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TECHNICAL AND ECONOMICAL FEASIBILITY ANALYSIS APPLIED TO HEALTH: SCHOOL-CLINIC IMPLANTATION PROJECT

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Abstract

The importance of the school-clinic to psychology course is associated to teaching, researching and extension affairs in public universities in Brazil. Considering the actual context in Santo Antônio city, Bahia, in which is located the psychology course (Centro de Ciências da Saúde - Health Sciences Center - UFRB), it's possible to realize that the institutions that actually assist mental health don't have the necessary basic structure to the course's academic needs. These limitations can make the clinical formation harder, restricting probation vacancies. The objective of the present study is to demonstrate the processes of economic and technical viability analysis applied in health. The used methodology was the study of economic and technical feasibility. The analysis object was the project of construction of a psychology school-clinic construction in the Universidad Federal do Recôncavo da Bahia (UFRB). These results can contribute to increase other feasibility studies of the health care area. The economy instruments usage for health care can reduce the failure of many public and private enterprises.

Keywords: School-Clinic, Economic Feasibility, Saúde-Mental.

RESUMO

A importância da clínica-escola para o curso de psicologia está associada ao ensino, pesquisa e extensão de universidades públicas do Brasil. Considerando o contexto atual da cidade de Santo Antônio, na Bahia, onde se localiza o curso de psicologia (UFRB), é possível perceber que as instituições que realmente atendem à saúde mental não possuem a estrutura básica necessária às necessidades acadêmicas do curso. Essas limitações podem dificultar a formação clínica, restringindo as vagas de estágio. O objetivo do presente estudo é demonstrar os processos de análise de viabilidade econômica e técnica aplicados em saúde. A metodologia utilizada foi o estudo de viabilidade econômica e técnica. O objeto de análise foi o projeto de construção de uma clínica-escola de psicologia na Universidade Federal do Recôncavo da Bahia (UFRB). Esses resultados podem contribuir para aumentar outros estudos de viabilidade da área de saúde. O uso de instrumentos econômicos para cuidados de saúde pode reduzir o fracasso de muitas empresas públicas e privadas.

Palavras-Chave: Clínica-escola; Viabilidade Econômica. Saúde Mental.



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Introduction

The school-clinics are developed in a set with the psychology courses, offering psychological treatment services to local communities. These institutions represent possibility of psychotherapy access to the poorest people in the society (COLARES & BESSA apud ENÉIAS, FALEIROS & SÁ, 2000). School-clinics of psychology assist to two great demands: the possibility of practice to senior students and providing psychological assistance to poorest communities (LÖHR & SILVARES, 2006).

The school-clinic is defined as a knowledge production place, a kind of laboratory to psychological practice in different acting areas and not only a clinic. The school-clinic context creates the opportunity to study new and ancient professional practices, defining more productive actions to each individual, contributing this way to society at all. Therefore, the school-clinic also contributes to the scientific and technological improvement of psychology (SILVARES, 2004). As an example, the work of São Paulo University (USP) school-clinic resulted in the creation of a software to clinical assistance managing (PSICOUSP), improving service quality (HERZBERG, 2000).

The importance of the school-clinic to psychology course is associated to teaching, researching and extension affairs in public universities in Brazil. Considering the actual context in Santo Antônio city, Bahia, in which is located the psychology course (Centro de Ciências da Saúde - Health Sciences Center - UFRB), it's possible to realize that the institutions that actually assist mental health don't have the necessary basic structure to the course's academic needs. These limitations can make the clinical formation harder, restricting probation vacancies.

On the other hand, the comprehension that services offering must be based on the identified demands (ROMARO and CAPITÃO, 2003). The restrictions of psychological



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services are resultant of the cities action power to attend mental health affairs. We must consider that if the demands were less hidden, the actions to supply them would also increase. We can estimate that some causes of this non-identified demand are: the population unfamiliarity about the service, the unfamiliarity of psychological phenomena and the procedures to take care of them. This relation suggests that there are some demands that aren't taken care of (PERES, SAINTS & RABBIT, 2004).

Through interviews with the secretaries of health and education in Santo Antonio de Jesus city and meetings of Pólo de Educação Permanente em Saúde (Health Education Permanent Center), it was possible to initiate the survey of some social demands that can be answered by the presence of a psychology course in the area and the creation of a clinic-school.

