

Enabling the Disabled: The Case of a Social Project

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ABSTRACT

Most young adults or adolescents with Down syndrome stay at home after the age of 18. Educational centers and rehabilitation centers in Jordan do not accept individuals with Down syndrome above 18 years. The objective of the study is to conduct a financial analysis using capital budgeting techniques to understand if the project is financially feasible and profitable or not. The project is an educational center that is aimed to help young adults with Down syndrome some skills that help them engage in the real life and make them feel included. The methods used in the study were Net Present Value (NPV), Discounted Payback Period, Internal Rate of Return (IRR), and Sensitivity analysis. The data used in the study was gathered from sources such as the World Bank, educational center in the same field in Jordan, and the water and electricity ministries. The projected resulted with an NPV of 47,861.03 JD and an IRR of 16%. The sensitivity analysis tests the financial feasibility of the project under different scenarios to give a glimpse of what the future holds and a chance to take precaution may. The project was able to show good indications of financial feasibility. However, the risks may be high if some circumstances change. For the risk, a sensitivity analysis was done on the most effective parameters, which were the number of students, the fees charged, the salaries paid, and the rent paid. A change in these parameters whether negative or positive impacted the financial feasibility of the project.

Keywords: Down Syndrome, Capital Budgeting, Net Present Value (NPV), Internal Rate of Return (IRR), Discounted Payback Period, Sensitivity Analysis.

ÖZ

Down sendromlu genç yetişkinlerin veya ergenlerin çoğu 18 yaşından sonra evde kalmaktadır. Ürdün'deki eğitim merkezleri ve rehabilitasyon merkezleri 18 yaşın üzerindeki Down sendromlu bireyleri kabul etmemektedir. Çalışmanın amacı, projenin finansal olarak uygulanabilir ve karlı olup olmadığını anlamak için sermaye bütçeleme tekniklerini kullanarak bir finansal analiz yapmaktır. Proje, Down sendromlu genç yetişkinlere gerçek hayata katılmalarına ve kendilerini dahil hissetmelerini sağlayacak bazı beceriler kazandırmayı amaçlayan bir eğitim merkezidir. Çalışmada kullanılan yöntemler Net Bugünkü Değer (NPV), İndirimli Geri Ödeme Süresi, İç Getiri Oranı (IRR) ve Duyarlılık analizidir. Çalışmada kullanılan veriler, Dünya Bankası, Ürdün'de aynı alandaki eğitim merkezi, su ve elektrik bakanlıkları gibi kaynaklardan toplanmıştır. Öngörülen projenin 47,861,03 Ürdün dinarı NPV ve % 16 IRR ile sonuçlandı. Bu bulgular projenin uygulanabilir ve karlı olduğunu göstermektedir. Duyarlılık analizi, geleceğin neler getireceğine dair bir fikir vermek ve risklere karşı önlem alma için projenin finansal fizibilitesini farklı senaryolar altında test eder. Proje, mali fizibilite konusunda iyi göstergeler göstermeyi başardı. Bununla birlikte, bazı koşullar değişirse riskler yüksek olabilir. Risk için öğrenci sayısı, alınan ücretler, ödenen maaşlar ve ödenen kira gibi en etkili parametreler üzerinde bir duyarlılık analizi yapılmıştır. İster olumsuz ister olumlu olsun, bu parametrelerdeki bir değişiklik, projenin finansal fizibilitesini etkiledi.

Anahtar Kelimeler: Down Sendromu, Sermaye Bütçelemesi, Net Bugünkü Değer (NPV), İç Getiri Oranı (IRR), İndirimli Geri Ödeme Süresi, Duyarlılık Analizi.

DEDICATION

Dedicated to the most important people in my life:

To Naser, my backbone

To Nida, my trust

To Nadine, my sweetheart

To Raja, my inspiration

To Titto, Twixie, and Popsi, my blessings

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Chapter 1

INTRODUCTION

1.1 Background to the Study

“When you focus on someone's disability, you'll overlook their abilities, beauty and uniqueness. Once you learn to accept and love them for who they are, you subconsciously learn to love yourself unconditionally” (Pierre, 2010, p. 86).

They are angels on earth. They know nothing of hate and evil, but they are filled with love and happiness. Smiles are always drawn on their faces. Humans call them disabled, yet their abilities know no boundaries. This study targets the people with Down syndrome. To be more specific it targets adults of age 18 and above with Down syndrome.

According to the National Down Syndrome Society (2020), each cell of the human body has a nucleus that has genes, which store genetic materials. The genes contain codes that are responsible for all the traits inherited from both parents, which are called chromosomes. Normally, each cell nucleus would contain 23 pairs of chromosomes. Down syndrome develops when the individual has full or partial extra copy of chromosome 21.

In Jordan, there are several schools and rehabilitation centers for children with Down syndrome and other disabilities. They have centers specialized to deal and teach children with Down syndrome. Some centers provide early interventions for early stages such as infants. Other schools provide dorms and boarding school facilities to have intervention with the children around the clock.

However, all center and schools graduate their students at the age of 18, just like any normal school. The young adults are forced to stay at home because the society does not offer them many options.

The idea of the project is to open an entertaining/educational center for the young adults with Down syndrome that have already graduated from their schools. Instead of spending time at home without doing anything, this center would offer them several things. First, they get to socialize with people other than their family member, as result improving their communication and socializing skills. Second, they will spend their days learning some skills that would help them in their future, such as cooking, sewing clothes, doing handmade art, and carpentry. Third, the center will sponsor them to get part time jobs, teaching them how to earn their own money. Finally, the center will offer them entertainment such as different types of sports to keep them in shape and other fun activities throughout the academic year.

1.2 Objectives of the Study

Unlike other schools for the disabled in Jordan, this center will be a profitable business. It is more of a luxury than a commodity. However, the center does target a blue ocean. The aim of this research is to conduct full financial analysis and risk analysis to determine whether the project is feasible financially or not. The financial analysis will take

into consideration the different costs and expenses that will come along with this project. Moreover, to be able to measure the success of the project, a criterion of assessment should be chosen. In this study, the success of the project will be assessed according to the financial criteria. The project, pitched in this study, aims to try to fill a gap in a social problem. The problem is the lack of centers to welcome disabled young adults above the age of 18, who end up spending their time at home with little to do or offer. As a result, this project tends to help the disabled interact and become included in the society from a professional perspective. However, the center will be profit-based, since it is more of a luxury than a commodity, as mentioned before, and the government will not take part in it. Therefore, in order to keep it going, there is a need for it to be financially profitable. As a result, the project will be assessed and analyzed according to its financial feasibility and success.

1.3 Research Methodology

The research methodology consists of different stages. In the first stages, raw data will be collected from schools and rehabilitation centers for the disabled, as well as from the Ministry of Health, Ministry of Social Development, Ministry of Education, and the Higher Council for the Rights of Persons with disabilities. This data will help draw a better picture of targeted audience. In the second stage, information regarding the expenses and costs that are attached to this project will be collected to draw a better picture of the expenses and liabilities. In the third stage, the capital budgeting techniques will be applied to the data gathered. The methods used for capital budgeting are the discounted payback period method, the net present value method (NPV), the profitability index (PI), and the internal rate of return method (IRR) (Jenkins et. al. 2014; Brealy et al., 2012). As for the risk analysis, the sensitivity test will be used.

1.4 Implications of the Study

Unfortunately, during the first quarter of year 2020, a pandemic broke out around the world. Due to the pandemic the world had to go on lockdown. People all around had to quarantine to limit the spread of the disease. The lockdown affected this research. Data could not be collected as thoroughly as it would have been collected if the pandemic did not exist. The main source of information was the internet. Moreover, the schools and rehabilitation centers for persons with disabilities shut down their operations, making it extremely hard to contact them to collect information. Also, ministries closed their doors, which made it hard to obtain information regarding the licensing, statistics, and other information needed for the research. As a result, the study had to rely of rough estimates and assumptions. The research was supposed to take place of ground with survey and actual data and statistics. But the chances went the other way.

1.5 Structure of the Thesis

This study consists of six chapters in total. The first chapter is introduction, which will serve at introducing background information and the main problem the study aims to solve. The second chapter is the literature review. This chapter includes information gathered from different literatures that target the methods and topics regarding the study. The third chapter is the methodology, which discusses the method and data used to approach the problem. The fourth chapter is the results and discussion, where the results of the method are discussed in details. This chapter is a discussion regarding the results from the methodology. The sixth and final chapter is the conclusion. The conclusion chapter states a summary of the results of the study, as well as, future recommendations and limitations of the study.

Chapter 2

LITERATURE REVIEW

2.1 Down Syndrome

Down Syndrome (DS) is caused by a chromosomal disorder, in which there is a presence of part or a whole extra 21st chromosome. DS children were recognized to display a delay in development of motor and difficulties in performing functional motor (Wang et al., 2012). A study pursued the evaluation of the effects of training on the muscles strength and dynamic balance ability in adults with DS. The study was conducted on a group of 25 adults with the mean age of 24.5 with DS. Ten out of the 25 were considered the control group, while the other 15 were the experiment group. The members of the experiment group were subjected to perform tests for leg strength and dynamic balance abilities, in a specially tailored 12 week training program. The results of the study showed that experiment group displayed significant improvements when compared to the control group. Also, the study concluded that adults with DS have the ability to improve their physical and athletic abilities with the application of well-designed training programs (Tsimaras and Fotiadou, 2004).

Over the last two generations there was a great improvement in the life expectancy of individuals with DS. The life expectancy went from an average of 12 years to an average of 60 years. It is suggested that inactive individuals with DS age prematurely, in which health related problems that usually show on 70-year-old individuals would

show as early as 30-40 years old individuals. A study was conducted to learn the difference among young and old individuals with and without DS. All participants of the study were chosen from a residential care center. The experiment group consisted of 5 old individuals, with an average age of 57, with DS and 5 young individuals, with an average age of 30, with DS. The control group was matched individuals of the same gender and age but without DS. The tests for the younger individuals with DS were better than the old group with DS. The groups of old individuals with DS were able to accomplish the tests; however, they faced some injuries and health incidence. The study also showed that the group of the old individuals with DS was overweight. They also displayed signs of premature aging and functional declined and increase in morbidity. The study suggests that these problems are results of the inactive daily life led by the individuals with DS (Carmeli et al., 2012).

A research was conducted to answer the question of “Are early onset aging conditions correlated to daily activity functions in youth and adults with Down Syndrome?” After performing the required tests and studies, the answer to the question was yes. The studies proved that children and adolescents with DS that are engaged in daily life activities are not stopped by their disabilities. However, older individuals inactive dependent individuals with DS start face aging problems. The limitation or lack of daily life activities has a strong relationship to onset aging conditions. The results of the study showed that the most frequent onset gaining conditions in young and older individuals with DS are: frailty, vision problem, loss of language ability, sleep problem, and memory impairment (Lin et al., 2015).

A research paper claimed that youth with DS have a low aerobic capacity along with low heart rate peak. Also, individuals with DS have low muscular strength. However,

exercising and training to increase and utilize endurance and resistance demonstrated to be beneficial for young individuals with DS. The study also states that physical activity for individuals with DS declines as they grow up. The young individuals with DS do not meet the required daily dose of aerobic activity. An effective physical activity should be accompanied by other factors such as physiological, cognitive, and psychosocial factors. Also, the environment should be modified to serve the purpose (Pitetti et al., 2013).

2.2 Capital Budgeting

A research paper pursued the trends of more sophisticated investment selection techniques and their effect on capital budgeting practices. It is claimed that firms, which follow sophisticated capital budgeting techniques, such as net present value, should have more effective investment decision making than those using naïve methods, such as payback period, which has little to no control mechanisms. A questionnaire targeting UK's large firms was prepared in order to understand the capital budgeting techniques, controls, constraints, and objectives. The survey was run at two different points in time. The first run targeted 208 largest UK firms and was addressed to financial directors. The second run was 6 years later targeting 150 companies that participated in the first run. According to the study results, it was witnessed that there was a significant increase in the sophistication of capital budgeting. The study claims that more than one factor impacted the increase. The development of computer-based financial packages had a direct relation. Moreover, the use of more sophisticated discounted cash flow methods and post-completion audits were accompanied with high levels of capital investment effectiveness. The study was found that the adoption of sophisticated capital budgeting techniques has a positive impact on controlling and selecting capital projects (Pike, 1988).

