



**TECHNICAL UNIVERSITY NORTH
FACULTY OF ENGINEERING IN APPLIED
SCIENCE**

TEXTILE ENGINEERING CAREER

TECHNICAL REPORT

NAME:

**"FEASIBILITY STUDY, INSTALLATION
AND COMMISSIONING OF A SMALL
BUSINESS DEDICATED TO THE
PROVISION OF MANUFACTURE OF
MEN'S PAJAMAS WITH JERSEY IN
CANTON ANTONIO ANTE"**

PRIOR TO OBTAINING TITLE textile
engineer

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EXECUTIVE SUMMARY

This feasibility study was carried out with the intention of establishing the possibility of creating a service business making pajamas for men Atuntaqui City in the province of Imbabura. Atuntaqui Being one of the most renowned cities in making garments, we are to exploit all the resources available to the city and surrounding areas to achieve socio-economic development based on the service of garment. In the initial part of this instance ran a diagnostic to determine if there are suitable agents, including rules and legal bases to support the viability of the project, in the second instance we investigate the theoretical foundations needed to develop the project to determine the Project feasibility is determined, the respective market study which investigates the existing supply and demand to determine the unmet demand and to cover a percentage of this demand, and projections are made due to know in advance that a market outlook will attend, all this is done through field research with the implementation of business surveys of manufacturing and marketing of garments Atuntaqui city, in order to obtain information on the activity of pajamas preparation service for men, with a positive response was obtained in the study of market, financial study and proceeds to be forecast costs and profitability of the project and that there is great competition, if the purpose of this company is to expand the supply tailoring service for men pajama, promote textile business for the information of the population nationally and internationally, in an environment that seeks to conserve natural resources as it suggests a sustainable economy.

PRESENTATION

The garment manufacturing is a growing activity in the province of Imbabura and Ecuador and being Atuntaqui one of the most prosperous and industrialized cities of the province of Imbabura and the country as it has technological resources, because their inhabitants were devoted to this type of

industry for many years, with the creation of this company will contribute to employment generation advantage trained human resources of the place, so that we present the following project to create a services company making pajamas for men in the city of Atuntaqui.

MARKET RESEARCH

Includes market research where research is conducted supply, demand, unmet demand, price, product, these data are obtained from the application of surveys employers of industries manufacture and marketing of clothing, with data obtained in this study proceeds to make projections for the future and determine the feasibility of competence and permanence. Atuntaqui has become a permanent marketing center is visited by about 284,000 tourists a year, mainly from the city of Quito and surrounding provinces, it is a shopping tourism. Market have also been opened in the fairs held in Tulcan, Quito and Ambato. The average monthly sales of apparel sector according to the Chamber of Commerce is \$ 15,185,750.00. Currently there are 500 textile companies between small, medium and large Atuntaqui City and is in the canton with the lowest unemployment rate in the province of Imbabura and one of the lowest in the Ecuador.

THE PRODUCT.

Pajamas consist of two pieces: one for the upper body, generally a jacket or t-shirt and one for the lower body, usually a trousers or shorts of simple cut.

Tipo de producto:	Pijama para caballero	Tipo de la fuente:	Servicio de Confección
Material:	Pes/Co	Tipo de la tela:	Punto y Plano
Género:	Hombres	Categoría de edad:	Adultos y niños
Técnicas:	Varios	Lugar del origen:	Atuntaqui-Ecuador
Marca:	"Tu Marca"	Color:	Todos los colores diseñan e imprimen modelos y tamaños
Región étnica:	Todas las existentes en Ecuador		

Elaborado Por: Evelyn Tumbaco

POPULATION AND SAMPLE.

According to these data, we can say that 50 textile companies engaged in the marketing of men's pajamas and, being small the world to study, the sample of textile companies manufacture and marketing of men's pajamas, will be the same universe therefore it is not necessary to apply the formula to the sample.

ANALYSIS SECTOR SURVEY TO INTERFERE IN THE DEVELOPMENT OR MARKETING OF MEN'S PAJAMAS. DEMAND.

Not having difficulties consumption historical data to develop the consumption time series pajamas for men, over a period of at least five years. So, in this particular case was raised to 50 companies that make and sell clothing, a question: How many men's pajamas request will make a month? (question five) this issue we will have to refer to the results of the responses made by the entrepreneurs of the manufacturing industries and marketers of men's pajamas, the survey that we have applied.

Pajamas Demand companies

RESPUESTA	FRECUEN CIA	PORCENT AJE
1.000 pijamas	12	24%
1.500 pijamas	6	12%
2.000 pijamas	7	14%
3.000 pijamas o más	6	12%
Ninguna	19	38%
TOTAL	50	100%

Demand Projection
According to these results and performing the summation of these responses, resulting in the current demand is 58,000 per month pajamas for men, and 638,000 annually is pajamas.

If there is a population growth nationwide average of 2.3% per year, the growth chart is applying constant demand would be:

Demand Projection Pajamas for Men

PROYECCIÓN DE LA DEMANDA DE PIJAMAS PARA CABALLEROS	
AÑOS	NÚMERO DE PIJAMAS
2012	638.000
2013	652.674
2014	667.686
2015	683.042
2016	698.752
2017	714.824

THE OFFER.

The supply from clothing companies and marketers of clothing, can be identified as an offer distributed between different factories, and it is several producers who make about 65% of the domestic market which imposes quality, price and amount. Unable to determine historically the supply behavior raises a question 'The ability of your company to make pajamas is? (question six) and, the results are as follows. Production capacity of the companies surveyed

RESPUESTA	FRECUEN CIA	PORCENT AJE
760 pijamas	16	32%
820 pijamas	7	14%
1.000 pijamas	5	10%
1.500 pijamas o más	3	6%
Ninguna	19	3%
TOTAL	50	100%

Projection of the Offer.
Considering these results, we can say that the current offer monthly factories and distributors Pajama For Men Atuntaqui city is 27,400 pajamas for men, which means 328,900 annually pajamas. If we have this annual number of pajamas as an offer, and equally applied as a constant average population growth in Ecuador that is 2.3%, you would have the following table of projected supply.

Projected Man Pajamas Offer

PROYECCIÓN DE LA OFERTA DE PIJAMAS PARA HOMBRE	
AÑOS	NÚMERO DE PIJAMAS
2012	328.900
2013	336.465
2014	344.203
2015	352.120
2016	360.219
2017	368.504

DEMAND UNMET

Comparing the demand and supply projections for 2012 will, the current supply of pajamas for men not meet quotas or orders that are in demand, so it is done the following comparative table:
demand

DEMANDA INSATISFECHA			
AÑO	DEMANDA	OFERTA	DEMANDA INSATISFECHA
2012	638.000	328.900	309.100

If unsatisfied demand is at 309,100 pajamas for men, the company "Your Brand" will enter the market with a production of 40,920 pajamas for men, which means 13.24% of the unmet demand.

