economic and financial values, as well as their measurement techniques (Cubbage, Financiera and Frey, 2011, p.7). For this reason, this stage is

indispensable within the process of creating a company to determine the feasibility of the same through present and future indicators, as shown below.

Based on these antecedents, the present project has the objective of the feasibility study to elaborate energy bars with combined inputs of the Ecuadorian sierra in the city of Ambato through different studies: logical framework, market, administrative, economic technician Financial and economic evaluation. An alternative is proposed to the current problematic on the alimentary habits, detected by the INEC. In the development section the information search methodology is specified and the results are the application of the logical framework, the market study, administrative technical study, economic study, financial economic evaluation and, finally, the conclusions of this work of investigation.

Development

With the help of the Perish technology tool (Harzing, 2007), bibliographical searches were carried out in Google Academic and Microsoft Academic Search to collect information from articles with a larger number of citations on the study object: the development of energy bars with combined, enriched and Fortified for the benefit of health. We also considered the recommendations for state-of-the-art accuracy (González Alonso and Pérez González, 2014).

A structured survey with thirteen closed and multiple-choice questions was also applied, focusing on 379 people as a projected sample of 31 936 people, including mid-level technicians and professionals, managers, managers, workers, salesmen, professionals, Scientists, intellectuals, administrative staff, technicians and mid-level professionals, directors and managers of the city of Ambato-Tungurahua.

This project was carried out through a systematic process that began with the analysis of the problem, the involved ones and the objectives. The market study established the calculation of the sample, analysis and interpretation of the survey, using Excel 2013, together with the analysis of demand, supply, potential demand, price and marketing . The administrative technical study detailed the size and optimum location, the engineering of the project and the distribution of physical spaces. In the economic and financial study, gross income, costs and initial investment were determined. Finally, the financial evaluation was carried out in the future, as detailed below.

Results

The present research work has five defined stages:

Logic frame

Autonomous research was carried out from the bibliographic sources to find the groups involved, which were: suppliers for the increase of their sales, customers and consumers when purchasing quality products, SRI and government for the taxes that would generate with their elaboration , among others.

The essential problem, its causes and consequences, were then determined, which were reflected in a problem tree; This became a goal tree with means and ends. Subsequently, an analysis of objectives was carried out that led to three alternative solutions, of which the most relevant corroborated the feasibility of developing energy bars with combined, enriched and fortified foods for the benefit of health through the structuring of a socio-productive project In the city of Ambato in Tungurahua.

Market study

At this stage market segmentation took place, for which updated data from the National Institute of Statistics and Censuses (2010) were considered. They found that in the Ecuadorian province of Tungurahua there were 504 483 people and in the Canton of Ambato 178 538 people, of which 107 123 belong to the EAP, ie the Economically Active Population; On the other hand, there were 29 586 middle-level people. From there, the target market was projected for the year 2015 with 31 936 people, including technicians, mid-level professionals, managers, managers, service workers, salesmen, scientists, intellectuals and administrative staff. The sample was 379 people as target market, who were asked to respond to a structured survey with 12 closed and multiple selection questions.

The survey yielded the following results:

Of 379 people, representing 100% of the target market, 66.49% (ie 21 291 people) would be willing to try a new brand of natural energy bars that provide them with energy and vitamins to improve their performance in daily activities. Of these, 151 people would buy between 10 and 20 bars per month, equivalent to 39.84% of the target market, at a price ranging from $ 2.00 to $

3.00 per bar, corresponding to 59.89% of the target market; Of these, 59.89% prefer to have protein, calories and vitamins.

An important aspect to consider is the nutritional values, since 33.07% of the respondents noticed it first, followed by the composition of the product with 26.98% of people. Also, when consuming any type of food, 91.27% are thinking about health.

On the other hand, 75.20% (24 016 people) said that it does know a brand that produces energy bars, so it is fundamental to formulate marketing strategies to promote the new brand. It should be noted that 39.84% would like to find this product in places where sports are done and 20.05% in grocery stores. Similarly, 62.43% would prefer to obtain information about the product through television, 19.31% by radio and 48.94% said they would like to receive discounts on their purchases.

The potential demand was found unsatisfied from the calculation of the data of the survey, which are subtracted as shown in the following table.