The demands presented by these public agencies are divided in the following way: Secretaria de Educação de Santo Antônio de Jesus (Santo Antônio de Jesus city's education agency) – comprehension of the school failure, teacher-student relation, educational politics, educational management, social problems, violence, dealing with differences, social abilities, difficulties of learning, programs of educative and preventive health; Secretaria de Saúde de Santo Antônio de Jesus (Santo Antônio de Jesus city's health agency) - educative health, management of SUS, humanized care, programs as CAPS, teenagers health, program of drug users recovery, worker health.

The analysis of school-clinics demand for psychology courses has motivated many studies. The theoretical studies about the categorization of consumers on school-clinics have interested many researchers (ENÉAS, FALEIROS, SÁ, 2000; ROMARO, CAPTAIN, 2003; TO HISS 2000 and 2004). It's common the concern about mental health services offered by clinics, mainly educational ones, among researchers as ROMARO and CAPITÃO (2003), ENÉIAS, FALEIROS and SÁ (2000). Silvares (2000 and 2004) discusses it when considering measures for health promotion.

Based on the law that rules psychology teaching (law 4119 of 08/27/1962), it's



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necessary that graduating students has an amount of hours in probation. To offer correct conditions for professional formation in psychology, the school-clinic project must be developed and included.

In this context, offering a good formation for students is one of the most important aspects of the clinic. In such a way, it's needed a good teaching quality allied to social inclusion that justifies the professional formation that prepares the student for the challenges of acting in many different physical and social situations.

The school-clinic focuses on the supervised training and on more specialized services offered by professors and associates duly incorporated to the education institution.

The satisfactory professionalization and the performance with the poor layers of the population must be the focus to balance psychological services offer in northeast section, in the Recôncavo area in Bahia, area next to the capital city. It's important, therefore, that its influence fields done activities become known as part of the work of characterization of the psychology clinic-school customers.

The objective of the present study is to demonstrate the processes of economic and technical viability analysis applied in health. The importance of the feasibility study is justified because the investment decisions, in general, absorb great volumes of public or private resources, of long duration, little flexible e, as consequence, exerts a deep impact in the institution. Such a way, every project, to be developed, must pass for a composed cycle of pre-investment, investment and operation phases.

The financial agencies of the project are usually interested in analysis that allows verifying the financial viability of the enterprise. On the other hand, the clinic, beyond the financial viability, will be interested in verifying the existence of eventual social and economic of the investment viability. In simple way, the criteria concentrate the available quantitative information in a number that, compared with a pre-established pattern, will allow it to accept or to reject the investment in analysis.



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Methodology

The used methodology was the study of economic and technical feasibility. The used instruments had been: the Minimum Tax of Attractivity - TMA, the Internal Tax of Return - TIR, the Liquid Present Value - VPL, the Deducted Time of Recovery - TRD, the Index Costs-Benefits - ICB. The analysis object was the project of construction of a psychology school-clinic construction in the Universidade Federal do Recôncavo da Bahia (UFRB). The Data base was composed by cost values and budget proceeding from the psychology services. Data analysis was done using software EXCEL and economic engineering theories (CASAROTTO, 2000).

Description of the school-clinic

The school-clinic has the purpose to offer psychotherapeutic attendance to the population. In such a way, part of the attendance is offered to poorer people and another one to the patient-customer who is able to pay for his treatment. For both, the attendance must be characterized for the quality, punctuality and professionals duly trained. Psychotherapeutic models must be adjusted for both groups of patients. The physical structure is planned to accomplish 720 sessions for month. It's divided in six rooms for infantile attendance and six for adults. This infrastructure is composed still by admittance room, coordination room, supervision room and teachers, students and painting exposition rooms.

Services will be accomplished by: trainee-students, guided and supervised by psychologists - masters, doctors and specialists – certified by Regional Psychology Council (CRP) and experienced in several psychology areas and services; School-Clinic Psychologists – qualified to act in clinical, scholar, organizational/ communitarian and research area; Voluntary psychologists from Cajueiro community and other areas, selected and approved by the coordination.



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Employee staff will be constituted by: coordinator; ad-coordinator; trainees coordinator; supervising professors; orienting professors of research; clinical, scholar and organizational psychologists, psychologists for special attendance, secretary, executive assistant administrative; trainee-students, under supervision of certified psychologists.

Analyses procedures and results

The economic feasibility study of the Psychology School-Clinic Project (UFRB) evaluated economic affairs related to its implantation sustainability. Therefore, It's clear that the economic value of a service corresponds to the monetary amount that reflects its possibility to produce income, throughout its economic life.