THE PRICE.

The outcome of the question: What is the price that you are willing to pay for the service of making pajamas for men?

(question ten), entrepreneurs of the 50 companies manufacturing and marketing Atuntaqui city, the results are as follows. Willingness to pay

Disposición al pago

RESPUESTA	FRECUENCIA	PORCENTAJE
1.00 usd	8	16%
1.50 usd	32	64%
2.00 usd	7	14%
2.50 usd	2	4%
3.00 usd o más	1	2%
TOTAL	50	100%

PROMEDIO DE DISPOSICIÓN AL PAGO			
RESPUESTA	FRECUENCIA	SUMATORIA	PROMEDIO
1,00	8	8	
1,50	32	48	
2,00	7	14	
2,50	2	5	
3,00	1	3	
TOTAL	50	78	

By analyzing these results, which in home service company making pajamas for men, will average price for each pajama clothing value \$ 1.56 dollars.

MARKETING.

Marketing the product will directly contract manufacturer who marketed at the country level production pajamas for men and find a

single point of sale in the city of Atuntaqui, parish Andrade Marin.

MARKET STUDY FINDINGS.

The demand for tailoring of pajamas for men, in 2017 it's the end of the project will be approximately for man 714.824pajamas year and this market is growing and would need to be

integrated manufacturers and marketers, companies that provide the service of making pajamas for men. Being 309.100pajamas unmet demand for men and despite the integration of a service company making pajamas for men in 40,920 units, there is still a deficit or unmet 268 180 pajamas.

According to the results of the survey and the analysis of demand and supply is likely to create a service business making pajamas for men. The average market price of \$ 1.56 U.S. dollars if possible to work and maintain a reasonable profit margin service business making pajamas for men.

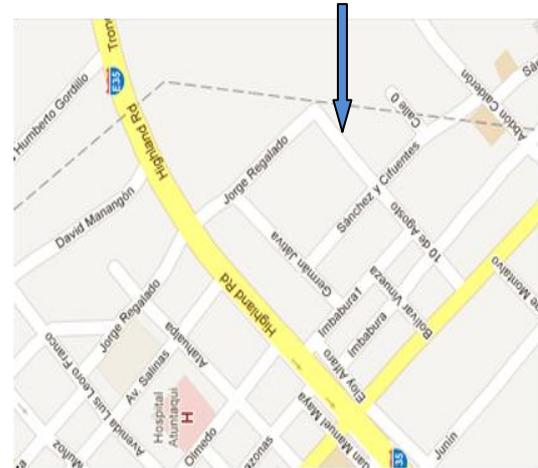
TECHNICAL STUDY

This chapter discusses the project location both macro and micro, availability of raw materials and inputs, technology to be used, the necessary human and financial resources, identify processes to make the company work more optimally, the ability production.

LOCATION

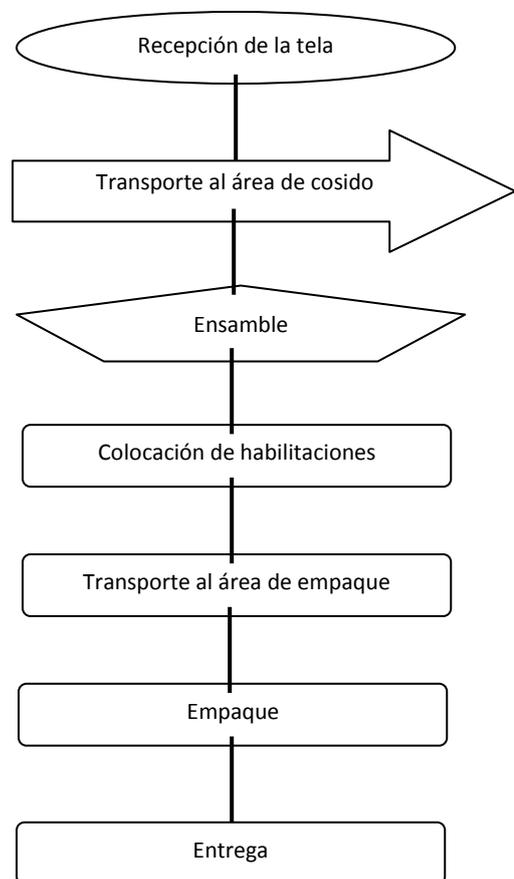
Microenterprise "Your Brand" will be located at where the demand and supply, the product to be offered is the making of pajamas mens, which is very important to be near the raw material for marketing and distribution if it needs to be close to the customer. For the benefits and importance of the location of the micro, was chosen Andrade Marín Parish in Canton Antonio Ante, in the Province of Imbabura It will be located between the street and the street Jorge Regalado s / n of the Parish Andrade Marín, Hatuntaqui City, Canton Antonio Ante, Imbabura Province. This is in

order to be close to the raw material suppliers and transportation facilities and loads of textile products.



PROCESS

In the company defined main processes from receipt of raw materials to the payment of the product by the customer. These processes are defined taking into account the activity procedure responsible area, time and outcome



SELECTION OF MACHINERY AND EQUIPMENT

In the micro will work with the following types of machines.

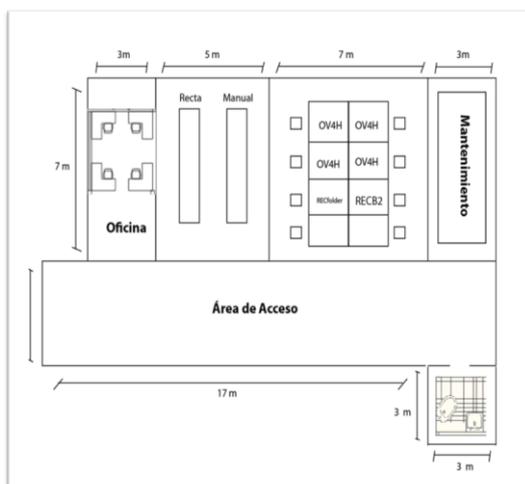
Summary of Machines

CANTIDAD	CONCEPTO
2	Máquina recubridora
1	Máquina Elasticadora
3	Máquina Recta
1	Botonera
3	Máquina Overlock
1	Ojaladora

PLANT DISTRIBUTION

The plant layout is the physical arrangement of all the elements involved in the manufacture of the good, including work areas, space for materials handling, storage, as well as all activities and services necessary for the production

Distribution Plant



HUMAN RESOURCES

In business administration, is called human resources (HR) to work transferring all employees or employees of an organization. But more often, so the function call or dealing with management to identify, recruit, train, employ and retain employees of the organization. These tasks may be performed by a person or department, the HR professionals with the directors of the organization.