Table 1. Potential unsatisfied demand

AÑO	DEMANDA EN PRODUCTOS	-	OFERTA EN PRODUCTOS	=	DPI
2015	5 906 196		2 952 912		2 953 284
2016	5 997 151		2 998 387		2 998 764
2017	6 089 507		3 044 562		3 044 945
2018	6 183 285		3 091 448		3 091 835
2019	6 278 508		3 139 056		3 139 452
2020	6 375 197		3 187 398		3 187 799

Fuente: elaboración propia

The calculation of the demand was made from the 21 291 people who stated that they were willing to acquire and test a new brand of energy bars with a frequency of consumption. Once with this data, we proceeded to calculate with projections of the business growth rate, which stands at 1.54%. This value was established from the National Institute of Statistics and Censuses (2010); Subsequently merged with the consumption frequency in the following table, which is also projected until the year 2020.

Table 2. Calculation of demand based on frequency of consumption

	* %	= DEMANDA	PROMEDIO DE CONSUMO	* MESES	= CONSUMO MENSUAL
21291	39.68	8 448	10 a 20	12	1 520 640
	30.69	6 534	21 a 30	12	2 038 608
	29.63	6 309	31 o más	12	2 346 948
	Total				**5 906 196**

Fuente: elaboración propia

Table 3. Projected product demand

AÑO	DEMANDA EN SERVICIOS	T.C.E
2015	**5 906 196**	1.54 %
2016	5 997 151	90 955
2017	6 089 508	92 356
2018	6 183 286	93 778
2019	6 278 509	95 223
2020	6 375 198	96 689

Fuente: elaboración propia

The procedure is similar in the calculation of supply, where it was taken as a reference to the 10 645 people who do not wish to acquire or try a new brand of energy bars. Likewise, it is projected until the year 2020.

Table 4. Product offer

	* %	= DEMANDA	PROMEDIO DE CONSUMO	* MESES	= CONSUMO MENSUAL
10 645	39.68	4 224	10 a 20	12	760 320
	30.69	3 267	21 a 30	12	1 019 304
	29.63	3 154	31 o más	12	1 173 288
	Total				**2 952 912**

Fuente: elaboración propia

Table 5. Projected offer in services

AÑO	OFERTA EN PRODUCTOS	T.C.E
2015	**2 952 912**	1.54 %
2016	2 998 387	45 475
2017	3 044 562	46 175
2018	3 091 448	46 886
2019	3 139 057	47 608
2020	3 187 398	48 341

Fuente: elaboración propia

For the projection of the price was used the percentage of inflation of the month of November 2015 that is 3.40%, according to the Central Bank of Ecuador (2015) and the price range that the people surveyed are willing to pay. It is pertinent to indicate that this range is between $ 2.00 and $ 3.00, so we applied the sample mean and as a result the price for the year 2015 is $ 2.50 projected until 2020.

Table 6. Projection of the price until 2020

AÑO	PRECIO	INFLACIÓN
2015	**2.50**	3.40 %
2016	2.59	0.09
2017	2.67	0.09
2018	2.76	0.09
2019	2.86	0.09
2020	2.95	0.10

Fuente: elaboración propia

Technical administrative study

In this phase, the optimal size of the project and the unsatisfied potential demand (IPD), previously obtained in the market study, were determined. Only 15% is taken for the first year,

with an increase of 1% for the following years, since it will not be able to cover the demand as a whole and there should always be a margin of demand to extend this new product in the coming years.

Table 7. Real DPI Calculation

AÑO	DPI	%	DPI REAL 75 %
2015	**2 953 284**	**15 %**	**442 993**
2016	2 998 764	16 %	479 802
2017	3 044 945	17 %	517 641
2018	3 091 835	18 %	556 530
2019	3 139 452	19 %	596 496
2020	3 139 452	20 %	637 560

Fuente: elaboración propia

In order to determine the location of the energy bar company, which will be called "MULTIPOWER", an Optimum Location Matrix was created with which the most appropriate location was obtained at Av. Pedro Vásconez and César Augusto Salazar, Sector Izamba, City of Ambato, as shown below:

Table 8. Optimum project location matrix

FACTORES RELEVANTES		PESO PONDERADO	IZAMBA		PENÍNSULA		HUACHI GRANDE	
1	**Permisos**	20	3	60	2	40	2	40
2	**Proveedores**	15	3	45	2	30	2	30
3	**Mano de obra disponible**	10	3	30	2	20	1	10
4	**Competencia existente**	5	1	5	1	5	1	5
5	**Servicios básicos**	10	3	30	2	20	2	20
6	**Infraestructura básica**	10	2	20	2	20	3	30
7	**Disponibilidad del terreno**	5	3	15	2	10	2	10
8	**Seguridad**	5	3	15	1	5	2	10
9	**Vías de acceso**	10	3	30	2	20	2	20
10	**Costo de arrendamiento**	10	3	30	2	20	1	10
	∑	**100**	**280**		**210**		**185**	

Fuente: elaboración propia

The distribution of physical spaces of the company MultiPower will be carried out by products, where it will consist of five fundamental elements: the order processing, which takes the consumer information to the production plant in order to produce products according to the needs of the buyer; Inventory control, which controls the movement, input and output of inputs or outputs to maintain a record in production or sales flows; Transportation, which mobilizes the inputs or products for the purpose of production, input, sale, distribution or final delivery; The management of materials that gives the specific treatment to the productive inputs; Storage, which stores the inputs or products for their conservation in order to sell or take advantage in the future. This form of physical distribution presents a production in batches to the being a single product that is commercialized for its later sale to the objective market. As it is a new company in the field of business, each predecessor operation will be located close to it to save the maximum space.

Within the requirements that the company needs to begin its operation, the needs of inputs, raw materials, indirect materials, machinery, computer equipment, furniture and appliances, and qualified direct and indirect labor were established, backed up with their respective proformas Determine the places in which it will be acquired and its quantity in physical units. Something similar happened with the flowchart and the block diagram by process of elaboration for the energetic bars.

Economic study

The establishment of the gross income from the year 2015 to 2020 was executed based on the Real IPR by the Price.

Table 9. Gross income

AÑO	DPI REAL	PRECIO	INGRESOS BRUTOS
2015	442 993	2.50	1 107 481.50
2016	479 802	2.59	1 240 288.79
2017	517 641	2.67	1 383 596.52
2018	556 530	2.76	1 538 120.78
2019	596 496	2.86	1 704 627.98
2020	637 560	2.95	1 883 925.08

Fuente: elaboración propia

We also determined the monetary units of production, administrative and financial costs previously analyzed in the technical administrative study.

It should be mentioned that the initial investment is $ 198 897.61 with 50% financing in own contribution and 50% through a financial institution. On the page of the CFN National Financial Corporation was calculated with a capital of $ 100 000 approximate value, at 1 year and with an interest rate of 9%. The TMAR1 and TMAR2 are then specified.

Figure 1. TMAR 1

TMAR 1 = 0.0340 + 0.1183
TMAR 1 = 0.1522
TMAR 1 = 15.22%

Fuente: elaboración propia.

The minimum acceptable rate of return for shareholders is 15.22%, a percentage higher than the CFN interest rate, which finances a portion of the initial investment required, making it attractive to invest in this project.

Figure 2. TMAR 2

TMAR 2 = 0.0340 + (0.1183* 2)
TMAR 2 = 0.1862
TMAR 2 = 18.62 %

Fuente: elaboración propia

Figure 2 specifies the calculation of TMAR 2, where the minimum acceptable rate of return for shareholders will be 18.62%.

All of these data are reflected in the Balance Sheet, which generated total assets: $ 220,095.34, liabilities: $ 14,154.03, and total liabilities and equity: $ 220,095.34. In turn, they were reflected in the Income Statement, where net cash flows were obtained of $ 406,689.49 for 2016; $ 479

493.56 for the year 2017; $ 558 543.33 for the year 2018; $ 644 278.36 for the year 2019 and $ 737 169.64 for the year 2020.