A research was aimed at investigating companies' capital budgeting practices regarding strategic investments. The problem the research tackled was the allocation of scarce capital into investment opportunities. There is a diverse literature around the theoretical advances of sophisticated capital budgeting practices. However, these techniques assumed that only investments with expected excess in return at a minimum hurdle rate will create values for the company. The traditional methods of investment appraisal were criticized in the study, as it was claimed that they are biased and unable to provide the right information required to evaluate and support a project. The main aim of a firm's investment is to maximize the value. The theories around capital budgeting assume that the projects are assessed on economic grounds. Net present value and internal rate of return methods take into consideration the time value of money, risk aversion, and the expected goal maximized value. The risk notion in capital budgeting touch on the uncertainty the decision maker faces in generating cash-flow from the project, which might lead to unwanted losses or consequences. The study collected data from production managers in European companies that have been involved in investments in CIM technologies. The surveys were mailed questionnaires. The aim of the empirical study was to understand if investment in CIM technologies would be cost reducing or increasing productivity in the future. There were several problems that affected the decision making. However, the reoccurring problem of the overstatement of expected cost savings was one of the main issues in the research. The study goes on to explain that the literature in capital budgeting has failed to include all stages of the capital budgeting process. Also, there is little to none literature on explaining the actual steps of investment decision making in capital budgeting (Slagmulder et al., 1995).

A research disintegrated the capital budgeting procedures among different industries. The study claimed that it is easy to state the use of capital budgeting and how sophisticated it has become, yet it went out to answer the question of “whether different industries have followed the same pattern” when it comes to applying capital budgeting techniques. The research broke down the industries into the following categories (Block, 2005):

Table 1: Industry categories and subcategories

<i>Energy</i>	<i>Technology</i>
Oil & gas	Aerospace
Energy service	Computers
Petroleum refining	Computer software
Pipelines	Engineering
<i>Manufacturing</i>	Semiconductors
Automobiles	<i>Retail</i>
Chemicals	Household products
Electronics	Beverages
Metals	Food products
<i>Finance</i>	Drugstores
Commercials banks	Sporting goods
Insurance companies	<i>Healthcare</i>
Saving institutions	Hospitals
Brokerage firms	Pharmaceuticals
<i>Utilities</i>	Medical products
Electric utilities	<i>Transportation</i>
Gas utilities	Airlines
Communications	Railroads
	Freight delivery
	Trucking

Source: (Block, 2005).

A questionnaire was prepared and sent out to the financial officers of 302 companies from Fortune 1,000. The questionnaire covered five essential areas of capital budgeting. Afterwards, statistical tests were carried out to determine if there was any difference in the methodology used by different industries. The study concluded that just as

each industry follows different finance characteristics, each also deployed a different capital budgeting technique for their investment decisions (Block, 2005).

A research was conducted on the budgeting techniques practiced in Spain. The research aim consists of two parts. The first is to update the evidence and literature available on the practices of capital budgeting followed by Spanish companies. The second part is to shed light on the factors that determine the choice of capital budgeting technique. The data for the study was collected from surveys sent to 2000 non-financial Spanish companies. The most common capital budgeting techniques, according to the study, in Spain are Internal Rate of Return (IRR), Payback Period, and Net present value (NPV). The study also stated that new capital budgeting techniques are slowly evolving. That is due to the companies not wanting to abandon old and inferior techniques. However, the research concluded that Spanish companies use several tools. However, the most favorable is the payback period method, followed by IRR and NPV. Moreover, it was discovered that real options approach has been used in several companies, where growth and flexibility were among the value of the firm (Andres et al., 2015).

A study was conducted that focused on the effect of net present value (NPV) and real options reasoning (ROR) on the planning orientation of an innovative entrepreneurial firm. The research paper discussed that both NPV and planning have clear decision rules that built on the basis of whether a project will generate income and a positive NPV. Finance scholars refer to NPV as a cornerstone in capital budgeting because it provides rich and detailed statements of cost, capital expenditure, and revenue of a new investment. On the other hand, there is ROR planning orientation. Real options

reasoning is defined as “the right, but not the obligation to take an action at a predetermined cost called the exercise price, for a predetermined period of time – the life of the option” way of seeing projects. The study was set out to answer the question of “how do different kinds of planning orientations affect entrepreneurial firms’ innovation outputs?” A survey was sent out to a limited sample size of entrepreneurial start-ups. The study concluded that ROR planning orientation increases the innovation capabilities. However, if a firm is looking for strict up-front decisions while planning, then NPV is the way, even though it might have a negative effect on the innovation level of the firm (Hayward et al., 2017).

2.3 Capital Budgeting in Similar Projects

A study based in the education sector of South Africa had the purpose to create a financial model to find an optimized strategy for the capital budgeting for new schools. The study used cost-effectiveness analysis as the main tool for the analysis. The study compared between the construction of a new school or the renovation of existing schools. Through the available budget, the study aimed for the allocation that provides the highest effectiveness. For economic measurements, the study used rate of return to calculate which case provides the highest effectiveness (Zeinali et al., 2009).

Similar to the previous study, a study had an objective to use cost-effectiveness analysis to create an investment infrastructure for hospitals in South Africa. The government allocated a budget for either constructing new hospitals or renovating and bettering old hospitals. The methodology followed by the study is tailored to serve the purpose of the paper. For financial analysis, the present value of the future costs was calculated to compare between different cases (Munoz-Reyes and Jenkins, 2004).

Chapter 3

DATA AND METHODOLOGY

3.1 Project Introduction

Most educational and rehabilitation center for Down syndrome individuals accepts the age between newly born and 18 in Jordan. Individuals that 18 years and above are stuck home being taken care of by their parents or other family members. The aim of this study is to conduct a financial analysis using capital budgeting techniques for the investment in a center that welcomes adolescents with Down syndrome. The center will provide the members with classes that will teach them new skills and improve their existing skills to help them interact with the society and get included. The aim of the center is to help these individuals become part of the society. Also the center will help the parents or other family members spend less time taking care of their loved ones and having the opportunity to do what they want.

3.2 Data

To be able to do the financial analysis for the center, some data is essential. Due to Covid-19, most of the prices, costs, information etc. was collected from legit online sources, such as the World Bank. To perform NPV, IRR, and discounted payback period, data regarding the rent, the appliances' prices, the interest rates, the currency change rates and the inflation rate, domestically and foreign, were needed. The currency used in this study in the Jordanian Dinar. According to the World Bank, the

forecasted inflation rate for years 2020, 2021, and 2022 are 2%, 2.5%, and 2.5%, respectively. To be more accurate with this study, it was assumed that the inflation rate would increase by half a percent every five years. As for the foreign currency, the United States Dollar was chosen as it has a fixed exchange rate with the Jordanian Dinar, at 0.709 JD/USD According to the latest reports by the World Bank, the inflation rate for the United States is 1.7 percent. For this research, the foreign inflation rate will stay the same throughout the study. Assuming all goes well and the application for a loan is accepted, it will be withdrawn from the Arab Bank, as a personal loan, with an interest rate of 10.25%. The project is planned to be financed as 60% equity and 40% debt. Moreover, the study assumed the project will run for 20 years.

3.2.1 Building Cost

The building will be rented out throughout the period of 20 years at an annual rent of 50,000 JD. The area of the building along with the surrounding garden is estimated to be around 700 sq. meters. Moreover, it is located in Western Amman, Abdoun, Amman, the capital of Jordan. In year 0, few renovations are assumed to take place in order to make the building more appropriate. These changes include putting field grass all around the building so the members can enjoy their sport activities easily and safely. These renovations are assumed to be 5,000 JD.

3.2.2 Labor Cost

The staff team consists of 13 members. The number of employees and their positions, along with their estimated annual salaries were determined based on observations made on similar centers. Table 2, below, lists the staff employed for each position with their estimated annual salary in Jordanian Dinar.

Table 2: Employee position, number, and salary in JD

Staff	#	Salary	Currency
Supervisor	1	9,600.00	JD
Accountant	1	7,800.00	JD
Art Teacher	1	6,000.00	JD
Sports Instructor	2	6,000.00	JD
Cooking Teacher	1	6,000.00	JD
Sewing Teacher	1	6,000.00	JD
Woodshop Teacher	1	6,000.00	JD
Handcraft Teacher	1	6,000.00	JD
Computer Teacher	1	6,000.00	JD
Assistants	7	5,400.00	JD
Cleaners	4	3,000.00	JD
Security	1	3,000.00	JD
Driver	1	3,600.00	JD

3.2.3 Material and Equipment Cost

As for the equipment to be bought for the center, as listed in table 3 below, were chosen according to the classes the center will be offering. The prices were gathered from a Jordanian online shopping store called UBuy. However, for the sake of the study, the equipment is assumed to die in 5 years. The assumption was made because the equipment and material are small and do not enjoy a long life span. In the 6th year, the full list of equipment is supposed to be bought again. As a result, the same equipment will be bought again on year 6, 12, and 18, respectively.

Table 3: Equipment, price, and currency

Material and Equipment	#	Price	Currency
Treadmill Machine	8	600.00	JD
Ping-Pong Table	1	450.00	JD
Epileptically Machine	10	200.00	JD
Cycling Machine	10	220.00	JD
Sewing Machines	17	100.00	JD
Manual Saw	4	25.00	JD
Electronic Saw	4	60.00	JD
Drill	5	45.00	JD
Wood File	7	30.00	JD

Refrigerator	2	1,100.00	JD
Gas	1	700.00	JD
Baking oven	4	197.00	JD
Hotplate	2	20.00	JD
Glue Gun	17	14.00	JD
Television	3	250.00	JD
Security Camera Set	1	170.00	JD
Computers	18	400.00	JD
Printer	1	300.00	JD

As for the material, to be worked or used inside the class, each department was set a monthly budget to supply them with the materials needed to deliver what is promised. Table 4, below, displays each class and its budget.

Table 4: Monthly budget for each class's material

Handcraft material costs	350	JD/month
Food, Beverage, and Cooking material	500	JD/month
Wood workshop material	600	JD/month
Art material	200	JD/month
Sewing material	650	JD/month

3.2.4 Investment Cost

The investment costs were assumed as all the costs pumped into the project in year 0. The first major cost of the investment is the annual rent of the building. The first year's rent is computed under the investment cost. The next cost was the equipment and material bought in the first year to prepare for the opening of the center. As for the staff, not the whole team will start from year 0. The only employees working are the cleaners, the security, and the driver. These employees are essential in putting everything in place before the startup of the project. In the coming years, the cost of cost will increase

significantly because all the staff will be put to work. However, that cost is not considered under investment cost. The last cost under investment costs is the technical cost. This cost includes the installation of all the equipment and running them, such as the computers and the security cameras. Table 5, below, summarizes the investment costs.

Table 5: Summary of investment costs

Summary of Investment Costs		
Building and Land costs	JD	55,000.00
Material and Equipment Costs	JD	24311.00
Staff	JD	18600.00
Technical Costs	JD	2,350.00
Total	JD	100,261.00

3.2.5 Annual Operating Costs

The operating cost is the cost of day-to-day business. These costs include rent, raw material, overhead costs, direct costs, etc. For this project, the operating expenses were:

- Electricity: In Jordan, electricity is considered expensive. The center will consume large amounts of electricity to run the classes. Also, the air conditioners of the center will consume a lot of electricity, whether in winter for warmth, or summer for coolness.
- Water: Same as electricity, water is considered a scarce resource in Jordan. As a result, it is expensive. The water costs include the toilette water consumption, as well as the water consumed in the kitchen and the sinks.
- The rent: the rent of the building, starting from year 1, will be considered as an operating cost.

- Salaries: The salary of the full team of staff is considered as an operating cost, since it is reoccurring monthly and annually.
- Maintenance cost: The maintenance cost is considered to be 5% of the total investment cost. The maintenance costs include any minor to major costs spent on maintaining the quality of the services provided by the center.
- Material and Equipment: As discussed above, the life span of the material and equipment bought in year 0 is considered to be 5 years. As a result, their costs will occur again in year 6, 12, and 18. Therefore, they are also considered as operating costs.
- The budget set for the raw material required for each class in the center is also considered as an operating cost. Each class is given a monthly budget, which is then computed annually to express their annual operating cost.