PRODUCTION CAPACITY

The company has sufficient equipment for the entire production process. To permanently keep and production. Inside the plant, the company has 11 machines that produce textiles pajamas

for men, in an 8 hour shift. According to this information, the textile plant, has capacity to produce around 3,410 monthly pajamas in an 8 hour shift, with 11 machines, at an efficiency of 90%. Pajamas Production

PRODUCIÓN AL MES	PRODUCIÓN DIARIA	NÚMERO DE OBRERAS	PRODUCIÓN DIARIA POR OBRERA
3.410	155	5	31

To work in this amount of production, it is necessary that the company has a manufacturing pajamas 155 daily, so it is estimated that at least five operatives must have, and the time or SAM of each garment

will be of 14 minutes, which pajamas produce
31 per day.

Similarly, it took into account the following aspects:

COSTO DE MAQUINAS				
CAN	CONCEPT	MARC	COSTO/	COS
T	O	A	UNITARI	TO/
				TOT
				AL
2	Máquina recubridora	GENS Y	1.200,	2.40 0,
1	Máquina Elasticadora	SIRUB A	2.400,	2.40 0,
3	Máquina Recta	JUKI	800,	2.40 0,
1	Botonera	JUKI	2.000,	2.00 0,
3	Máquina Overlock	JUKI	750,	2.25 0,
1	Ojaladora	JUKI	1.000,	1.00 0,
	TOTAL			12.4 50,

The location of the plant is suitable due to the distance to the city and considering Hatuntaqui factories and marketers of men's pajamas.

The machinery is the better performer for making service for men pajamas. There is a lot of skilled labor for making men's pajamas in the specific sector. All made pajamas have a ready market.

ECONOMIC STUDY.

It includes everything that is the Economic Survey to project the unmet demand to meet it with the company to establish itself can determine the investment needed working capital, infrastructure, costs, production costs.

INVESTMENTS.

ground
Regarding our pajamas making workshop will be built on a plot of 300 square meters it has a cost of \$ 9,000.00 dollars.

Machinery and Equipment
A machine is a set of parts or fixed and mobile elements, which enables performance advantage, direct, regulate or transform energy or do work for a specific purpose. The elements of a machine are: engine, mechanism, frame and security features, and are classified by engine or energy source, according to their mechanism or head movement and / or by type of frame. A team is a collection of tools, instruments and apparatus for a particular purpose.

TECHNICAL STUDY FINDINGS.

After reviewing the results of this project is feasible from a technical standpoint, it appears as an interesting alternative investment, but you should be very clear of your intended market and prices possible to obtain.

Costos de Maquinaria y Equipo

Equipos de Computación

EQUIPOS DE COMPUTACIÓN			
CANT	Concepto	V. UNITARIO	V.TOTAL
1	Computador	700,00	700,00
	TOTAL		700,00

Suministros de oficina

SUMINISTROS DE OFICINA	
Concepto	V.Total
Calculadora	60,00
Teléfono	150,00
Papelera	24,00
Basurero	15,00
Grapadora	12,00
Perforadora	9,00
Útiles de oficina	100,00
TOTAL	370,00

Muebles y Enseres

MUEBLES Y ENSERES			
CANT	Concepto	V. UNITARIO	V.TOTAL
1	Escritorio	375,00	375,00

4	Sillas	60,00	240,00
1	Archivador	260,00	260,00
	TOTAL		875,00

Equipo Complementario

EQUIPO COMPLEMENTARIO	
Concepto	V. Total
Extintor	85,00
Botiquín	65,00
Herramientas básicas	150,00
TOTAL	300,00

Infraestructura

INVERSIÓN EN INFRAESTRUCTURA				
CONCEPTO	UNIDAD	CANTIDAD	V.UNITARIO	V.TOTAL
Terreno	m ²	300,00	30,00	9.000,00
INFRAESTRUCTURA	m			
taller de confección	m ²	49,00	150,00	7.350,00
área de empaque	m ²	35,00	150,00	5.250,00
Mantenimiento	m ²	21,00	150,00	3.150,00
Oficina	m ²	21,00		
Área de acceso	m ²	80,00	150,00	12.000,00
Área de servicio	m ²	9,00	150,00	1.350,00
TOTAL	m ²	215,00	150,00	38.100,00

investments

The proposed implementation of a clothing shop mens pajama has a total investment cost of 66634.14, was financed with the contribution of the capitalist socio furnish 26653.66 which is 40% of the total cost of the project implementation and 39980.48 to significael the remaining 60% held by a loan to the national financial corporation CFN

Inversiones

INVERSIONES			
Inversiones / Fuente	Total USD	CAPITAL INVERSIÓN	PRÉSTAMO
Capital de Trabajo	4.839,14	1.935,66	2.903,48
I.- Activos fijos tangibles			
Terreno	9.000,00	3.600,00	5.400,00
Maquinaria y equipo	12.450,00	4.980,00	7.470,00
Equipos de computación	700,00	280,00	420,00
Suministros de oficina	370,00	148,00	222,00
Muebles y enseres	875,00	350,00	525,00
Equipos complementarios	300,00	120,00	180,00
Infraestructura	38.100,00	15.240,00	22.860,00
Total Inv. Fija Tangible	61.795,00		
TOTAL INVERSIÓN	66.634,14		
CAPITAL DE INVERSIÓN		26.653,66	
PRÉSTAMO CFN			39.980,48

DETERMINATION OF COST

Only considered as product costs, costs and variable costs: direct materials, direct labor and variable manufacturing overhead costs. The costs and fixed costs are considered as expenses of the period.

Mano de Obra

COSTO DE MANO DE OBRA DIRECTA	
DESCRIPCION	Obrero
CANTIDAD	5
SUELDO BÁSICO	292,00
APORTE PATRONAL	27,30
SUELDO	319,30
MESES	12
TOTAL SUELDO ANUAL	3.831,62
DÉCIMO TERCER SUELDO	292,00
DÉCIMO CUARTO SUELDO	292,00
TOTAL ANUAL	4.415,62
TOTAL	22.078,12

GASTOS ADMINISTRATIVOS		
DESCRIPCION	Administrador	Asistente
CANTIDAD	1	1
SUELDO BÁSICO	775,00	590,00
APORTE PATRONAL	72,46	55,17
SUELDO	847,46	645,17
MESES	12	12
TOTAL SUELDO ANUAL	10.169,55	7.741,98
DÉCIMO TERCER SUELDO	292,00	292,00
DÉCIMO CUARTO SUELDO	775,00	590,00
TOTAL ANUAL	11.208,55	8.595,98
TOTAL ADMINISTRATIVOS	GASTOS	19.804,53

Gastos en Ventas

GASTOS EN VENTAS					
DESCRIPCIÓN	Año 1	Año 2	Año 3	Año 4	Año 5
CANTIDAD					
Publicidad (radios)	3,00	3,00	3,00	3,00	3,00
Costo unitario	180,00	186,30	192,82	199,57	206,55
Costos Total mensual	540,00	558,90	578,46	598,71	619,66
Costos Total Anual	6480,00	6706,80	6941,54	7184,49	7435,95

BALANCE POINT.
The equilibrium point shows a situation in which the company breaks even, and is performed to determine the lowest level of production or sales at which a project can work without jeopardizing the financial viability.