The viability was tested through mathematical models consisting by the following analysis elements: structure cost, investment cost, current capital cost, liquid present value, internal tax of return, deducted time of recovery and costs/benefits index.

Investment costs are defined as the addition of the capital fixture (fixed investments plus the capital costs before the beginning of the services) and liquid capital, being the capital fixture constituted by the necessary resources for the construction and assembly of an investment project, and the liquid capital corresponding to the necessary resources to the whole (or partial) project operation.

CHART 01
INFRASTRCTURE VALUES IN REAIS (R\$) - 2009

01	Reception Room	7.273,51
02	Coordination Room	7.767,90
03	Students Room	2.860,00
04	Adults Psychotherapy Room	24.060,00
05	Children Psychotherapy Room	35.082,00
06	Supervising and Teacher's Room	7.800,00
07	Psychological Evaluation Tools	8.419,60
08	Building Acquisition and Construction	300.000,00



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09	Human Resources*	24.060,00
10	Annual Marketing	2.000,00

Resource: Author's data – Field research in Feira de Santana city, State Bahia in Brazil.

* Exclusive devoted professors salaries are divided in the total price. As all the human resources will be given by the university, they aren't shown in the analysis.

** Construction calculated values.

We consider items 1 to 8 the most important ones for the clinic realization. Increased of item 10, that has a direct relation with the user's change of behavior for the opening of a new service, we have then, the necessary items for the beginning of the activities. For item 9, the personnel politics will be accomplished by trainees with compulsory agenda to psychologists' formation and permanent staff from the university. Other professionals will be contracted in a liberal routine of work: they receive for the difference between invoicing and by the use cost and reputation of the place.

Investments financial schedule

The cash flow chart is important in the project investment stage, when the coordination of the fund entrance is necessary (financial resources) and sale/ services revenue with investment expenditures flow, production costs and other expenses. If it isn't done, there may be significant revenue losses in terms of interests (as resulted of idle funds) or delays in the project implantation (financial strangle). Therefore, in the investment phase it will have to be elaborated at least one time for month. However in pre-investment phase, a normal annual cash flow chart is enough.

As it can be observed, the expenses with the feasibility studies had not been calculated, however, they represent the lowest investment costs. But the feasibility study it is of vital importance for the decision to invest. This importance is not only given analyzing and selecting the chances of public investment that are more convenient, but preventing uneconomical or badly planned investments. The decisions in the viability phase will have influence on all the useful life of the company, therefore, even with an operational



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administration well executed, it couldn't be capable to balance project errors.

Clinic recourses

Monthly general usage time: 720 examinations. However for the clinic survival, present costs value is divided for the average session's price ($R\$ 40,00 + R\$ 15,00 = R\$ 55,00$). The result is that to zero the monthly current costs it'll be necessary 96 examinations in average session's price. Concerning the average price of $R\$ 15,00$, it's characterized: Teacher's examination $R\$ 10,00$, by trainees for $R\$ 20,00$.

Half of the attendance time will be for devoid population, the other will be divided between UFRB employees, other course's students and community. This way, the clinic-school will also teach students the financial maintenance of a clinic.

Minimum tax of attractiveness

According to CASSAROTTO (2000), analyzing a suggestion of investment, it's considered the fact of being losing the opportunity of gaining returns by the application of the same capital on other projects. It's common that the new proposal, to be attractive, must earn, in the minimum, interest rate equivalent to the profitability of low risk current application.

In the case of this psychology school-clinic project, the basic interest rate was used, usually, known as tax of the Special System of Liquidation and Safekeeping - SELIC. This decision is based on the current reward of the public hearings for the related tax. In this year of 2007, this tax is in average around 12% by year according to the Central Bank data (BACEN, 2007).

Liquid Present Value – VPL

Admitting minimum tax of attractivity, the liquid present value is defined as the arithmetical addition of cash flow balance, discounted that fee to this day. This way, we can have the VPL of a range of incomes and outgoings, discounted to a given minimum tax of attractivity and being the planning horizon of 10 years.