3.2.6 Working Capital

Working capital is a measurement of liquidity. It is the difference between current assets and current liabilities. In this study to calculate the working capital, the account payables were assumed to be 12% of the total annual operating costs. Similarly, the cash balance in was considered to be also 12% of the annual operating costs. Afterwards, the changes in accounts payables and the changes in the cash balance were calculated to conclude the working capital of the center.

3.3 Net Present Value

A research discussed the use of net present value method and heuristic methods incorporates for investment decision making. The research claimed that net present value to be is a widely used tool for decisions in investment. In a nutshell, the NPV method states that the investment is good to go if it has a positive NPV. In cases with more than one mutually exclusive project, the NPV should be calculated for each project

and choose the one with biggest NPV. However, literature around corporate finance claims that NPV method is used by actual decision makers, yet they do not use the cost of capital suggested by corporate finance textbooks. Instead, they use a subjective hurdle rate. The study claims that particular hurdle rates can provide “close-to-optimal” investment decisions. The research goes on to explain the Capital Asset Pricing Model, which is a model developed by finance corporates to explain the relationship between risk and return. The research concluded in the end that firms use NPV but with a hurdle rate instead of capital cost for investment decisions. However, the hurdle rate can be affected by several factors (Magni, 2009).

In 2014, Amy Gallo wrote a research to explain NPV. She defined NPV as a method used to calculate the return on investment for a project or expenditure. The NPV translates all the money and return that will be returned from the project into their dollar value of today to determine whether this project or expenditure is worthwhile. NPV is usually used by companies to compare between projects and determine which one to pursue. There are different options to determine which project to undergo like payback method and internal rate of return; however, NPV is the most commonly used method. That is because NPV takes time value of money into consideration and it provides concrete numbers that managers can use to compare and decide. Moreover, NPV can be used for large purchases of software, machines, and equipment and for mergers and acquisitions. The calculation for NPV is as follows:

$$\text{Net Present Value} = \sum \frac{\text{Year } n \text{ Total Cash Flow}}{(1 + \text{Discount Rate})^n} \quad (1)$$

If the NPV is positive, then the project is worthwhile. If NPV is negative, then pursuing the project or not does not make any difference. If the NPV is negative, then the project should be turned down. Gallo (2014) [10] also explained the common mistakes done

when using NPV. The first mistake is not being able to explain clearly what NPV is and why it is used. The second mistake is that managers do not keep in mind that NPV can be built on several assumptions and estimates; as a result there is a big room for mistakes. Also, there are risks that accompany NPV. First, if the ambiguity of the initial investment has a drastic impact of the NPV. Second, the discount rate used to calculate the NPV has another major effect on the results. Third, points to the mistakes made in estimating the projected return.

Zizlavsky (2014) wrote a research with the aim to analyze and gain more knowledge on the performance measurements by net present value. The study claimed that to assess the success of any innovation, a criterion for assessment should be chosen, whether technical, economic, or other. In his research, he pursued to assess the success based on economic success. The researcher stated that there are different method implementations, yet they all share a common factor, which is capital budgeting for calculating the economic return of the innovation. The most popular method for valuation is the NPV. The method followed by the research was literature analysis and comparison. The professional and foreign literature was considered as a secondary data resource. Afterwards, different NPV approaches were compared. To conclude, the study drew a fundamental problem with using the NPV approach, which lies in the usage of average probabilities of success and occurrence.

3.4 Discounted Payback Period

In 1985, Shyam Bhandari published a study that aimed to suggest and discuss a substitute method to payback period method, called discounted payback period. Bhandari claimed that, unlike the payback period, the discounted payback period takes into consideration the time value of money, retains the useful properties of payback period,

and eliminates some of the payback period drawbacks. The study discusses the advantages and disadvantages of payback period method. Some of the advantages are that it is easy to calculate and understand, it emphasizes on the liquidity aspect of the investment, is a measure of resolution of uncertainty, and a breakeven concept deployed frequently by businessmen. On the other hand, its disadvantages are the lack of consideration of time value of money and it ignores the cash inflows after the payback period of the project. As a result it does not measure the profitability of an investment. Anyhow, the discounted payback period could be used as a decision maker. It can be used to compare independent or mutually exclusive projects. To accept a project, the discounted payback period should be less than or equal to the pre-specified period. For mutually exclusive projects, the project with the shortest discounted payback period should be chosen. According to Bhandari, projects that are selected by discounted payback period are guaranteed to be profitable, since the method takes into consideration the time value of money and discounting cash flows at the required rate of return. Another aspect stated by the research is that discounted payback period has a relationship with other discount cash flow criteria, in which the discounted payback period provides the time horizon at which the cumulative NPV equals zero, IRR equals the cost of capital, and the profitability index equals one. An additional advantage of the discounted payback period is that, for independent projects, it will give the same accept-reject decision as NPV. The research concluded that the discounted payback period could serve as a substitute to payback period, since it is unsophisticated and theoretically wrong. The discounted payback period could be considered an updated or a sophisticated version of the payback period (Bhandari, 1985). The discounted payback period is used to show investors how long the investment will take to pay back their money.

3.5 Internal Rate of Return

Arrow and Levhari (1969) discuss the uniqueness of the Internal Rate of Return. They state that even though IRR faces many limitations and objections, it is used as selection criterion for investment projects. However, they state that it is common knowledge that an income earning investment might have more than one IRR. The authors explained that economists were able to prove the theory that if it is possible and feasible to truncate an investment and if the investor chooses to truncate the investment at the period of time that maximizes the internal rate of return, then the project has a unique IRR.

Hartman and Schafrick (2004) stated in their study that the Internal Rate of Return (IRR) is the interest rate at which the net present value equals zero. According to the study the IRR measure of worth projects to evaluate their worth. However, when the IRR is unique it could define the returns of an investment or can be the measure of efficiency. For an investment project, the IRR is usually compared to the discount rate. When the IRR is greater than the discount rate, then the project is acceptable. However, in the case of loans, the IRR must be less than the discount rate. The authors stated that the IRR has many documented drawbacks. These drawbacks vary from the hardship of calculating the IRR for projects, as it requires solving high order of polynomials. However, this problem has been solved through the use of personal computers and software. Nevertheless, other problems that are accompanied with IRR are multiple IRR or no IRR for a project. In such cases, it is hard to interpret the IRR and the analysis is not direct. Another problem faced by IRR is that it only works on mutually exclusive projects.

3.6 Risk Sensitivity Test

Sensitivity Analysis is the process of calculating the effect of changes in the input on the output. In other words, the sensitivity analysis calculates the “what-if” scenarios that could happen and their impact on the investment. It calculates the changes in certain inputs, such as income, costs, and value of investment, and how it may affect the outcome of the investment. It is a method of calculating the uncertainty and risk that may accompany an investment project. It is used as an evaluation of risk criteria for investment projects. The sensitivity analysis demonstrates the minimum and maximum points at which an investment project can still be acceptable and feasible. Sensitivity analysis does not only aim to show the impact of changes of different inputs on the outputs, but rather to help understand the impact of these changes on the total evaluation of the investment project and its validity. Another purpose of the sensitivity analysis is to draw a map of actions or steps to be followed on certain variables to avoid undesired changes of the input values. To apply sensitivity analysis, after the quantitative criteria for the investment evaluation are decided, the input values that will influence the investment project are defined, such as the income of the investment or the discount rate. Then, a range will be set in which the values can fluctuate between for each value or criteria. The calculations will be made for the range for the values to display the minimum and maximum points that will keep the investment project feasible. The final step is to analyze and interpret the results and calculations to come up with a plan to prevent or avoid adverse impacts and to apply some improvements (Jovanic, 1999).

Some of the drawbacks to sensitivity analysis are (Brealy et al., 2012):

1. Sensitivity analysis can give ambiguous results. That means the answers provided from a sensitivity analysis can be explained differently from different perspectives.
2. The underlying variables can be interrelated. The isolation in the variables does not make sense. For example, looking the market size in isolation will not tell that the demand may increase if the market size increases, and so on.

3.7 Financial Analysis

The aim of this study is to do a thorough financial analysis for an investment project. To perform a proper financial analysis, a cash flow was created. The cash flow was split into two sections. The first section is the cash inflow. In this section all the cash flows into the project were calculated. The main and only source of cash flow in the project is the fees paid by the student or member of the center. To forecast for the nominal future cash inflow, the domestic inflation index was used. The second section was the cash outflows. The cash outflows consisted of all the expenditures, such as the investment costs and operating costs. Similar to the cash inflows, the domestic inflation index was used to forecast the nominal future. The cash inflows and outflows were also calculated in real terms, not only in nominal terms.

The project is to be financed 40% by a loan and 60% by equity. The debt repayment period starts in year to and continues for 8 years. The loan's contribution to the investment cost was 40,104.40 JD. Table 5, below, displays the calculations done for the loan repayment. According to table 5, by year 9 the loan will be repaid fully with the nominal interest rate. The nominal interest rate was calculated in the first step, in which it was the result of compounding the interest rate given by the bank and the inflation rate. The interest accrued is the nominal interest percentage of the beginning debt. As

the years pass, the beginning debt starts to decrease and so does the interest accrued. The principal payment is the amount of loan disbursed divided over the repayment year. The total debt repayment scheduled shows the sum of the interest accrued and the loan principal payment.

Table 6: Loan repayment schedule

Year		0	1	2	3	4	5	6	7	8	9
Nominal Interest Rate	%	12.46%	13.01%	13.01%	13.01%	13.01%	13.01%	13.56%	13.56%	13.56%	13.56%
Loan Disbursement	J D	40104.4	0	0	0	0	0	0	0	0	0
Beginning Debt	J D	0	40104.4	40104.4	35091.35	30078.3	25065.25	20052.2	15039.15	10026.1	5013.05
Interest Accrued	J D	0	0	5216.079	4564.069	3912.059	3260.049	2718.577	2038.933	1359.289	679.6443
Principal payment	J D	0	0	5013.05	5013.05	5013.05	5013.05	5013.05	5013.05	5013.05	5013.05
Interest paid	J D	0	0	5216.07	4564.06	3912.05	3260.04	2718.57	2038.93	1359.28	679.644
Total Debt repayment scheduled	J D	0	0	10229.1	9577.11	8925.10	8273.09	7731.62	7051.98	6372.33	5692.69
Ending Debt	J D	40104.4	40104.4	35091.35	30078.3	25065.25	20052.2	15039.15	10026.1	5013.05	0

After creating the cash flow statements, the next step was to calculate the Annual Debt Service Coverage Ratio. ADSCR is a measurement that demonstrates whether a company has the cash for pay for its debt. It is also used by lenders to see whether there is enough cash flow to service their debt.

Table 7: ADSCR

Annual Debt Service Coverage Ratio										
Net Cash flow	J D	42,685.7	14,822.2	14,461.2	32,235.1	51,136.9	71,143.8	82,290.8	84,759.6	
Total Debt Repayment Scheduled	J D	10,229.1	9,577.1	8,925.1	8,273.1	7,731.6	7,052.0	6,372.3	5,692.7	

Annual Debt Service Coverage Ratio - ADSCR	#	-4.2	-1.5	1.6	3.9	6.6	10.1	12.9	14.9
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Following the ADSCR, the Loan Life Coverage Ratio was calculated. LLCR is similar to ADSCR, in which they both are financial ratios that measure the ability of a firm to pay back its debt. Unlike ADSCR, LLCR is used more commonly in financing projects because it has a long term nature. LLCR covers the entire span of the debt.

Table 8: LLCR

Net Cash Flow Available for Debt Service - Nominal	J	42,685	14,822	14,461	32,235	51,136	71,143	82,290	84,75
	D	.7	.2	.2	.1	.9	.8	.8	9.6
Total Debt Repayment Scheduled	J	10,229	9,577.	8,925.	8,273.	7,731.	7,052.	6,372.	5,692
	D	.1	1	1	1	6	0	3	.7
PV of NCF Available for Debt Service - Nominal	J	127,72	191,63	232,17	244,83	239,07	211,34	157,66	84,75
	D	7.6	8.3	5.1	0.2	3.9	4.6	2.8	9.6
PV of Loan Repayment	J	46,030	40,260	34,504	28,765	23,044	17,220	11,434	5,692
	D	.2	.1	.5	.3	.5	.1	.5	.7

After calculating the ADSCR and LLCR, a financial analysis from the equity holder's perspective was done, both in nominal and real terms. The point of the financial analysis from the perspective of equity holder was to understand the changes in the cash flow after the debt amount was financed to the project. The equity holder's financial

analysis calculated the net cash flow before and after financing. Moreover, to understand the cash flow available after paying the debt principal and the net cash flow after financing.