Costos Fijos

AÑO	1
mano de obra	4.415,62
gastos administrativos	19.804,53
Impuesto a la renta	10.010,70

Costo de ventas	2.160,00
depreciación	1.516,50
amortización	7.956,99
costo financiero	3.975,18
	49.839,52

Total costos fijos \$ 49839.52

Costos Variables

AÑO	1
materia prima	0
materiales e indirectos	500
Participación trabajadores	3.033,49
TOTAL	3.534,49

Precio de venta = \$ 61.380,00

$$PE = \frac{\text{costos fijos (CF)}}{1 - (CV/PV)}$$

Costos Fijos CF = \$49839.52 dólares

Precio de Venta PV = \$61.380,00 dólares.

Costo Variables CV =
 \$3.534,49dólares.

Substituting values into the formula have the following:

$$PE = \frac{49839,52}{1-(3.534,49/61.380,00)}$$

$$PE = 46.969,574$$

Consequently, the company needs to earn revenue from \$ 46,969.574 dollars in sales and 31,313 pajamas make to break even.
DETERMINING THE COST OF PRODUCTION

The term cost is invariably tied to any economic activity and therefore the company as an economic unit of production, that is, as an entity that develops productive economic activity: it combines a number of factors and transforms them into distinct elements: products.

From the economic point of view it is important to understand and analyze the increase of utility or value addition made by the company, for which it has to assess the factors involved in the production process and relate them to the value assigned to the products obtained. Thus fixed costs + variable cost / divided to the number of units produced is = equal to the cost of production.

Total de Costos y Producción Anual

Total Costos = Costos Fijos + Costos Variables	53.374,01
Producción Anual (Número De Pijamas)	40.920

As a result of the total costs and annual production is determined pajamas, production cost is \$ microenterprise 1.30, leaving a balance of 0.20 cents per each

pajamas for men.
FINANCIAL STUDY CONCLUSION.
 The financial analysis of the proposed business is focused on observing the behavior of the main financial indicators for five periods and the search for their improvement strategies within the company and market-facing strategies. Initially looking for a contribution of \$ 26,653.66 and partners for long-term loan for \$ 39,980.48, with which it intends to start the operation and ensure the payment of labor, raw material and administrative expenses for the two first months of the year is estimated as available in box \$ 4,839.14, for covering them and in turn leave a surplus for the third month, where for projected sales of the company have already begun to raise those made during the first two months.

The financial obligations during the five periods analyzed tend to drop, because that is paid annually and not incurred in new loans to support the operation, however the company seeks to avoid having a high financial cost and concentrate efforts on maximizing equity and maintain bank options to use when the company decides on investing market requirement.

ECONOMIC EVALUATION

Economic evaluation is performed, in order to project profit and loss statements, cash flows, and determine the opportunity cost, IRR, NPV, Breakeven, conduct a cost-benefit analysis and know the payback period of the initial investment Profit and Loss Statement Is showing the products, returns, revenue, income, profits, earnings, costs, expenses and losses for a given period, in order to compute the net income or net loss obtained during this period. Presents the financial position of a company at a given date, using as parameter the income and expenditure; provides net income of the company.

Estado de Ganancias y Pérdidas proyectado						
Concepto / Año		1	2	3	4	5
Ventas netas		61.380,00	65.751,79	70.434,96	75.451,69	80.825,74
Costos de materia prima		0,00	0,00	0,00	0,00	0,00
Gastos administrativos		19.804,53	20.497,69	21.215,11	21.957,54	22.726,15
Costo de mano obra		4415.62	4570.17	4730.13	4895.68	5067.03
Gastos Admin. y Ventas		24220.15	25067.86	25945.23	26853.32	27793.18
Costos indirectos		500,00	517,50	535,61	554,36	573,76
Depreciación		10389.83	10389.83	10389.83	10389.83	10389.83
Costo Producción total -		35109.98	35975.19	36870.68	37797.51	38756.78
Utilidad Bruta		61.380,00	65.751,79	70.434,96	75.451,69	80.825,74
Utilidad de Operación		26270.02	29776.60	33564.28	37654.19	42068.96
Gastos Financieros -		666.34	666.34	666.34	666.34	666.34
Utilidad antes de impuestos		26936.36	30442.94	34230.63	38320.53	42735.30
IMPUESTO A LA RENTA -	- 25%	-6734.09	-7610.74	-8557.66	-9580.13	-10683.83
Utilidad antes de participación		20202.27	22832.21	25672.97	28740.40	32051.48
Participación trabajadores	- 15%	-3030.34	-3424.83	-3850.95	-4311.06	-4807.72
Utilidad Neta		17171.93	19407.38	21822.02	24429.34	27243.76

Cash Flow

Cash flow or cash flow is a schematic showing the costs and revenues consistently recorded year by year (or period by period). These are obtained from technical market studies, administrative, etc.. Therefore, the flow of funds can be regarded as a synthesis of all studies performed as part of the pre-investment

Flujo de Caja

Flujo de Caja Proyectado						
Concepto / Año	0	1	2	3	4	5
Ingresos		61380	65751.79	70434.96	75451.69	80825.73
Egresos de operación						
Costos de materia prima		0	0	0	0	0
Gastos administrativos		19804.53	20497.68	21215.10	21957.63	22726.15
Costo de mano obra		4415.62	4570.17	4730.12	4895.68	5067.03
Costo de ventas (publicidad)		6480	6706.8	6941.53	7184.49	7435.94
Costos indirectos		500	517.5	535.61	554.35	573.76
Impuesto a la Renta		-6734.08	-7610.73	-8557.65	-9580.13	-10683.82
Total egresos de operación		24466.06	24681.42	24864.72	25012.03	25119.06
Flujo de Operaciones		36913.93	41070.36	45570.23	50439.65	55706.67
Capital de Trabajo	-4839.13	-5008.50	-5183.80	-5365.23	-5553.02	-5747.37
Flujo Economico		31905.48	35886.56	40204.99	44886.63	49959.29
Capital	-26653.65					
Financiamiento	-39980.48					
Capital de Inversión	-71473.27					
Flujo Financiero	-71473.28	31905.43	35886.56	40205.00	44886.63	49959.29