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CHART 03

LEGEND

$VPL > 0$	Available Project
$VPL < 0$	Unavailable Project
$167423,23 > 0$	Available Project

Resource: Author's data



CHART 02

CASH FLOW DISPOSITION: CURRENT SPENDING DISPOSITION WITH DETERIORATION IN 24 MONTHS IN R\$

Objects	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Toner	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	
Eraser	8												8												
Chalk	48						48						48						48						
Wax																									
Pencil	60						60						60						60						
Color																									
You clip	20						20						20						20						
Color pen	90												90												
Dolls	300																								
Animals	300																								
Domino	90																								
Puzzle	600																								
Game																									
Game of Rods	120																								
Chess	600																								
Infantile books	2160																								
A4	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Pen	50							50					50						50						
Media	500	500								500						500			500				500		
Totals	5236	790	290	290	290	290	468	290	290	790	290	290	566	290	290	790	290	290	968	290	290	790	290	290	

Resource: Author's data

INCOME DISPOSITION DURING 24 MONTHS IN R\$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0	0	4950	9900	9900	9900	4950	4950	4950	9900	9900	9900	4950	4950	4950	9900	9900	9900	4950	4950	4950	9900	9900	9900

Resource: Author's data



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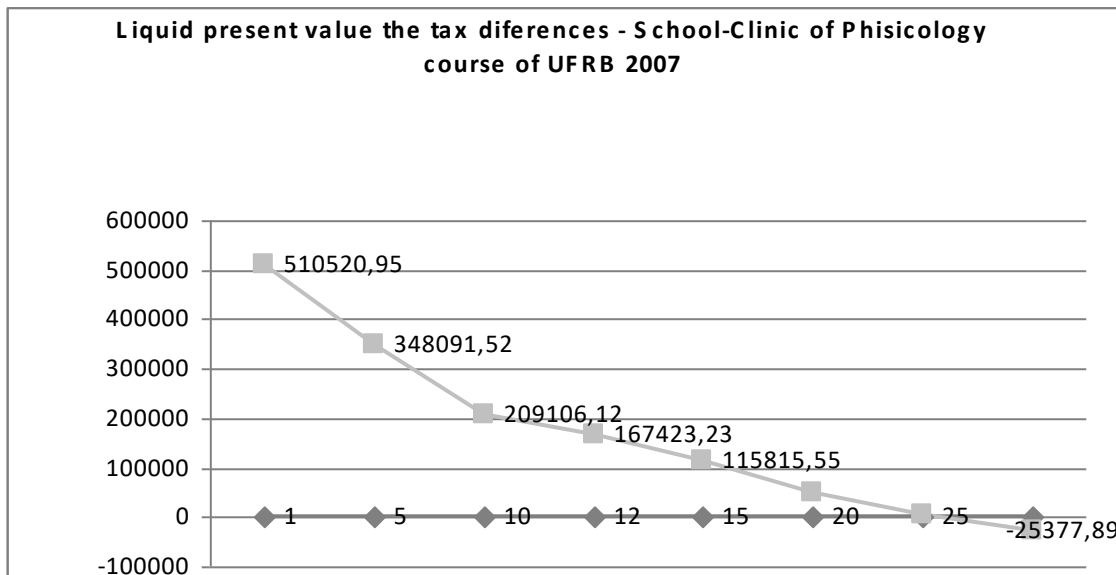
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In 10 years, these expenses tend to pay the investments including of the civil construction of R\$ 371.000,00 (580 m2 of built area). The data that refers to the works are of the engineer Navarro, one of the responsible by the building of the UFRB. Adjusting to a long term planning, it's suggest to keep the structure of 12 attending rooms aiming an income as the one described in the flow safe-deposit of the previous picture. On the other hand, the worth of the building will be limited to R\$ 300.000,00 because of the flow safe-deposit in the long duration. It'll be added R\$ 500,00 to mass publishing and R\$ 85.343,41 that is the lowest worth to fix and variable costs (working infra-structure), generating a total of R\$ 385.343,41. Adding these values by 12 to 12 months to develop this business into more suitable view, we'll have the next charts and lists.

Realize that in time zero, where the investment is done, the values are R\$ 306.551,41, where there are R\$ 301.315,41 é tacit, less incoming and outgoing necessary in the time zero (in fact, in year 1) so that the school-clinic is able to work.

GRAPH 01



Resource: Author's data

In this graph, the growing taxes to investments have decrescent VPL values. It's considered that, the higher the fees are, the lower are the values in current time to that fee. Based on that, it may be built the legend below: if VPL is higher than zero, the project is



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viable, if it's lower than zero, unviable.