3.8 Methods Used

In order to determine whether it is an acceptable project or not, NPV, IRR, and discounted payback period were chosen as decision making criteria. In order to apply NPV, IRR, or discounted payback period, certain information and data were collected. Every single detail has to be calculated in order to extract proper final results. The starting point was to calculate the domestic inflation index all the way to calculating the NPV, IRR, and Discounted Payback Period.

For the sake of the study, we assumed that center will run at full capacity of 108 students, they will be split evenly according to the payment type as shown in table 7, below.

Table 9: Types of fees

Annual Full payment	2,700.00	JD
Semi-annual payment per semester	1,500.00	JD/semester
Quarter payment every 3 months	1,000.00	JD/3months
Monthly payment	250.00	JD/month

To be more accurate, however, it does not make sense the center will be up and running at full capacity from the first year. As a result, it was assumed the only 30% of the first payment method will join. With every year, an increase of 10% will be added. As for the second type of payment, that 40% will join in the first year, and will increase by 10% every year. As for 5698the last two types of payments, 70% will join and the capacity will increase 10% every year.

All the steps mentioned above were directed to accomplish the next section of the methodology. After calculating all the inflows and outflows, a financial analysis was created, that displayed every inflow to the project and every outflow. The financial analysis was done twice, once nominal and once real. Then the annual debt service coverage ratio and the life loan coverage ratio were calculated.

Using the data gathered and calculated, Microsoft Excel was used to calculate the three decision criteria chosen for this project:

- NPV
- IRR
- Discounted Payback Period before Financing
- Discounted Payback Period after Financing.

The discount rate used for this study was 13%. The aim of the financial analysis was to test if the project will be able to generate income, cover its costs, and service its debt. For the NPV, the net cash flow after financing was used at the rate of 13%, using Excel's NPV function. Similarly, the net cash flow after financing was used as well to calculate the IRR, using Excel's IRR function. As for the discounted payback period, it was done twice on different net cash flows. The first discounted payback period was done using the net cash flow before financing. Next, the net cash flow after financing was used. Since Excel does not have a ready to go function for the discounted payback period, first the PV (Present Value) function was used. Then the difference between the PV of each year was calculated.

After calculating the NPV, IRR, and Discounted Payback Period, the sensitivity analysis was carried out. The goal of the sensitivity analysis is to carry out different scenarios and understand their impacts on the NPV, IRR and Discounted Payback Period of the project. The sensitivity analysis also gives warnings about the future and helps prepare for a precaution plan to save the project. Four parameters were used to undergo the sensitivity analysis. The first parameter was the number of students. It was chosen because the number of students impacts the cash inflow. The increase and decrease in the number of students can have a major impact on the project. The second parameter was the change in fees. Fees are the only cash inflow in the project. The fees mainly represent the selling price of the service sold. A decrease or an increase has a direct relationship to the net cash flow, the NPV, IRR, and discounted payback period. The third parameter chosen was the change in the staff's salaries. The staff salary is a big portion of the cash outflow. Therefore, any change, whether positive or negative will have a direct link to the net cash flow. The final parameter was the annual rent. The annual rent was chosen because it composes the biggest chunk of the investment cost and the operating costs. Any change can have direct impact on the study.

Chapter 4

RESULTS AND DISCUSSION

This chapter will provide the results of the techniques used in the study. In addition, it will also include a discussion revolving around the results and the reasons that are assumed affect the results.

4.1 ADSCR

As in the previous chapter, the ADSCR calculation for the first 3 years is below zero, which is undesired by bankers or lenders. Even, an ADSCR that is around one is not accepted by all bankers or lenders, and some would accept it but with very high interest rates. To solve the problem of the low ADSCR in the first few years there are several suggestions, which are:

- Try to decrease the interest rate of the loan. As a result, the interest amount will be smaller, leading to smaller principals. However, this method is hard to obtain as it requires guarantees from the government or subsidies.
- Try to decrease the borrowed amount to have smaller principals.
- Try increasing the loan repayment period. This way the installment will be smaller over a longer period of time.
- Loan restructuring: is restructuring the terms of the loan to make the ADSCR look better. This could be done by paying smaller principal amounts in the first years and increasing them in size with time.
- Try bridge financing, which means taking an extra loan to payback the annual installments of the previous loan.

4.2 Cash Flow

The cash inflow of the financial analysis consisted of the money paid for the service provided by the center. The cash flow is calculated one in nominal term and once in real terms. Since the center is not a non-profit organization, there is no monetary support from the government or any donations from charity organization. In year 0, there is no cash inflow because the center will not be put to work. However, from year 1 onwards, the center starts to generate cash inflows. The nominal cash inflow displays the expected returns that are adjusted according to the inflation rate. In contrast, the real cash flow displays the money expected to be generated without taking into account the effect of the inflation. At the beginning, the difference between both cash flows is minor. However, as the years move on, the difference increases.

On the other side of the cash flow, there is the cash outflow. The cash outflow is composed of all the expenditures that are assumed to happen. The cash outflows start occurring from year 0. Like the cash inflow, the cash outflow is also calculated in both nominal and real terms. Similar to the cash inflows, the difference in the beginning between both cash flows is minor and grows with time. Just like the growth in the nominal cash inflow, there is also growth in the cash outflow. In the net cash flow, which is the cash inflow less the cash outflow, the numbers are negative for the first three years, for both nominal and real terms. The cash flows are also calculated after financing. The cash flow is calculated after financing for the equity holder to have a better understanding of the expenditure and the inflows. The investment cost of the project is approximately 102,000 JD. The loan is supposed to finance 40% of the project. Therefore, after financing the investment cost is approximately 62,000 JD.

The cash flow after financing also takes into consideration the principal payment of the loan along with the interest accrued.

4.3 Net Present Value

NPV is the most used decision criteria for investment projects. As mentioned in the previous chapter, Net Present Value can have three outcomes. The first outcome is negative, which means that the project is a loss and should be rejected. The second outcome would be zero. NPV that equals to zero means the project does not make any difference. It will not cause any loss or profit. In other words, the money invested today will have the same value at the end of the project. The final outcome is positive. A project with a positive NPV is acceptable.

In this study, the NPV was performed on the cash flow before financing and the cash flow after financing. The project gave a positive NPV. The NPV for before and after financing was positive. This demonstrates that even though the net cash flow for the first few years is negative, yet the project has the ability to pick up the pace and cover its expenditures. Not only that, but the NPV also indicates the project will generate profit. In other words, the NPV claims that the money invested today in the project will be paid back and more. That is an indication that the project is a good investment and should be accepted. Table 10 and 11 represent the cash flow from the equity holder's point of view in real terms. These cash flows were used to calculate the NPV of the project. The cash flow of the equity's holder perspective makes things easier for investors to understand. It displays the net cash flow that is remaining after the debt is paid and debt payment. The difference between both results is the net cash flow after financing. As for table 12, it displays the results of the NPV before and after financing. In both cases, the NPV indicated the project is profitable and good to go. As seen in

the table below, the NPV for the cash flow before financing is higher. That is due to the lack of the principal payments of the loan in the cash outflow.

Add Inflow of Loan											
Senior Debt Contribution towards Total Investment Cost	JD	0	0	0	0	0	0	0	0	0	0
Net Cash Flow Available after Debt Repayment	JD	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10
Total Loan repayment	JD	0	0	0	0	0	0	0	0	0	0
Net Cash Flow after Financing	JD	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10

Table 12: NPV results

Discount rate	13%	%
NPV before Financing	123,475.28	JD
NPV After Financing	47,861.03	JD

4.4 Internal Rate of Return

The IRR is the measurement of the profit an investment is supposed to generate. The discount rate that is calculated as the IRR sets the NPV to zero. The higher the IRR is the better. Rule of thumb states that an IRR between 15% and 20% is a good indication of an investment project. It is also stated that an IRR is preferred to be greater than the discount rate. For this study, the discount rate used was 13%. The IRR after financing generated is 16%. The IRR generated for the cash flow before financing is 18%. The same reason that caused the NPV for the cash flow before financing to be high is responsible for the IRR for the cash flow before financing to be high. That is because in the cash flow before financing, the loan principal payments were not considered. The first positive indication is that the IRR of the project is between 15% and 20%. The second positive indication is that the IRR is greater than the discount rate used in the project. Tables 13 and 14 represent the cash flow from the equity holder's perspective. The results are shown in the Table 15, below.

Table 13: Cash flow from equity perspective from year 0 to 10 (real)

Years		0	1	2	3	4	5	6	7	8	9	10
Total Inflows	JD	-	134,595.00	161,460.00	188,325.00	215,190.00	230,580.00	245,970.00	261,360.00	268,650.00	268,650.00	268,650.00
Total Outflows	JD	102411.52	201,963.57	202088.89	202088.89	202088.89	202088.89	202088.89	202088.89	202088.89	202088.89	202088.89
Net Cash flow before financing	JD	(102,411.52)	(67,368.57)	(40,628.90)	(13,763.90)	13,101.10	28,491.10	43,881.10	59,271.10	66,561.10	66,561.10	66,561.10
Add Inflow of Loan												
Senior Debt Contribution towards Total Investment Cost	JD	40104.4	0	0	0	0	0	0	0	0	0	0
Net Cash Flow Available after Debt Repayment	JD	(62,307.12)	(67,368.57)	(40,628.90)	(13,763.90)	13,101.10	28,491.10	43,881.10	59,271.10	66,561.10	66,561.10	66,561.10
Total Loan repayment	JD	0	0	9736.23	8893.306	8085.70	7312.21	6634.59	5875.12	5154.27	4470.43	0
Net Cash Flow after Financing	JD	(62,307.12)	(67,368.57)	(50,365.13)	(22,657.20)	5,015.40	21,178.89	37,246.51	53,395.97	61,406.83	62,090.67	66,561.10

Table 14: Cash flow from equity perspective from year 11 to 20 (real)

Years		11	12	13	14	15	16	17	18	19	20
Total Inflows	JD	268,650.00	268,650.00	268,650.00	268,650.00	268,650.00	268,650.00	268,650.00	268,650.00	268,650.00	268,650.00
Total Outflows	JD	202088.89	202088.89	202088.89	202088.89	202088.89	202088.89	202088.89	202088.89	202088.89	202088.89
Net Cash flow before financing	JD	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10
Add Inflow of Loan											
Senior Debt Contribution towards Total Investment Cost	JD	0	0	0	0	0	0	0	0	0	0
Net Cash Flow Available after Debt Repayment	JD	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10
Total Loan repayment	JD	0	0	0	0	0	0	0	0	0	0
Net Cash Flow after Financing	JD	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10

Table 15: IRR results

Discount rate	13%	%
IRR after financing	16%	%
IRR before financing	18%	%

4.5 Discounted Payback Period

Discounted payback period is a metric decision making used in capital budgeting. It is integrated from the simple method of payback period. The discounted payback period gives the period, in years, at which the project will breakeven from the investment expenditures. In other words, the discounted payback period shows the investors how long it will take the investment to pay back their money. The difference between the payback period and the discounted payback period is that the latter takes into consideration the time value of money. For this project, the discounted payback period is done once on the net cash flow before financing and resulted with 11.82 years, as shown in table 16, below. As for the payback period done on the net cash flow after financing, the result is 8.58 years, as shown in the table below. Usually, companies set a desired payback period to determine whether to take the project or not. However, in this study no period was specified. The discounted payback period was used to give an idea at which point will the project breakeven. The discounted payback period is still being developed. However, it is not considered a very precise and accurate decision criterion. In this case it was used as a support to the NPV and IRR. Since all three criterion gave a positive result, the project is displayed a good investment.