INDICES

NPV of the project. It is that which determines the value of an investment based on the difference between the present value of all cash receipts from investment date and all payments arising from the same throughout the term of the investment

VAN= - Inversión +/- Flujos de caja

(1 + i)ⁿ

Dónde:

I = Inversión

Qn = Flujo

r = interés

VAN = - I + Qn₁/(1+r)¹+Qn₂/(1+r)²+Qn₃/(1+r)³+Qn₄/(1+r)⁴+Qn₅/(1+r)⁵

TD = 15%

Flujo	-					
Fina	714	319	358	402	448	499
ncier	73.2	05.4	86.5	05.0	86.6	59.2
o	8	3	6	0	3	9

VAN =-

71.473,28+31.905,43/(1+0.15)¹+35.886,56/(1+0.15)²+40.205,00/(1+0,15)³+44.886,63/(1+0.15)⁴+49.959,29/(1+0.15)⁵

VAN = 100.917,49

Project IRR
The internal rate of return (IRR) is the rate that equates the net present value to zero. The internal rate of return is also known as the rate of return as a result of the

reinvestment of net cash flows within the operation of its business and is expressed in percentage.

Returns the internal rate of return of the cash flows represented by the numbers in values. These cash flows need not be constant, as is the case in an annuity. However, the cash flows must occur at regular intervals, such as months or years. The internal rate of return equal to the interest rate produced by an investment project with payments (negative values) and income (positive values) that occur at regular periods.

0 = -I+Qn₁/(1+r)¹+ Qn₂/(1+r)²+ Qn₃/(1+r)³+ Qn₄/(1+r)⁴+ Qn₅/(1+r)⁵-I

Flujo	-					
Fina	714	319	358	402	448	499
ncier	73.2	05.4	86.5	05.0	86.6	59.2
o	8	3	6	0	3	9

0 = -71.473,28+31.905,43/(1+0.15)¹+35.886,56/(1+0.15)²+40.205,00/(1+0,15)³+44.886,63/(1+0.15)⁴+49.959,29/(1+0.15)⁵-70.821,55

TIR = 44.00%

Because the Internal Rate of Return (IRR) exceeds its corresponding discount rate (TD), we can say that this project is viable. Accordingly this rate of return, over the five year life of the project encourages investment

Relationship Cost - Benefit
Is another criterion of evaluation of a project is to determine a reason by which it is determined whether or not to invest in a project.

Beneficio / Costo

BENEFICIO/COSTO						
	1	2	3	4	5	TOTAL
ESTRADAS DE EFECTIVO / (1+%) ⁿ	61380,00	65751,79	70434,96	75451,69	80825,74	353844,18
SALIDAS DE EFECTIVO / (1+%) ⁿ	32654,49	34360,74	36166,30	38077,46	40100,95	181359,95
BENEFICIO/COSTO	353844,18	=	1,951			

The value of \$ 1.951 means that for every dollar spent \$ 0.95 recovers

SENSITIVITY ANALYSIS. Sensitivity analysis evaluates the variation in the value or cost of the project, due to variation of one or some of the factors and / or of the same independent variables. Sensitivity analysis is an examination of the correlation between the dependent variables (an indicator of the value of the project such as the Van, the Tir, or other) and the independent variables such as commodity prices, raw material prices , number of inputs required in the production ... etc. Any change in the value of any variable

initially considered automatically will change the outcome of the project: NPV, IRR Sensitivity analysis of an investment project is one of the simplest tools to apply and we can provide the basic information to make a decision according to the degree of risk that we decide to take.

Sensibilidad

	precio	VAN	TIR %	TD
DATOS DEL ESTUDIO				15 %
Disminución del Precio	- 0,10	81.523, 47	35 %	15 %
Aumento del Precio	+0,10	120.311 ,51	52 %	15 %

Thus we can say that by reducing the price by 0.10 cents a project we can still say that the project is feasible, but with very little use, and, in the case of increase by \$ 0.10 cents is improved the expectation of profits, but you run the risk of losing customers, because it was determined that they are willing to pay \$ 1.50 per unit.

CONCLUSION OF THE PROJECT EVALUATION.

According to the results of the financial indices 100,917.49 NPV is positive, IRR of 44% which is higher than the discount rate is 15% and 1,951 Cost Benefit, which are boxes from assessment financial: Profit and loss Statement and Cash Flow, it is concluded that the project is feasible and is supported and will be sustainable. **INSTALLATION AND COMMISSIONING OF MICRO.**

This chapter discusses the installation and commissioning of the company, its philosophical basis, type of machinery, civilian facilities, function tests, standardization of processes, sensitivity analysis.

PHILOSOPHICAL BASE ENTERPRISE The philosophical basis reveals the reason for the company. "Your Brand" and the guidelines will continue to achieve compliance objectives that have been raised in the organization. view

For the year 2017 "Your Brand" will be, a leader in services for making pajamas for men in the city of Hatuntaqui, offering our customers an innovative product quality at an affordable price, fulfilling responsibility, timeliness and effectiveness with market requirements.

mission

"Your Brand" offers to our customers, service pajama clothing for men, national quality, innovative and influential designs, promoting the use of labor and local raw materials and Ecuador, and practicing values of trust, accountability, effectiveness and highly qualified staff.

Company logo.



SMALL BUSINESS LEGAL ORGANIZATION.

"Your Brand" is the name by establishing microenterprises.

They develop microenterprise activities, some see the following legal formalities completed.

- Patent granted by the Municipal GAD Hatuntaqui city in order to be able to exercise their trade acts Hatuntaqui city or any city municipal office where you installed the business.
- Tax Return according to, Registry of Taxpayers in the Internal Revenue Service of the Ministry of Finance (SRI).
- Registration and payment of taxes to the fire

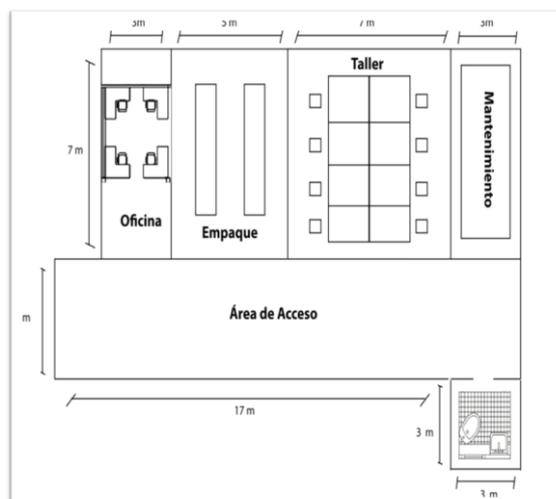
INSTALLATION

Machinery and Equipment. We proceed to the acquisition of machinery and equipment deemed necessary for the operation of the service company making pajamas for men "Your Brand"