Financial Economic Evaluation

Finally, at this stage, the evaluators were prepared in the future: VAN, TIR, R C / B and PRI, which are shown below:

Figure 3. Net Present Value (NPV)

$$\boldsymbol{VAN} = -Io + \frac{FNE_1}{(1+i)^1} + \frac{FNE_2}{(1+i)^2} + \frac{FNE_3}{(1+i)^3} + \frac{FNE_4}{(1+i)^4} + \frac{FNE_5}{(1+i)^5}$$

$$\boldsymbol{VAN} = -198\,897.61 + \frac{406\,689.49}{(1+0.12)^1} + \frac{497\,493.56}{(1+0.12)^2} + \frac{558\,543.33}{(1+0.12)^3} + \frac{644\,278.36}{(1+0.12)^4} + \frac{737\,169.64}{(1+0.12)^5}$$

$$\boldsymbol{VAN} = \$1\ \ 763\,013.32$$

Fuente: elaboración propia

After bringing in cash flows and discounting the initial investment, a yield of $ 1 763 013.32 is realized over the project's useful life. When applying the Decision Rule you get: VAN ≥ 0.

Figure 4. Internal Rate of Return (IRR)

$$\boldsymbol{TIR} = \text{TMAR 1} + (\text{TMAR 2} - \text{TMAR 1}) * \frac{\text{VAN 1}}{(\text{VAN 1} - \text{VAN 2})}$$

$$\boldsymbol{TIR} = 0.12 + (0.14 - 0.12) * \frac{1{,}763{,}013.32}{(1\,763\,013.32 - 1\,674\,438.68)}$$

$$\boldsymbol{TIR} = 0.46120$$

$$\boldsymbol{TIR} = 46\ \%$$

Fuente: elaboración propia

MultiPower will have a 46% rate of return over the 5-year project life. And when applying the Decision Rule you get: IRR ≥ Tmar.

Figure 5. Cost benefit relation

$$\mathbf{RC/B} = \frac{\Sigma\, Costos\ totales}{\Sigma\, Ingresos\ brutos}$$

$$\mathbf{RC/B} = \frac{6\,974\,115.56}{2\,654\,171.53}$$

$$\frac{\mathbf{RC}}{\mathbf{B}} = \$\ 2.63$$

Fuente: elaboración propia.

For every dollar of project cost we get $ 2.63 cents of profit. Therefore, we see the proportionality relation with a high gain value. With the Decision Rule you get: RC/B ≥0.

Figure 6. Average recovery period

$$\boldsymbol{PRI} = \frac{Io}{\frac{\Sigma\, FNE}{\#\ años}}$$

$$\boldsymbol{PRI} = \frac{200{,}941.31}{\frac{2{,}826{,}174.38}{5}}$$

$$\boldsymbol{PRI} = \ 0.36$$

***PRI*=** 4 meses, 3 días

Fuente: elaboración propia.

Once the calculation has been made it can be shown that the investment will be recovered in 4 months and 3 days, so it will be recovered in a short period. With Decision Rule: PIR ≤ Lifetime.

Multipower has the following scenarios: pessimistic (20% decrease), optimistic (20% increase) and the real scenario (2016 income statement). For the calculations, the values of the income statement were taken.

Table 10. Scenarios

	PESIMISTA	OPTIMISTA	REALISTA
AÑO 2016	$1 107 481.50	$ 1 107 481.50	$ 1 107 481.50
AÑO 2017	$ 885 985.20	$ 1 328 977.80	$ 1 240 288.79
AÑO 2018	$ 708 788.16	$ 1 594 773.36	$ 1 383 596.52
AÑO 2019	$ 567 030.53	$ 1 913 728.03	$ 1 704 627.98
AÑO 2020	$ 453 624.42	$ 2 296 473.64	$ 196 750.59

Fuente: elaboración propia

CONCLUSIONS

Based on the results obtained, and through the logical framework and market studies, technical administrative and financial economics, it is feasible to develop energetic bars with combined, enriched and fortified foods for the benefit of health, which will allow Meet the needs of a growing target market by contributing positively to people's nutrition and improving digestive disorders.

When the economic and financial evaluation of the research was developed it was determined that the net present value is greater than or equal to zero, the internal rate of return on investment is greater than the discount rate that is offered to potential investors, as Detail in the economic study using the TMAR (Acceptable Minimum Rate of Performance), while the cost / benefit ratio is greater than or equal to zero, which generates a significant gain. Finally the period of recovery of the investment is four months and three days, which is a short period to recover the initial investment and favorable to the company.

Bibliography

Anderson, R. E. (1995). Administración de ventas. McGraw-Hill.

Ancín, J. M. (2012). El plan estratégico en la práctica. México: Alfaomega.

Antonio, J. (2012). El mapa de procesos y análisis de procesos clave. España: GADEX.