Internal Tax Of Return - TIR

Internal tax of return is the tax that invalidates to current benefits values the investments of a cash flow, turning liquid present value equal to zero. It can be observed in the previous chart that to a 26% tax, the $VPL=0$ (this is the Internal Tax of Return).

CHART 04

LEGEND	
$TIR < TMA$	Unavailable Project
$TIR > TMA$	Available Project
$26\% > 12\%$	Available Project

Resource: Author's data

Deducted Recovery Time - TRD

It's the necessary time to the outlays be integrally recovered the minimum tax of attractiveness - TMA. In the chart below the recovery time of the deducted investment can be understood as being a kind of crack of the current value to TMA. The brought up to date value of the considered project starts to be positive between 4^o and 5^o year.

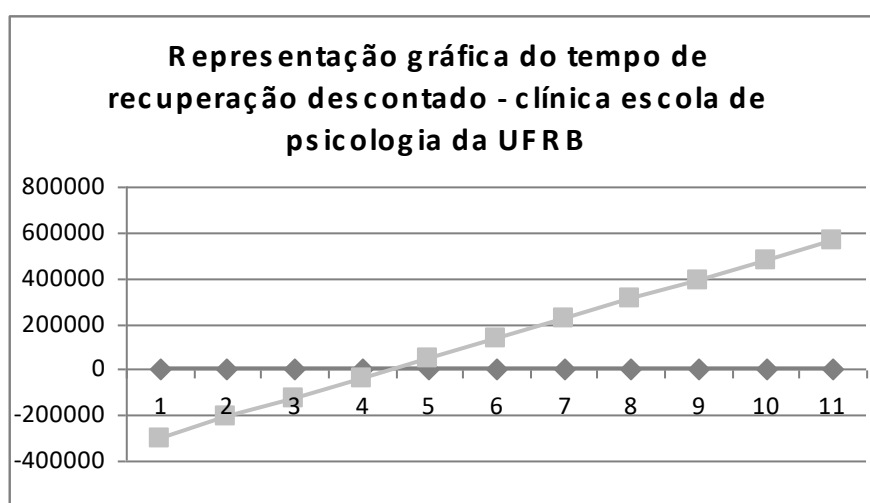
GRAPH 02



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Resource: Author's data

This recovery time demonstrates the economic and technical viability in time 0, for being the TRD, inferior to cash flow time.

CHART 05

LEGEND	
FLUXO CX < TRD	UNAVAILABLE PROJECT
FLUXO CX > TRD	AVAILABLE PROJECT
11 ANOS > 4 ANOS	AVAILABLE PROJECT

Resource: Author's data

Costs/ Benefits Index – IBC

Represents additional profits for each unit of spent capital, being its analysis resulted in function of the invested capital recovery, to the minimum tax of desired attractiveness, when this is equal to 1. Using again Excel spreadsheets, we have that IBC is 1,80.



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CHART 06

LEGEND	
IBC > 1	AVAILABLE PROJECT
IBC < 1	UNAVAILABLE PROJECT
XX > 1,80	AVAILABLE PROJECT

Resource: Author's data

This value represents that the investment received a compensation 80% bigger with the project accomplishment than if it were applied the indicated TMA.

Debate and Conclusion

When initiating this article, it was tried to answer which was the socio-economical probability of the existence of a school-clinic and which were the answers to the economic and technical feasibility study. To answer to these questions, it was done data research, interviews with professionals of the area, market and scientific research, and a search for primary and secondary data about the enterprise arrangement.

In the second part, it's in progress a scientific research about demand and offers profile in mental health in Santo Antonio de Jesus city. The analysis of different socio-economic elements suggests that the assumed model for the school-clinic must be hybrid, in a way that it assists devoid population and in lesser ratio, customers who can pay for the psychological attendance costs. The hybrid model turns to be the most appropriated model of a school-clinic for public universities and it offers them the possibility for self-sustainability.

Through the results of the economic feasibility study, it is possible to demonstrate that the economy instruments applied to health care, allow the development of sustainable projects. For the psychology school-clinic in UFRB it is possible to identify the variables that make this a viable project. Of this way, the institution implantation has fewer risks to present problems as queues, treatment abandonment, idle rooms, and in fact, it will be an agency inside of the university, capable to promote education, research and extension valuing quality.

These results can contribute to increase other feasibility studies of the health care area.



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The economy instruments usage for health care can reduce the failure of many public and private enterprises. Different actors in the public administration can adopt the analysis model tested in the present study to prevent budgetary unsuitability.

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