Table 16: Discounted payback period results

Discount rate	13%	%
Discounted Payback Period before Financing	11.82	years
Discounted Payback Period after Financing	8.58	years

4.6 Sensitivity Analysis

The sensitivity analysis tests the investment under different conditions. It is required because the future is not guaranteed, and no matter how precise the financial analysis

is there are always unpredictable events that can take place. For this project, the sensitivity analysis was done on parameters that could have the highest impact on the success or failure of the project. However, keep in mind that sensitivity analysis, like every method, has its own drawbacks. A major drawback in the sensitivity analysis is that it isolates each variable to test its sensitivity. This drawback overlooks the interrelation between the variables and their effects on each other. Another drawback is that the sensitivity analysis can give ambiguous results, which can be read differently from different perspectives.

4.6.1 Change in Number of Students

The first parameter was the change in number of students. As it turned out, the case of this investment is extremely sensitive to the number of students. Since the project is in the service sector, the number of students is the number of customers that will buy the service. If the number of students decreases, that will take a down toll on the project. On the other hand, if the number of students increases, that will indicate that the project is succeeding and will have a good impact on the financials of the project. To apply the sensitivity analysis, the number of students is put under different scenarios. The number of students was decreased by 10%, 20, and 30%, respectively. Similarly, the number was also increased by 10% and 20%. The increase and decrease impacted the NPV, IRR, Discounted payback period, ADSCR, and LLCR of the project. Logically, as the number of students dropped, so did these indicators. If a 30% decrease occurred to the number of students, the NPV will become negative, decreasing by 980%, there is no IRR, the discounted payback period will be more than 20 years, increasing by at least 69%, the ADSCR and the LLCR will become negative for the first 2 years of loan repayment, implying that the project is unable to repay its debt. As for the best case scenario, an increase of 20% in the number of students will raise the indicators over

the top. The NPV will increase significantly by 635%, as well as the IRR by 122%. The payback period will drop by 51%, and the LLCR will increase tremendously. As for the ADSCR, it will be negative for the first year of loan repayment. Table 17, below, displays the sensitivity analysis for the change in number of students. Table 18, below, is a display of the results for the analysis.

Table 17: Sensitivity analysis for the change in number of students

	NPV	Dis- counte d Pay- back Period	IRR	ADSCR- 2	ADSCR- 3	ADSCR- 4	ADSCR- 5	ADSCR- 6	ADSCR- 7	ADSCR- 8	ADSCR- 9	LLCR- 2	LLCR- 3	LLCR- 4	LLCR- 5	LLCR- 6	LLCR- 7	LLCR- 8	LLCR- 9
	47,861.03	11.82	16%	(4.17)	(1.55)	1.62	3.90	6.61	10.09	12.91	14.89	2.77	4.76	6.73	8.51	10.37	12.27	13.79	14.89
30 %	(420,591.6 1)	>20	#NUM !	(9.15)	(7.90)	(6.36)	(5.56)	(4.51)	(3.26)	(2.72)	(3.14)	(6.28)	(5.46)	(4.70)	(4.12)	(3.54)	(3.05)	(2.91)	(3.14)
20 %	(264,440.7 3)	>20	-7%	(7.49)	(5.78)	(3.70)	(2.41)	(0.80)	1.19	2.49	2.87	(3.26)	(2.06)	(0.89)	0.09	1.10	2.06	2.66	2.87
10 %	(108,289.8 5)	>20	0.06	(5.83)	(3.67)	(1.04)	0.74	2.91	5.64	7.70	8.88	(0.24)	1.35	2.92	4.30	5.74	7.17	8.22	8.88
10 %	204,011.92	7.71	25%	(2.51)	0.57	4.28	7.05	10.32	14.54	18.13	20.90	5.79	8.17	10.54	12.72	15.01	17.38	19.35	20.90
20 %	360,162.80	5.85	35%	(0.86)	2.69	6.94	10.20	14.03	18.99	23.34	26.91	8.81	11.58	14.35	16.93	19.65	22.49	24.92	26.91

Table 18: Results from the sensitivity analysis for change in number of students

	NPV	Dis- counte d Pay- back Period	IRR	ADSCR- 2	ADSCR- 3	ADSCR- 4	ADSCR- 5	ADSCR- 6	ADSCR- 7	ADSCR- 8	ADSCR- 9	LLCR- 2	LLCR- 3	LLCR- 4	LLCR- 5	LLCR- 6	LLCR- 7	LLCR- 8	LLCR- 9
- 30%	- 979%	69%	-	119%	410%	-493%	-243%	-168%	-132%	-121%	-121%	-326%	-215%	-170%	-148%	-134%	-125%	-121%	-121%
- 20%	- 653%	69%	- 142%	79%	274%	-329%	-162%	-112%	-88%	-81%	-81%	-218%	-143%	-113%	-99%	-89%	-83%	-81%	-81%
- 10%	- 326%	69%	-60%	40%	137%	-164%	-81%	-56%	-44%	-40%	-40%	-109%	-72%	-57%	-49%	-45%	-42%	-40%	-40%
10%	326%	-35%	59%	-40%	-137%	164%	81%	56%	44%	40%	40%	109%	72%	57%	49%	45%	42%	40%	40%
20%	653%	-51%	122%	-79%	-274%	329%	162%	112%	88%	81%	81%	218%	143%	113%	99%	89%	83%	81%	81%

4.6.2 Change in the Fees

The fees are main and only income for the center. The fees are the selling price of the service being sold by the center. The change in fees was tested under six scenarios, an increase in the fees by 5%, 10%, and 15%, and a decrease in the fees by 5%, 10%, and 15%, respectively. The best-case scenario, an increase of 15% in the fees, the NPV would increase by 490%, the IRR would increase by 87%, and the payback period would drop by 43%. The ADSCR would remain negative in the first year of the loan repayment, but the LLCR would increase. As for the worst-case scenario, a decrease of 15% in the fees would cause the NPV to drop by 290%, the IRR decrease by 94%, and the payback period would increase by at 69%. The ADSCR would become negative for the first 4 years of the loan repayment period and the LLCR will become negative for the first two years. This indicates that the project will have trouble paying back its loan. Table 19, below, displays the sensitivity analysis done for the changes in fees. Table 20, below, displays the results.

Table 19: Sensitivity analysis for the change in fees

	NPV	Discounted Payback Period	IRR	ADSCR-2	ADSCR-3	ADSCR-4	ADSCR-5	ADSCR-6	ADSCR-7	ADSCR-8	ADSCR-9	LLCR-2	LLCR-3	LLCR-4	LLCR-5	LLCR-6	LLCR-7	LLCR-8	LLCR-9
	47,861.03	11.82	16%	(4.17)	(1.55)	1.62	3.90	6.61	10.09	12.91	14.89	2.77	4.76	6.73	8.51	10.37	12.27	13.79	14.89
-15%	(186,365.29)	>20	1%	(6.66)	(4.72)	(2.37)	(0.83)	1.05	3.42	5.10	5.87	(1.75)	(0.35)	1.01	2.19	3.42	4.61	5.44	5.87
-10%	(108,289.85)	>20	6%	(5.83)	(3.67)	(1.04)	0.74	2.91	5.64	7.70	8.88	(0.24)	1.35	2.92	4.30	5.74	7.17	8.22	8.88
-5%	(30,214.41)	17.30	11%	(5.00)	(2.61)	0.29	2.32	4.76	7.86	10.31	11.88	1.27	3.06	4.82	6.41	8.06	9.72	11.01	11.88
5%	125,936.48	9.23	20%	(3.34)	(0.49)	2.95	5.47	8.47	12.31	15.52	17.89	4.28	6.46	8.63	10.62	12.69	14.83	16.57	17.89
10%	204,011.92	7.71	25%	(2.51)	0.57	4.28	7.05	10.32	14.54	18.13	20.90	5.79	8.17	10.54	12.72	15.01	17.38	19.35	20.90
15%	282,087.36	6.66	30%	(1.69)	1.63	5.61	8.63	12.18	16.76	20.73	23.90	7.30	9.87	12.44	14.83	17.33	19.93	22.14	23.90

Table 20: Results for the sensitivity analysis for changes in fees

	NPV	Discounted Payback Period	IRR	ADSCR-2	ADSCR-3	ADSCR-4	ADSCR-5	ADSCR-6	ADSCR-7	ADSCR-8	ADSCR-9	LLCR-2	LLCR-3	LLCR-4	LLCR-5	LLCR-6	LLCR-7	LLCR-8	LLCR-9
-15%	-489%	69%	-95%	60%	205%	-246%	-121%	-84%	-66%	-61%	-61%	-163%	-107%	-85%	-74%	-67%	-62%	-61%	-61%
-10%	-326%	69%	-60%	40%	137%	-164%	-81%	-56%	-44%	-40%	-40%	-109%	-72%	-57%	-49%	-45%	-42%	-40%	-40%
-5%	-163%	46%	-29%	20%	68%	-82%	-40%	-28%	-22%	-20%	-20%	-54%	-36%	-28%	-25%	-22%	-21%	-20%	-20%
5%	163%	-22%	29%	-20%	-68%	82%	40%	28%	22%	20%	20%	54%	36%	28%	25%	22%	21%	20%	20%
10%	326%	-35%	59%	-40%	-137%	164%	81%	56%	44%	40%	40%	109%	72%	57%	49%	45%	42%	40%	40%
15%	489%	-44%	90%	-60%	-205%	246%	121%	84%	66%	61%	61%	163%	107%	85%	74%	67%	62%	61%	61%

4.6.3 Change in Salaries

Salaries compose a large chunk of the cash outflow. For the sake of the study, we assumed the salaries get decreased by 5%, 10%, and 15% and increase by 5%, 10%, and 15% respectively. As the salaries increase the indicators will decrease and vice versa. In the best case scenario, which is a drop in the salaries by 15%, the NPV will up by 268%, the IRR by 53%, and the payback period will drop by 33%. On the other hand, if the salaries were to increase by 15%, the NPV will be reduced by 268%, the IRR by 47%, and the payback period will rise by 69%. Table 21 and 22, respectively, below; demonstrate the analysis and the results of the sensitivity analysis.

Table 21: Sensitivity analysis for change in salaries

	NPV	Dis- counte d Pay- back Period	IR R	ADSCR- 2	ADSCR- 3	ADSCR- 4	ADSCR- 5	ADSCR- 6	ADSCR- 7	ADSCR- 8	ADSCR- 9	LLCR- 2	LLCR- 3	LLCR- 4	LLCR- 5	LLCR- 6	LLCR- 7	LLCR- 8	LLCR- 9
	47,861.03	11.82	16 %	(4.17)	(1.55)	1.62	3.90	6.61	10.09	12.91	14.89	2.77	4.76	6.73	8.51	10.37	12.27	13.79	14.89
- 15%	176,203.2 5	7.96	24 %	(2.30)	0.51	3.88	6.39	9.37	13.20	16.46	18.98	5.25	7.41	9.57	11.55	13.63	15.78	17.57	18.98
- 10%	133,422.5 1	8.91	21 %	(2.92)	(0.18)	3.13	5.56	8.45	12.16	15.28	17.61	4.43	6.53	8.62	10.54	12.54	14.61	16.31	17.61
-5	90,641.77	10.08	18 %	(3.55)	(0.86)	2.37	4.73	7.53	11.13	14.10	16.25	3.60	5.64	7.67	9.52	11.46	13.44	15.05	16.25
5%	5,080.30	14.20	13 %	(4.80)	(2.23)	0.87	3.06	5.70	9.05	11.73	13.53	1.95	3.88	5.78	7.50	9.29	11.10	12.53	13.53
10%	(37,700.4 4)	17.98	11 %	(5.42)	(2.92)	0.11	2.23	4.78	8.02	10.55	12.16	1.12	2.99	4.84	6.49	8.20	9.93	11.27	12.16
15%	(80,481.1 8)	>20	8%	(6.05)	(3.60)	(0.64)	1.40	3.86	6.98	9.37	10.80	0.30	2.11	3.89	5.47	7.12	8.76	10.00	10.80

Table 22: Results for the sensitivity analysis for changes in salaries

	NPV	Dis- counte d Pay- back Period	IRR	ADSCR- 2	ADSCR- 3	ADSCR- 4	ADSCR- 5	ADSCR- 6	ADSCR- 7	ADSCR- 8	ADSCR- 9	LLCR- 2	LLCR- 3	LLCR- 4	LLCR- 5	LLCR- 6	LLCR- 7	LLCR- 8	LLCR- 9
- 15%	268%	-33%	53%	-45%	-133%	139%	64%	42%	31%	27%	27%	89%	56%	42%	36%	31%	29%	27%	27%
- 10%	179%	-25%	34%	-30%	-88%	93%	43%	28%	21%	18%	18%	60%	37%	28%	24%	21%	19%	18%	18%
-5	179%	-25%	34%	-30%	-88%	93%	43%	28%	21%	18%	18%	60%	37%	28%	24%	21%	19%	18%	18%
5%	-89%	20%	- 16%	15%	44%	-46%	-21%	-14%	-10%	-9%	-9%	-30%	-19%	-14%	-12%	-10%	-10%	-9%	-9%
10%	- 179%	52%	- 32%	30%	88%	-93%	-43%	-28%	-21%	-18%	-18%	-60%	-37%	-28%	-24%	-21%	-19%	-18%	-18%
15%	- 268%	69%	- 47%	45%	133%	-139%	-64%	-42%	-31%	-27%	-27%	-89%	-56%	-42%	-36%	-31%	-29%	-27%	-27%

4.6.4 Change in Rent

Rent consumes the biggest portion of the cash outflow. Any change to the rent will affect the business. As a result, the rent of the building was assumed to undergo six scenarios, an increase by 5%, 10%, 15%, and 20%, and a decrease by 5%, 10%, and 15%. Since it is an outflow, the increase will cause a drop in the indicators and a decrease will cause a jump in the indicators. For the worst case scenario, an increase of 20% in the rent will cause the NPV to reduce by 147%, the IRR by 26%, and the payback period to increase by 39%. In contrast, a drop in the rent will increase the NPV by 110%, the IRR by 21%, and the payback period will decrease by 17%. Tables 23 and 24, below, demonstrate the sensitivity analysis and its results, respectively.