COSTO DE MAQUINAS				
CANTIDAD	CONCEPTO	MARCA	COSTO/UNITARIO	COSTO TOTAL
2	Máquina recubridora	GENSY	1.200,00	2.400,00
1	Máquina Elasticadora	SIRUBA	2.400,00	2.400,00

3	Máquina Recta	JUKI	800,00	2.400,00
1	Botonera	JUKI	2.000,00	2.000,00
3	Máquina Overlock	JUKI	750,00	2.250,00
1	Ojaladora	JUKI	1.000,00	1.000,00
TOTAL				12.450,00

PLANT DISTRIBUTION



START

Performance test
Whereas the direct labor (MOD) takes 80% of the time of a garment and is 100% responsible for the quality of it, is essential to build a garment that the operator has control of the machine, appreciation of lengths and manual dexterity, because this person has enough experience in manufacturing to commissioning.

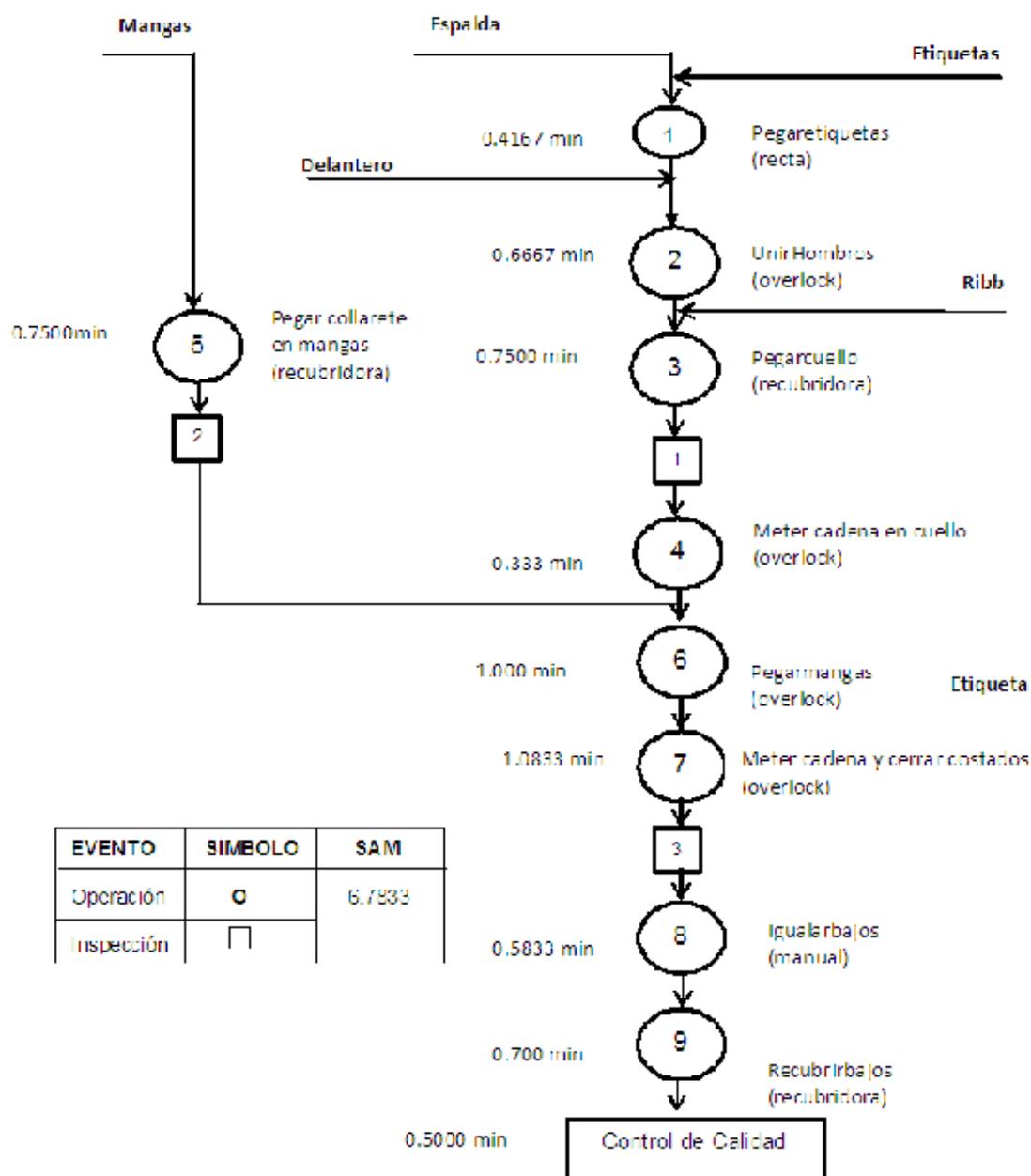
In the process were performed, 10 pants and 10 divers, basic pajamas for men, all the pieces came properly labeled and normal serial sequence correct and accurate pickets, whose manufacture and assembly were 21 basic activities:

Basic activities for making suits for men

1	PEGAR ETIQUETA
2	UNIR HOMBROS
3	PEGAR COLLARETE EN CUELLO
4	METER CADENA EN CUELLO
5	PEGAR COLLARETE EN MANGAS
6	PEGAR MANGAS
7	METER CADENA Y CERRAR COSTADOS
8	IGUALAR BAJOS
9	RECUBRIR BAJOS
10	CONTROL DE CALIDAD
11	DOBLADO
12	UNIR TIRO DELANTERO
13	CERRAR COSTADOS
14	PEGAR ELASTICO
15	CERRAR TIRO ESPALDA
16	CERRAR ENTRE PIERNA
17	IGUALAR BASTAS
18	RECUBRIR CINTURA