Baca Urbina, G. (2010). *Evaluación de Proyectos*, sexta edición, México: McGraw Hill.

Banco Central del Ecuador. (2015). Inflación 2015. Recuperado 31 de julio de 2016, a partir de https://www.bce.fin.ec/

Burgwal, G., y Cuéllar, J. (2010). Planificación estratégica y operativa. Ecuador: Impresiones Digitales.

Caprioti, P. (2013). Planificación estratégica de la imagen corporativa. España: Editorial Ariel.

Cervera, J. (2002). La transición a las nuevas ISO 9000:2000 y su implantación: un plan sencillo y práctico con ejemplos. Ediciones Díaz de Santos: Madrid.

Cubbage, Financiera y Frey. (2011). Guía para la evaluación económica y financiera de proyectos forestales comunitarios en México. México: Banco Mundial.

De la Torre, J. (2010). Evaluación de proyectos de inversión. México: Pearson Educación.

Espinoza, S. F. (2010). Los proyectos de inversión. Editorial Tecnológica de CR.

Etienne, T. (2010). Financiamiento y Administración de proyectos de Desarrollo, séptima edición, Colombia: Editores Ltda.

Fontaine, G. (2003). El Precio del petróleo. Conflictos socio-ambientales y gobernabilidad en la región amazónica. Flacso-Sede Ecuador.

Gallardo, J. R. (2012). Administración Estratégica. México: Alfa omega.

Harzing (2007). Perish. Recuperado 8 de marzo de 2016, a partir de http://www.harzing.com/resources/publish-or-perish/windows

Herrera, J., Alizaga, R., Guevara, E., y Jiménez, V. (2006). Germinación y crecimiento de la planta. Costa Rica: Editorial Universidad de Costa Rica.

Himmelblau, D., y Bischoff, K. (2004). Análisis y simulación de procesos. España: Reverté.

Ibarra, J. G. (2001). Análisis de la oferta de turismo cultural en España. Estudios turísticos (150), pp. 15-40.

Instituto Nacional de Estadística y Censos (2010). Censo Nacional Económico. Recuperado a partir de http://www.ecuadorencifras.gob.ec/censo-nacional-economico/

Instituto Nacional de Estadística y Censos (2012). Infoeconomía: Análisis sectoriales. Recuperado a partir de http://www.ecuadorencifras.gob.ec/wp-content/descargas/Infoconomia/infoe.pdf

Instituto Nacional de Estadística y Censos, y Ministerio de Salud Pública (2013). Encuesta Nacional de Salud y Nutrición ENSANUT. Recuperado a partir de http://www.ecuadorencifras.gob.ec/documentos/web-inec/Estadisticas_Sociales/ENSANUT/Presentacion%20de%20los%20principales%20%20resultados%20ENSANUT.pdf

Iñigo Carrión, y Losune Berasteguí (2010). Guía para la elaboración de proyectos. México.

Lerma, A., y Bárcena, S. (2012). Planeación estratégica por áreas funcionales. México: Alfa omega.

Limas, J. (2012). Marketing Empresarial: Dirección como estrategia competitiva. Colombia, Bogotá: Ediciones de la U.

Malhotra, N. K. (2004). Investigación de mercados, un enfoque aplicado. México: Pearson Educación.

Martínez Montes, G., y Pellicer Armiñana, E. (2011). Organización y Gestión de Proyectos y Obras. Madrid: McGraw- Hill.

Martínez Egas, A. J. (2012). Estudio de factibilidad para la creación de una empresa productora y comercializadora de una barra energética a base de frutos secos con soya para el mercado de la Ciudad de Quito. Quito: Universidad Politécnica Salesiana sede Quito.

Muñoz López, M. P. (2010). Experimentando el flujograma. Aplicación del flujograma a una pyme y resultados de la experiencia. Bogotá: Universidad Militar Nueva Granada.

Núñez, J. M. (2013). Diagramas de bloques. Nuevo León: Universidad Autónoma de Nuevo León.

Sapag, N., Sapag, R., y Sapag, J. M. (2012). Preparación y evaluación de Proyectos. Sexta edición. México: Editorial McGraw Hill Interamericana.

Zilvetty Torrico, M. (2013). Guía para elaborar proyectos socio-productivos, segunda edición, Bolivia: Educa.