Table 23: Sensitivity analysis for change in rent

	NPV	Discounted Pay-back Period	IRR	ADSCR-2	ADSCR-3	ADSCR-4	ADSCR-5	ADSCR-6	ADSCR-7	ADSCR-8	ADSCR-9	LLCR-2	LLCR-3	LLCR-4	LLCR-5	LLCR-6	LLCR-7	LLCR-8	LLCR-9
	47,861.03	11.82	16%	(4.17)	(1.55)	1.62	3.90	6.61	10.09	12.91	14.89	2.77	4.76	6.73	8.51	10.37	12.27	13.79	14.89
-15%	100,546.67	9.84	19%	(3.40)	(0.70)	2.55	4.92	7.74	11.37	14.37	16.57	3.79	5.85	7.89	9.76	11.71	13.71	15.34	16.57
-10%	82,984.79	10.42	18%	(3.66)	(0.99)	2.24	4.58	7.37	10.94	13.88	16.01	3.45	5.49	7.51	9.34	11.27	13.23	14.82	16.01
-5	65,422.91	11.06	17%	(3.92)	(1.27)	1.93	4.24	6.99	10.51	13.40	15.45	3.11	5.12	7.12	8.93	10.82	12.75	14.31	15.45
5%	30,299.16	12.68	15%	(4.43)	(1.83)	1.31	3.55	6.24	9.66	12.43	14.33	2.44	4.40	6.34	8.10	9.93	11.79	13.27	14.33
10%	12,737.28	13.70	14%	(4.69)	(2.11)	1.00	3.21	5.86	9.24	11.94	13.77	2.10	4.03	5.95	7.68	9.48	11.31	12.75	13.77
15%	(4,824.60)	14.91	13%	(4.94)	(2.39)	0.69	2.87	5.48	8.81	11.46	13.21	1.76	3.67	5.56	7.26	9.04	10.83	12.23	13.21
20%	(22,386.48)	16.39	12%	(5.20)	(2.67)	0.38	2.53	5.11	8.39	10.97	12.65	1.42	3.31	5.18	6.85	8.59	10.35	11.72	12.65

Table 24: Results for sensitivity analysis for changes in rent

	NPV	Dis- counte d Pay- back Period	IRR	ADSCR- 2	ADSCR- 3	ADSCR- 4	ADSCR- 5	ADSCR- 6	ADSCR- 7	ADSCR- 8	ADSCR- 9	LLCR- 2	LLCR- 3	LLCR- 4	LLCR- 5	LLCR- 6	LLCR- 7	LLCR- 8	LLCR- 9
- 15%	110%	-17%	21%	-18%	-54%	57%	26%	17%	13%	11%	11%	37%	23%	17%	15%	13%	12%	11%	11%
- 10%	73%	-12%	14%	-12%	-36%	38%	18%	11%	8%	8%	8%	24%	15%	12%	10%	9%	8%	8%	8%
-5	37%	-6%	7%	-6%	-18%	19%	9%	6%	4%	4%	4%	12%	8%	6%	5%	4%	4%	4%	4%
5%	-37%	7%	-7%	6%	18%	-19%	-9%	-6%	-4%	-4%	-4%	-12%	-8%	-6%	-5%	-4%	-4%	-4%	-4%
10%	-73%	16%	- 13%	12%	36%	-38%	-18%	-11%	-8%	-8%	-8%	-24%	-15%	-12%	-10%	-9%	-8%	-8%	-8%
15%	- 110%	26%	- 20%	18%	54%	-57%	-26%	-17%	-13%	-11%	-11%	-37%	-23%	-17%	-15%	-13%	-12%	-11%	-11%
20%	- 147%	39%	- 26%	25%	73%	-76%	-35%	-23%	-17%	-15%	-15%	-49%	-30%	-23%	-20%	-17%	-16%	-15%	-15%

4.6.5 Sensitivity Analysis on the Change in Number of Students and Staff

To minimize the effects of the drawbacks of the sensitivity analysis, a two way sensitivity analysis was performed to measure the effects of one variable on the other. The parameters chosen for this analysis were the change in number of students and the change in the number of staff members. Bearing in mind that number of students holds the highest sensitivity for this project, it is logical to choose those two parameters because the more students that are enrolled in the center, the more staff are required to run the center with high efficiency, and vice versa. The number of students and the number of staff members have a positive relationship. As one increases, so does the other. However, the sensitivity analysis was run to see the effect of their relationship on the NPV and IRR. As predicted, as the numbers increase, so do the NPV and IRR. Even though the increase in staff is an increase in the cost, yet the relationship of the parameters has a positive impact on the NPV and IRR of the investment. The table below displays the two way analysis for the change in the number of students and staff. The vertical axis is used for the number of students, while the horizontal axis is used for the number of staff.

Table 25: Two-way sensitivity analysis for number of students and staff

	-30%	-20%	-10%	0%	10%	20%
	Net Present Value					
-30%	(163,907.19)	(249,468.66)	(335,030.14)	(420,591.61)	(506,153.08)	(591,714.56)
-20%	(7,756.31)	(93,317.78)	(178,879.25)	(264,440.73)	(350,002.20)	(435,563.68)
-10%	148,394.58	62,833.10	(22,728.37)	(108,289.85)	(193,851.32)	(279,412.80)
0%	304,545.46	218,983.98	133,422.51	47,861.03	(37,700.44)	(123,261.91)
10%	460,696.34	375,134.86	289,573.39	204,011.92	118,450.44	32,888.97
20%	616,847.22	531,285.75	445,724.27	360,162.80	274,601.32	189,039.85

4.6.6 Sensitivity Analysis on the Change in Fees and Number of Students

Another two-way sensitivity analysis was conducted on the parameters of the change in fees and the change in the number of students. These two parameters have negative relationship. In other words, it means when one parameter increases, the other decreases. That is only logical because it contributes to the demand issue. When the prices drop, the demand increases, and vice versa. Therefore, it is expected that if the fees are reduced, more students will enroll, and if the fees rise, the number of students to enroll will drop. However, when the analysis was conducted, it showed that the relationship between both parameters is at equilibrium, as shown in the table below. The highest NPV and IRR are reached when there is no change in either of the parameters. However, even if there is a change, the NPV manages to stay positive and the IRR remains around the borders of 10%. On the vertical axis lies the change in fees, while on the horizontal axis lies the change in number of students.

Table 26: Two-way sensitivity analysis on the change in fees and the change in number of students

	15%	10%	5%	0%	-5%	-10%	-15%
Net Present Value							
-15%	12,727.09	(53,637.04)	(120,001.16)	(186,365.29)	(252,729.41)	(319,093.54)	(385,457.66)
-10%	102,513.84	32,245.95	(38,021.95)	(108,289.85)	(178,557.74)	(248,825.64)	(319,093.54)
-5%	192,300.60	118,128.93	43,957.26	(30,214.41)	(104,386.07)	(178,557.74)	(252,729.41)
0%	282,087.36	204,011.92	125,936.48	47,861.03	(30,214.41)	(108,289.85)	(186,365.29)
5%	371,874.11	289,894.90	207,915.69	125,936.48	43,957.26	(38,021.95)	(120,001.16)
10%	461,660.87	375,777.89	289,894.90	204,011.92	118,128.93	32,245.95	(53,637.04)
15%	551,447.63	461,660.87	371,874.11	282,087.36	192,300.60	102,513.84	12,727.09

Chapter 5

CONCLUSION

The main purpose for this study was to create a financial analysis for a rehabilitation center for adolescents with Down syndrome. The study was to understand whether this project would be a good investment, financially. After thorough researching and calculating, the study came to the conclusion this project is financially feasible.

For better understanding, the study was kicked off with literature review around the Down syndrome and Capital Budgeting. Next, the study moved to understand the methods used in capital budgeting, which were Net Present Value, Discounted Payback Period, Internal Rate of Return, and Sensitivity Analysis. These methods were used to perform a financial analysis for the project. The results of the project showed positive indications, that the project would be financially feasible. The NPV calculated was positive. As for the IRR, it was between 15% and 20% which is higher than the discount rate of the project. As for the payback period, it was demonstrated the project will be able to break even from the initial expenditures.

During the process of the study, literature on Capital budgeting regarding schools, gyms, or educational centers was found to be very limited. That pointed to a gap in the literature and researches done on capital budgeting. Also, most of the capital budgeting researches were aimed for corporations and firms looking to invest. We hope that this

study could contribute to the gaps in literature regarding capital budgeting in the educational field and the discounted payback period. We recommend that since the project is extremely sensitive to the number of students and can affect its failure or success, few suggestions are recommended;

1. It is suggested that an agreement is settled with the government to secure a certain number of students.
2. It is also suggested that an agreement could be made with other disabled educational centers, in which once the students of age 18 graduate, they can be transferred to this center.
3. Even though the project is profitable, however, it is providing a service that governments should provide. As a result, it is suggested that government support should be sought out, whether by granting the project a subsidized loan with a low interest rate between 3-5%, which will help decrease the capital cost tremendously, and any other form of help or support to guarantee to a certain level the success of the project.