19	RECUBRIR BASTAS
20	CONTROL DE CALIDAD

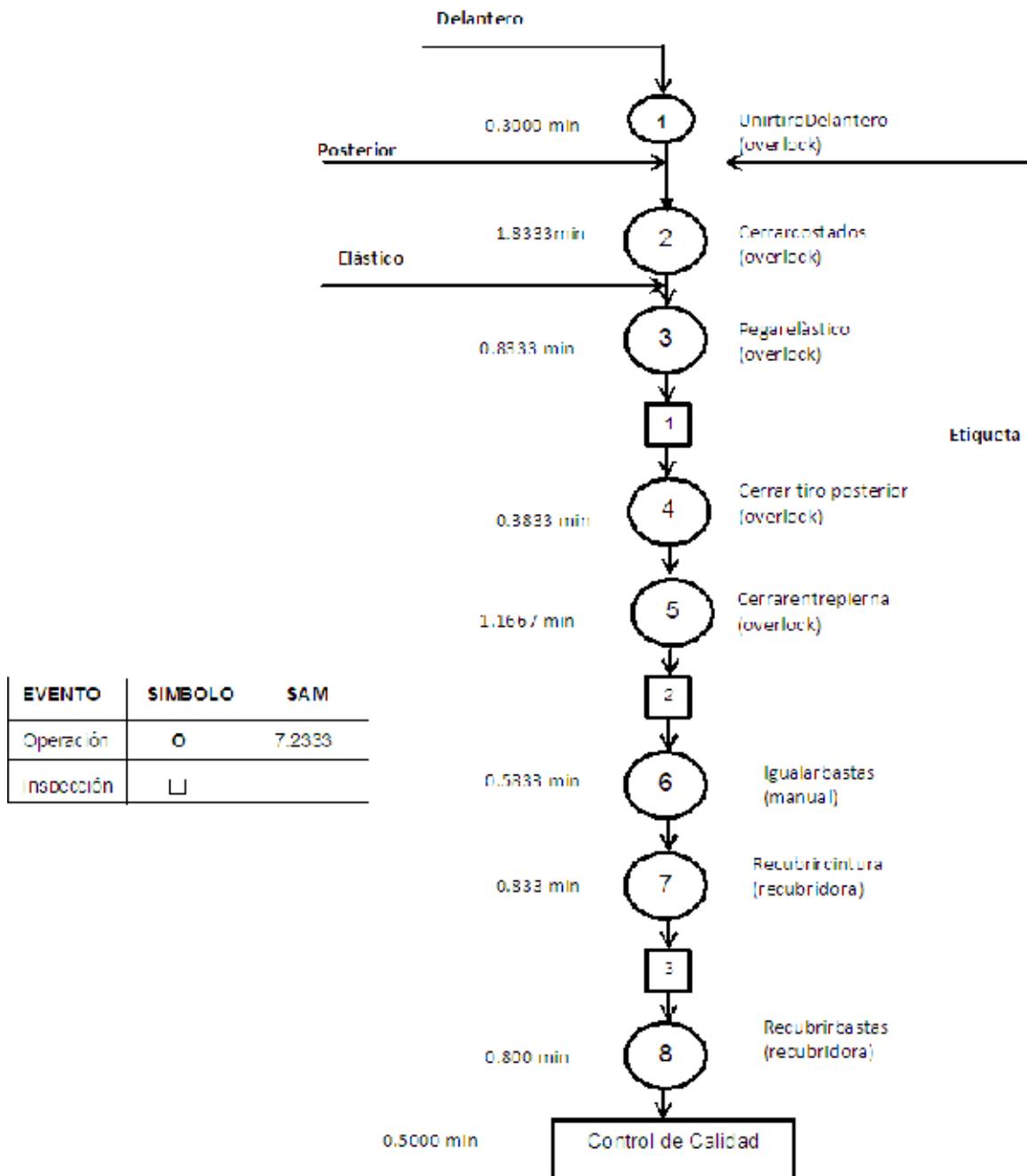
DIAGRAMA DE OPERACIONES DE BUSO Ensamble de buzo Modelo clásico básico



EVENTO	SIMBOLO	SAM
Operación	○	6.7833
Inspección	□	

DIAGRAMA DE OPERACIONES DE PANTALÓN

Ensamble de pantalón Modelo clásico básico



Posicionamiento de maquinaria:

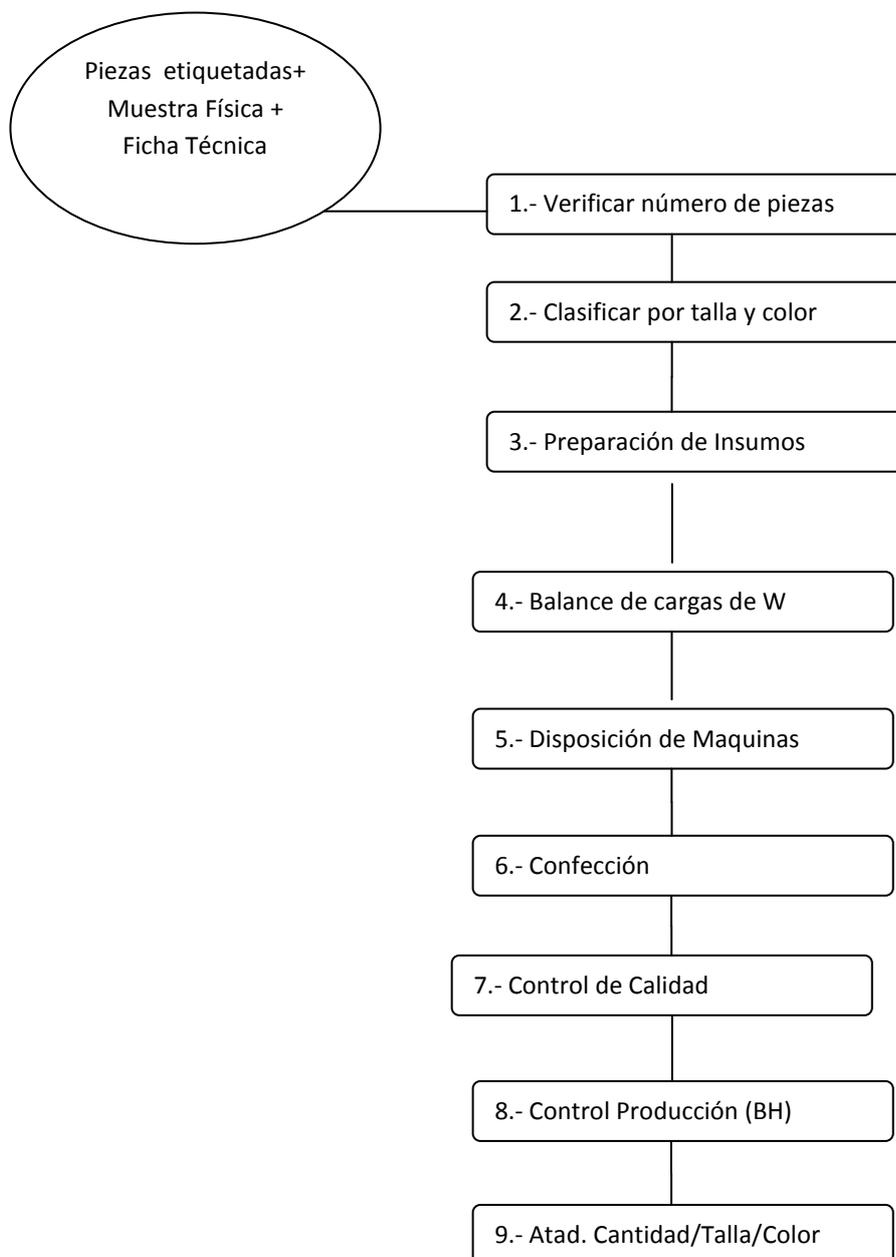
CARGA DE TRABAJO Y SECUENCIA (DISTRIBUCION MODULAR)								
RECTA	STD	CANTD.	OV4h	STD	CANTD.	OV4h	STD	CANTD.
1 PEGAR ETIQUETA			2 UNIR HOMBROS 4 METER CADENA EN CUELLO 14 PEGAR ELASTICO 15 CERRAR TIRO ESPALDA			6 PEGAR MANGAS 16 CERRAR ENTRE PIERNA		
1			2			4		
MANUAL	STD	CANTD.	RECBfolder	STD	CANTD.	OV4h	STD	CANTD.
8 IGUALAR BAJOS 10 CONTROL DE CALIDAD 11 DOBLADO 17 IGUALAR BASTAS 20 CONTROL DE CALIDAD 21 DOBLADO			3 PEGAR COLLARETE EN CUELLO 5 PEGAR COLLARETE EN MANGAS			7 METER CADENA Y CERRAR COSTADOS 12 UNIR TIRO DELANTERO 13 CERRAR COSTADOS		
1			5			3		