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APPENDICES

Appendix A: Study Inputs

Inputs Sheet		
	Constant	Unit
Units		
Year	Year	
Years	Years	
Local Currency - Jordanian Dinar	JD	
Foreign Currency - United States Dollar	USD	
Thousands of JD	000' JD	
Millions of JD	Mil JD	
Thousand of USD	000' USD	
Millions of USD	Mil USD	
Index	Index	
Percentage	%	
Number	#	
Flag	Flag	
Exchange Rate	JD/USD	

Study inputs

Construction and Production Time				
Project Start Year			0 year	
Welcome Members			0 year	
Lifespan of Project			20 years	
Liquidation			20 year	
Inflation, Exchange Rate, Discount Rate, and Taxes				
Domestic Inflation Rate - Jordan			2.5% %	World bank
Foreign Inflation Rate - United States			1.7% %	World bank
Exchange Rate			0.71 JD/USD	
Discount Rate			13.0% %	
Added Value Tax			16.0% %	pwc - jordan
Taxes on Material and Supplies			0.0% %	
Income Tax paid by Skilled Laborer			10.0% %	pwc - jordan
Income Tax paid by Unskilled Laborer			0.0% %	

Study inputs

Investment Details				
Financing			60% Equity	
			40% Loan	
Building and Land Development				
Building Annual Rent			50,000 JD	Bayut.com
Land Development			5,000 JD	
Material and Equipment				
	#	Price	Currency	
Treadmill Machine	8	600.00	JD	
Pingpong Table	1	450.00	JD	
Epiliptical Machine	10	200.00	JD	
Cycling Machine	10	220.00	JD	
Sewing Machines	17	100.00	JD	
Manual Saw	4	25.00	JD	
Electronic Saw	4	60.00	JD	
Drill	5	45.00	JD	
Wood File	7	30.00	JD	
Refrigerator	2	1,100.00	JD	
Gas	1	700.00	JD	
Baking oven	4	197.00	JD	
Hotplate	2	20.00	JD	
Glue Gun	17	14.00	JD	
Television	3	250.00	JD	
Security Camera Set	1	170.00	JD	
Computers	18	400.00	JD	
Printer	1	300.00	JD	

Study inputs

Employees	#	Annual Salaries per Employee	Currency	
Supervisor	x1	9,600	JD	
Accountant	x1	7,800	JD	
Art Teacher	x1	6,000	JD	
Sports Instructor	x1	6,000	JD	
Cooking Teacher	x1	6,000	JD	
Sewing Teacher	x1	6,000	JD	
Woodshop Teacher	x1	6,000	JD	
Handcraft Teacher	x1	6,000	JD	
Assistants	x7	5,400	JD	
Computer Teacher	x1	6,000	JD	
Cleaners	x4	3,000	JD	
Security	x1	3,000	JD	
Driver	x1	3,600	JD	
Loan Terms and Conditions				
Loan Repayment Period			8 years	
Loan Draw Down Period			1 years	
Year of Loan Draw Down			0 year	
First Year of Loan Repayment			2 year	
Real Interest Rate			10.25% %	Arab Bank

Appendix B: Financial Analysis/Cash Flow (Nominal)

Financial analysis – cash inflow (nominal)

Years				0	1	2	3	4	5	6	7	8			
	Constant	Unit	Total												
Financial Analysis - Nominal															
Cash Inflows															
Forecasted Revenues from Annual Paying members		JD	-	22,416.75	30,636.23	39,252.66	48,280.78	57,735.76	67,963.24	78,752.40	90,127.75				
Forecasted Revenues from Semi-Annual Paying members		JD	-	33,210.00	42,550.31	52,336.88	62,586.19	73,315.25	84,954.05	97,225.19	100,141.94				
Forecasted Revenues from Quarterly Paying members		JD	-	77,490.00	90,774.00	104,673.77	119,211.79	122,192.09	125,857.85	129,633.59	133,522.59				
Forecasted Revenues from Monthly Paying members		JD	-	4,843.13	5,673.38	6,542.11	7,450.74	7,637.01	7,866.12	8,102.10	8,345.16				
Total Inflows		JD	-	137,959.88	169,633.91	202,805.43	237,529.50	260,880.11	286,641.25	313,713.28	332,137.45				
Years				9	10	11	12	13	14	15	16	17	18	19	20
	Constant	Unit	Total												
Financial Analysis - Nominal															
Cash Inflows															
Forecasted Revenues from Annual Paying members		JD	92,831.58	95,616.53	98,963.11	102,426.82	106,011.76	109,722.17	113,562.44	118,104.94	122,829.14	127,742.30	132,852.00	138,166.08	
Forecasted Revenues from Semi-Annual Paying members		JD	103,146.20	106,240.59	109,959.01	113,807.57	117,790.84	121,913.52	126,180.49	131,227.71	136,476.82	141,935.89	147,613.33	153,517.86	
Forecasted Revenues from Quarterly Paying members		JD	137,528.27	141,654.12	146,612.01	151,743.43	157,054.45	162,551.36	168,240.66	174,970.28	181,969.09	189,247.86	196,817.77	204,690.48	
Forecasted Revenues from Monthly Paying members		JD	8,595.52	8,853.38	9,163.25	9,483.96	9,815.90	10,159.46	10,515.04	10,935.64	11,373.07	11,827.99	12,301.11	12,793.16	
Total Inflows		JD	342,101.57	352,364.62	364,697.38	377,461.79	390,672.95	404,346.51	418,498.63	435,238.58	452,648.12	470,754.05	489,584.21	509,167.58	

Financial analysis – cash outflow (nominal)

Years			0	1	2	3	4	5	6	7	8	9	10
	Constant	Unit	Total										
Cash Outflows													
Investment Cost													
Building and Land costs		JD	55,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Material and Equipment Costs		JD	24,311.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff		JD	18,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Technical Costs		JD	2,350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual Operation costs													
Electricity		JD	2,100.00	2,152.50	2,206.31	2,261.47	2,318.01	2,375.96	2,447.24	2,520.65	2,596.27	2,674.16	2,754.39
Water		JD	50.52	51.78	53.08	54.40	55.76	57.16	58.87	60.64	62.46	64.33	66.26
Handcraft material costs		JD	-	3,587.50	3,677.19	3,769.12	3,863.35	3,959.93	4,078.73	4,201.09	4,327.12	4,456.93	4,590.64
Food, Beverage, and Cooking material		JD	-	5,125.00	5,253.13	5,384.45	5,519.06	5,657.04	5,826.75	6,001.55	6,181.60	6,367.05	6,558.06
Wood workshop material		JD	-	6,150.00	6,303.75	6,461.34	6,622.88	6,788.45	6,992.10	7,201.87	7,417.92	7,640.46	7,869.67
Art material		JD	-	2,050.00	2,101.25	2,153.78	2,207.63	2,262.82	2,330.70	2,400.62	2,472.64	2,546.82	2,623.22
Sewing material		JD	-	6,662.50	6,829.06	6,999.79	7,174.78	7,354.15	7,574.78	7,802.02	8,036.08	8,277.16	8,525.48
Maintenance Cost		JD	0.00	5,138.38	5,398.51	5,533.47	5,671.81	5,813.60	5,988.01	6,167.65	6,352.68	6,543.26	6,739.56
Annual rent		JD	0.00	51,250.00	52,531.25	53,844.53	55,190.64	56,570.41	58,267.52	60,015.55	61,816.02	63,670.50	65,580.61
Annual Salaries		JD	0.00	124,845.00	127,966.13	131,165.28	134,444.41	137,805.52	141,939.69	146,197.88	150,583.81	155,101.33	159,754.37
Changes in Accounts Payables		JD	-	(24,847.73)	(636.99)	(637.12)	(653.05)	(669.37)	(823.33)	(848.03)	(873.47)	(899.67)	(926.66)
Changes in Cash Balance		JD	0.00	24,847.73	636.99	637.12	653.05	669.37	823.33	848.03	873.47	899.67	926.66
Total Outflows		JD	102,411.52	207,012.66	212,319.65	217,627.64	223,068.33	228,645.04	235,504.39	242,569.52	249,846.61	257,342.00	265,062.26
Net Cash Flow		JD	(102,411.52)	(69,052.78)	(42,685.73)	(14,822.21)	14,461.17	32,235.07	51,136.86	71,143.76	82,290.84	84,759.57	87,302.36

Years				10	11	12	13	14	15	16	17	18	19	20
	Constant	Unit	Total											
Cash Outflows														
Investment Cost														
Building and Land costs		JD		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Material and Equipment Costs		JD		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Staff		JD		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Technical Costs		JD		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual Operation costs														
Electricity		JD		2,754.39	2,850.79	2,950.57	3,053.84	3,160.72	3,271.35	3,402.20	3,538.29	3,679.82	3,827.01	3,980.09
Water		JD		66.26	68.58	70.98	73.47	76.04	78.70	81.85	85.12	88.53	92.07	95.75
Handcraft material costs		JD		4,590.64	4,751.32	4,917.61	5,089.73	5,267.87	5,452.24	5,670.33	5,897.15	6,133.03	6,378.35	6,633.49
Food, Beverage, and Cooking material		JD		6,558.06	6,787.59	7,025.16	7,271.04	7,525.53	7,788.92	8,100.48	8,424.50	8,761.47	9,111.93	9,476.41
Wood workshop material		JD		7,869.67	8,145.11	8,430.19	8,725.25	9,030.63	9,346.70	9,720.57	10,109.39	10,513.77	10,934.32	11,371.69
Art material		JD		2,623.22	2,715.04	2,810.06	2,908.42	3,010.21	3,115.57	3,240.19	3,369.80	3,504.59	3,644.77	3,790.56
Sewing material		JD		8,525.48	8,823.87	9,132.71	9,452.35	9,783.18	10,125.60	10,530.62	10,951.84	11,389.92	11,845.51	12,319.33
Maintenance Cost		JD		6,739.56	6,975.44	7,219.58	7,472.27	7,733.80	8,004.48	8,324.66	8,657.65	9,003.95	9,364.11	9,738.67
Annual rent		JD		65,580.61	67,875.93	70,251.59	72,710.40	75,255.26	77,889.19	81,004.76	84,244.95	87,614.75	91,119.34	94,764.11
Annual Salaries		JD		159,754.37	165,345.77	171,132.87	177,122.52	183,321.81	189,738.07	197,327.60	205,220.70	213,429.53	221,966.71	230,845.38
Changes in Accounts Payables		JD		(926.66)	(1,113.54)	(1,152.51)	(1,192.85)	(1,234.60)	(1,277.81)	(1,511.47)	(1,571.93)	(1,634.81)	(1,700.20)	(1,768.21)
Changes in Cash Balance		JD		926.66	1,113.54	1,152.51	1,192.85	1,234.60	1,277.81	1,511.47	1,571.93	1,634.81	1,700.20	1,768.21
Total Outflows		JD		265,062.26	274,339.44	283,941.32	293,879.27	304,165.04	314,810.82	327,403.25	340,499.38	354,119.36	368,284.13	383,015.50
Net Cash Flow		JD		87,302.36	90,357.94	93,520.47	96,793.68	100,181.46	103,687.81	107,835.33	112,148.74	116,634.69	121,300.08	126,152.08

Financial analysis – cash outflow (real)

Years				0	1	2	3	4	5	6	7	8	9	10
	Constant	Unit	Total											
Cash Outflows														
Investment Cost														
Building and Land costs		JD		55000	0	0	0	0	0	0	0	0	0	0
Material and Equipment Costs		JD		24311	0	0	0	0	0	0	0	0	0	0
Staff		JD		18600	0	0	0	0	0	0	0	0	0	0
Technical Costs		JD		2350	0	0	0	0	0	0	0	0	0	0
Annual Operation Costs														
Electricity		JD		2,100.00	2,100.00	2,100.00	2,100.00	2,100.00	2,100.00	2,100.00	2,100.00	2,100.00	2,100.00	2,100.00
Water		JD		50.52	50.52	50.52	50.52	50.52	50.52	50.52	50.52	50.52	50.52	50.52
Handcraft material costs		JD		-	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00	3,500.00
Food, Beverage, and Cooking material		JD		-	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00
Wood workshop material		JD		-	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00
Art material		JD		-	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00
Sewing material		JD		-	6,500.00	6,500.00	6,500.00	6,500.00	6,500.00	6,500.00	6,500.00	6,500.00	6,500.00	6,500.00
Maintenance Cost		JD		0	5013.05	5138.37625	5138.37625	5138.37625	5138.37625	5138.37625	5138.37625	5138.37625	5138.37625	5138.37625
Annual rent		JD		0	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000
Annual Salaries		JD		0	121800	121800	121800	121800	121800	121800	121800	121800	121800	121800
Changes in Accounts Payables		JD		-	(24,241.69)	(606.30)	(591.63)	(591.63)	(591.63)	(706.51)	(706.51)	(706.51)	(706.51)	(706.51)
Changes in Cash Balance		JD		0	24241.6908	606.2999012	591.6275598	591.6275598	591.6275598	706.5066976	706.5066976	706.5066976	706.5066976	706.5066976
Total Outflow		JD		102411.52	201963.57	202088.8963	202088.8963	202088.8963	202088.8963	202088.8963	202088.8963	202088.8963	202088.8963	202088.8963
Net Cash Flow		JD		(102,411.52)	(67,368.57)	(40,628.90)	(13,763.90)	13,101.10	28,491.10	43,881.10	59,271.10	66,561.10	66,561.10	66,561.10

Appendix E: Financial Analysis: Equity Holder's Perspective (Nominal and Real)

Financial analysis: equity holder's perspective (nominal and real)

Years				0	1	2	3	4	5	6	7	8	9	10	
	Constant	Unit	Total												
Financial Analysis (Equity Holder's Perspective) - Nominal															
Total Inflows		JD	-	#####	169,633.91	202,805.43	237,529.50	260,880.11	286,641.25	313,713.28	332,137.45	342,101.57	352,364.62	3	
Total Outflows		JD	102,411.52	#####	207,012.66	212,319.65	217,627.64	223,068.33	228,645.04	235,504.39	242,569.52	249,846.61	257,342.00	265,062.26	2
Net Cash flow before financing		JD	(102,411.52)	#####	(42,685.73)	(14,822.21)	14,461.17	32,235.07	51,136.86	71,143.76	82,290.84	84,759.57	87,302.36		
Add Inflow of Loan															
Senior Debt Contribution towards Total Investment Cost		JD	40,104.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Net Cash Flow Available after Debt Repayment		JD	(62,307.12)	#####	(42,685.73)	(14,822.21)	14,461.17	32,235.07	51,136.86	71,143.76	82,290.84	84,759.57	87,302.36		
Total Loan repayment		JD	0.00	0.00	10,229.13	9,577.12	8,925.11	8,273.10	7,731.63	7,051.98	6,372.34	5,692.69	0.00		
Net Cash Flow after Financing		JD	(62,307.12)	#####	(52,914.86)	(24,399.33)	5,536.06	23,961.97	43,405.24	64,091.77	75,918.51	79,066.87	87,302.36		
Financial Analysis (Equity Holder's Perspective) - Real															
Domestic Inflation Index		Index	1.00	1.03	1.05	1.08	1.10	1.13	1.17	1.20	1.24	1.27	1.31		
Total Inflows		JD	-	#####	161,460.00	188,325.00	215,190.00	230,580.00	245,970.00	261,360.00	268,650.00	268,650.00	268,650.00	2	
Total Outflows		JD	102411.52	#####	202088.896	202088.896	202088.896	202088.896	202088.896	202088.896	202088.896	202088.896	202088.896	2	
Net Cash flow before financing		JD	(102,411.52)	#####	(40,628.90)	(13,763.90)	13,101.10	28,491.10	43,881.10	59,271.10	66,561.10	66,561.10	66,561.10		
Add Inflow of Loan															
Senior Debt Contribution towards Total Investment Cost		JD	40104.4	0	0	0	0	0	0	0	0	0	0	0	
Net Cash Flow Available after Debt Repayment		JD	(62,307.12)	#####	(40,628.90)	(13,763.90)	13,101.10	28,491.10	43,881.10	59,271.10	66,561.10	66,561.10	66,561.10		
Total Loan repayment		JD	0	0	9736.23179	8893.30679	8085.70816	7312.21409	6634.59387	5875.1298	5154.27798	4470.43344	0		
Net Cash Flow after Financing		JD	(62,307.12)	#####	(50,365.13)	(22,657.20)	5,015.40	21,178.89	37,246.51	53,395.97	61,406.83	62,090.67	66,561.10		

NPV, IRR, and Discounted Payback Period

Discount rate			13%	%
NPV After Financing			47,861.03	JD
IRR after financing			16%	%
Discounted Payback Period before Financing			11.82	years
Discounted Payback Period after Financing			8.58	years
NPV before Financing			123,475.28	JD
IRR before financing			18%	%

Appendix F: Sensitivity Analysis

Sensitivity analysis – change in number of students and change in fees.

Change in # of Students																			
	NPV	Discounted Payback Period	IRR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR
	47,861.03	11.82	16%	(4.17)	(1.55)	1.62	3.90	6.61	10.09	12.91	14.89	2.77	4.76	6.73	8.51	10.37	12.27	13.79	14.89
-30%	(420,591.61)	>20	#NUM!	(9.15)	(7.90)	(6.36)	(5.56)	(4.51)	(3.26)	(2.72)	(3.14)	(6.28)	(5.46)	(4.70)	(4.12)	(3.54)	(3.05)	(2.91)	(3.14)
-20%	#####	>20	-7%	(7.49)	(5.78)	(3.70)	(2.41)	(0.80)	1.19	2.49	2.87	(3.26)	(2.06)	(0.89)	0.09	1.10	2.06	2.66	2.87
-10%	#####	>20	0.06	(5.83)	(3.67)	(1.04)	0.74	2.91	5.64	7.70	8.88	(0.24)	1.35	2.92	4.30	5.74	7.17	8.22	8.88
10%	204,011.92	7.71	25%	(2.51)	0.57	4.28	7.05	10.32	14.54	18.13	20.90	5.79	8.17	10.54	12.72	15.01	17.38	19.35	20.90
20%	360,162.80	5.85	35%	(0.86)	2.69	6.94	10.20	14.03	18.99	23.34	26.91	8.81	11.58	14.35	16.93	19.65	22.49	24.92	26.91
Change in Fees																			
	NPV	Discounted Payback Period	IRR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR
	47,861.03	11.82	16%	(4.17)	(1.55)	1.62	3.90	6.61	10.09	12.91	14.89	2.77	4.76	6.73	8.51	10.37	12.27	13.79	14.89
-15%	#####	>20	1%	(6.66)	(4.72)	(2.37)	(0.83)	1.05	3.42	5.10	5.87	(1.75)	(0.35)	1.01	2.19	3.42	4.61	5.44	5.87
-10%	#####	>20	6%	(5.83)	(3.67)	(1.04)	0.74	2.91	5.64	7.70	8.88	(0.24)	1.35	2.92	4.30	5.74	7.17	8.22	8.88
-5%	(30,214.41)	17.30	11%	(5.00)	(2.61)	0.29	2.32	4.76	7.86	10.31	11.88	1.27	3.06	4.82	6.41	8.06	9.72	11.01	11.88
5%	125,936.48	9.23	20%	(3.34)	(0.49)	2.95	5.47	8.47	12.31	15.52	17.89	4.28	6.46	8.63	10.62	12.69	14.83	16.57	17.89
10%	204,011.92	7.71	25%	(2.51)	0.57	4.28	7.05	10.32	14.54	18.13	20.90	5.79	8.17	10.54	12.72	15.01	17.38	19.35	20.90
15%	282,087.36	6.66	30%	(1.69)	1.63	5.61	8.63	12.18	16.76	20.73	23.90	7.30	9.87	12.44	14.83	17.33	19.93	22.14	23.90

Sensitivity analysis – change in salaries and change in rent

Change in Salaries																				
		NPV	Discounted Payback Period	IRR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	
		47,861.03	11.82	16%	(4.17)	(1.55)	1.62	3.90	6.61	10.09	12.91	14.89	2.77	4.76	6.73	8.51	10.37	12.27	13.79	14.89
	-15%	176,203.25	7.96	24%	(2.30)	0.51	3.88	6.39	9.37	13.20	16.46	18.98	5.25	7.41	9.57	11.55	13.63	15.78	17.57	18.98
	-10%	133,422.51	8.91	21%	(2.92)	(0.18)	3.13	5.56	8.45	12.16	15.28	17.61	4.43	6.53	8.62	10.54	12.54	14.61	16.31	17.61
	-5	90,641.77	10.08	18%	(3.55)	(0.86)	2.37	4.73	7.53	11.13	14.10	16.25	3.60	5.64	7.67	9.52	11.46	13.44	15.05	16.25
	5%	5,080.30	14.20	13%	(4.80)	(2.23)	0.87	3.06	5.70	9.05	11.73	13.53	1.95	3.88	5.78	7.50	9.29	11.10	12.53	13.53
	10%	(37,700.44)	17.98	11%	(5.42)	(2.92)	0.11	2.23	4.78	8.02	10.55	12.16	1.12	2.99	4.84	6.49	8.20	9.93	11.27	12.16
	15%	(80,481.18)	>20	8%	(6.05)	(3.60)	(0.64)	1.40	3.86	6.98	9.37	10.80	0.30	2.11	3.89	5.47	7.12	8.76	10.00	10.80
Change in Rent																				
		NPV	Discounted Payback Period	IRR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	ADSCR	
		47,861.03	11.82	16%	(4.17)	(1.55)	1.62	3.90	6.61	10.09	12.91	14.89	2.77	4.76	6.73	8.51	10.37	12.27	13.79	14.89
	-15%	100,546.67	9.84	19%	(3.40)	(0.70)	2.55	4.92	7.74	11.37	14.37	16.57	3.79	5.85	7.89	9.76	11.71	13.71	15.34	16.57
	-10%	82,984.79	10.42	18%	(3.66)	(0.99)	2.24	4.58	7.37	10.94	13.88	16.01	3.45	5.49	7.51	9.34	11.27	13.23	14.82	16.01
	-5	65,422.91	11.06	17%	(3.92)	(1.27)	1.93	4.24	6.99	10.51	13.40	15.45	3.11	5.12	7.12	8.93	10.82	12.75	14.31	15.45
	5%	30,299.16	12.68	15%	(4.43)	(1.83)	1.31	3.55	6.24	9.66	12.43	14.33	2.44	4.40	6.34	8.10	9.93	11.79	13.27	14.33
	10%	12,737.28	13.70	14%	(4.69)	(2.11)	1.00	3.21	5.86	9.24	11.94	13.77	2.10	4.03	5.95	7.68	9.48	11.31	12.75	13.77
	15%	(4,824.60)	14.91	13%	(4.94)	(2.39)	0.69	2.87	5.48	8.81	11.46	13.21	1.76	3.67	5.56	7.26	9.04	10.83	12.23	13.21
	20%	(22,386.48)	16.39	12%	(5.20)	(2.67)	0.38	2.53	5.11	8.39	10.97	12.65	1.42	3.31	5.18	6.85	8.59	10.35	11.72	12.65

Appendix G: Discounted Payback Period

	R	13%									
Before Financing	0	1	2	3	4	5	6	7	8	9	10
NCF	(102,411.52)	(69,052.78)	(42,685.73)	(14,822.21)	14,461.17	32,235.07	51,136.86	71,143.76	82,290.84	84,759.57	87,302.36
PV	(102,411.52)	(\$61,108.66)	(\$33,429.19)	(\$10,272.54)	\$8,869.30	\$17,495.90	\$24,561.98	\$30,240.41	\$30,954.51	\$28,215.18	\$25,718.26
Balance		(163,520.18)	(196,949.37)	(207,221.91)	(198,352.60)	(180,856.70)	(156,294.71)	(126,054.30)	(95,099.79)	(66,884.62)	(41,166.36)
After Financingg	0	1	2	3	4	5	6	7	8	9	10
NCF	(62,307.12)	(67,368.57)	(50,365.13)	(22,657.20)	5,015.40	21,178.89	37,246.51	53,395.97	61,406.83	62,090.67	66,561.10
PV	(62,307.12)	(\$44,570.91)	(\$17,743.91)	\$3,475.92	\$12,989.41	\$20,215.91	\$25,647.08	\$26,101.62	\$23,356.02	\$22,157.18	\$19,608.13
Balance	(62,307.12)	(106,878.03)	(124,621.94)	(121,146.02)	(108,156.61)	(87,940.70)	(62,293.62)	(36,192.00)	(12,835.98)	9,321.20	28,929.33

Before Financing	8	9	10	11	12	13	14	15	16	17	18	19	20
NCF	82,290.84	84,759.57	87,302.36	90,357.94	93,520.47	96,793.68	100,181.46	103,687.81	107,835.33	112,148.74	116,634.69	121,300.08	126,152.08
PV	\$30,954.51	\$28,215.18	\$25,718.26	\$23,556.10	\$21,575.72	\$19,761.83	\$18,100.44	\$16,578.72	\$15,258.29	\$14,043.03	\$12,924.56	\$11,895.17	\$10,947.77
Balance	(95,099.79)	(66,884.62)	(41,166.36)	(17,610.26)	3,965.47	23,727.30	41,827.74	58,406.46	73,664.76	87,707.79	100,632.35	112,527.52	123,475.28
									10.75				
After Financingg	8	9	10	11	12	13	14	15	16	17	18	19	20
NCF	61,406.83	62,090.67	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10	66,561.10
PV	\$23,356.02	\$22,157.18	\$19,608.13	\$17,352.32	\$15,356.04	\$13,589.41	\$12,026.03	\$10,642.50	\$9,418.15	\$8,334.64	\$7,375.79	\$6,527.25	\$0.00
Balance	(12,835.98)	9,321.20	28,929.33	46,281.65	61,637.69	75,227.10	87,253.13	97,895.64	107,313.78	115,648.43	123,024.22	129,551.46	129,551.46