5		
RECB 2	STD	CANTD.
9 RECUBRIR BAJOS 18 RECUBRIR CINTURA 19 RECUBRIR BASTAS		

STANDARDIZATION OF PROCESS.

This systematization of production activities in general, is the standardization, whose starting point is based on the objectives, creativity and the proper management of production systems to meet the expectations and requirements of the user and directs all its efforts to continuous improvement for a profit that be a suitable organization will meet the expectations of the company. During the application of analysis operations must be taken into account certain factors that are particularly effective for improving any kind of operation, these principles are based on the economy of movement, are considered common possibilities for improving the work .

Diagrama de Flujo de Operación.



Completion of Project Evaluation. According to the results of the financial indices 100,917.49 NPV is positive, IRR of 44% which is higher than the discount rate is 15% and 1,951 Cost Benefit, which are boxes from assessment financial: Profit and loss Statement and Cash Flow, we conclude that,

the project is viable and that it will be sustained and sustainable.
Payback

The payback period of the investment, PRI, is the third criterion used to evaluate a project and is intended to measure how long (years, months or days) retrieves the total investment at present value.
CONCLUSION AND RECOMMENDATIONS.
Conclusions.

The market study in apparel Hatuntaqui City, it is concluded that there is unmet demand for pajamas 309,100 a year to use the service of making pajamas for men, just try to fill the 13.24% that are 40,920 pajamas by microenterprise "Your Brand". There is a potential supply in the universe of study, but due to increased orders nationwide daily industry reaches this city requires more services, including the manufacture of men's pajamas. It was determined that in the city of Hatuntaqui, there is great demand for pajamas for men, provided they meet the requirements and needs of the market, mainly highlighting the quality and price, are convenient.

Taking the road infrastructure, means of transport and ease of all basic services that the city of Hatuntaqui, allows manifest that has a strategic location and excellent productive capacity available to the microenterprise "Your Brand", the same that respond to customer requirement. As a result of the financial analysis, we can

observe the feasibility and practicality of creating the new microenterprise "Your Brand" in the city of Hatuntaqui, Urban Parish Andrade Marín, considering it has an IRR of 44%, a NPV of U.S. \$ 100,917 , 49, one Cost Benefit Ratio of U.S. \$ 2.85 and the recovery period is 1 year 11 months to the project financing.

The microenterprise making pajamas for men, are able to show their ability and success. You should take advantage of these qualities and carry out appropriate action for you to overcome the current challenges and leave the structural adjustment period. Foster innovation and research, enhance the skills of the workforce, improving the image of the company and protect intellectual property rights are the key points that will help increase the competitiveness of the clothing firm of pajamas for men.

Recommendations

- Invest the resources needed and use own funding sources such as the National Finance Corporation, to carry out the proposed project, because through the study of financial markets and has been shown to be feasible from the point of view: technical , economic, financial, and legal to ensure capital recovery of any investor.
- It is recommended that "Your Brand", has as its main competitive weapon periodic staff training and technological innovation in terms of raw materials and manufacturing processes so that business success is based on product innovation and customer care.
- It is recommended to improve sales techniques and advertising, to reach the target market quickly and accurately-that way you can capture as many unmet demand.
- Properly handle each of the areas that make business and the processes that are responsible for them, to fulfill the mission, vision and objectives that the company has set.

A reflection from which to define a specific corporate policy for this sector should be intended to mainly develop or, where appropriate, strengthen those aspects that allow the company to making pajamas for men. In particular, research and technological development, information technology, training and professional qualifications, the fight against counterfeiting and fraud. Another factor of importance is the innovation and quality of the garment to be bid, all of which helps to give added value to the final product, are the only possible way to preserve and if possible enhance apparel demand pajamas for men, and with them the maintenance of jobs generated by the micro

Recuperación de la Inversión

AÑOS	1	2	3	4	5	
INVERSIÓN	66.634,14					
FLUJO ANUAL	31.940,43	35.922,79	40.242,49	44.925,44	49.999,46	
TASA	15%	15%	15%	15%	15%	
VALOR ACTUAL	27.774,29	31.237,21	34.993,47	39.065,60	43.477,79	176.548,35
PROMEDIO DE VALOR ACTUAL	35309,6692					

Payback Period = 1.887135706
 Thus the period of payback is 1 year, 10 months, 24 days.

REFERENCES

- DUMRAUF LOPEZ, G. (2006), Applied Financial Calculus, a professional approach, 2nd edition, Editorial La Ley, Buenos Aires.
- BREALEY, MYERS AND ALLEN (2006), Principles of Corporate Finance, 8th Edition, Editorial Mc Graw Hill.
- GAVA, L., E. WARDROBE, G. SERNA and A. UBIERNA (2008), Financial Management: Investment Decisions, Editorial Delta.
- ROCK, Florence (2011). Entrepreneurial Finance. Amazon Kindle Publishing.
- KENNETH, L. Albert. How to start your own business. Mexico: Mc Graw Hill, 1983. p.78.
- Arango, Juan Ignacio. The textile industry in Colombia. Bogota: Sena, 1992. 28p.
- RAMIREZ, Ana Maria. Introduction to clothing. Medellin, p.84. thesis.
- U.P.B. Faculty of Textile Engineering.
- GUZMAN G, Beatriz Elena. 042 SMEs. Management Plan and Marketing for clothing. In SME 042. p.37-45.