Morocco Compact II

Cost-Effectiveness Study of Vocational Training Centers in Morocco

FINAL REPORT

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Technical Directive II

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Executive Summary

The purpose of the study was to establish the cost effectiveness of different models of vocational training centers. Cost-effectiveness analysis refers to the consideration of decision alternatives in which both their costs and consequences are taken into account in a systematic way.

Three different sectors were considered: automotive, aeronautical and textile. The unit of outcome was the program enrollee. Additional analyses were performed to compute costs per program graduate and per graduate placed in employment (when information was available). The study compared cost structure in two types of vocational training centers for each of the two sectors:

- Traditional model implemented by *L'Office de la formation professionnelle et de la promotion du travail* (OFPPT)
- Public-private partnership (PPP) model

The objective of the study was to help answer questions about sustainability of the PPP model. The study used the ingredients method of cost-effectiveness analysis (Levin, McEwan, 2000). The costs of an intervention are defined as the value of the resources that are given up by society to effect the result. The study employed two methods of data collection: document review and key informant interviews. Document review was used to gather cost data and beneficiary data, and interviews were used to gather additional information pertaining to costing of various program ingredients. The study relied on the data collected by vocational training centers and did not include any primary data collection from beneficiaries. Data from eight centers were collected and analyzed: five PPP centers and three OFPPT centers. Convenience sampling was used; generalizability of the findings is uncertain. All site visits took place in March of 2015.

The main finding of the study was that the PPP model appears to have much higher costs of producing graduates compared with the OFPPT model. However, the true comparison should involve the rate of employed graduates. Of all the centers studied, only l'IMA tracks the employment rate of its graduates, and reports it at 93%. Two other centers reported "anecdotal" evidence but were not able to produce actual data. This anecdotal evidence suggests that PPP centers are more successful in securing formal employment among their graduates, compared to OFPPT centers. However, the precise impact of the employment rate on the cost-effectiveness of the centers could only be computed once actual data are available.

Some of the reported costs would also need to be verified. Centers process their budget data differently, and most centers could not easily produce requested information about their expenditures. For examples, while some centers reported the amount they pay in taxes, others did not. Integrating the revenues into the cost analysis also presented a problem: OFPPT centers do not get paid directly and do not keep records of how much money their services eared, and one of the studied PPP centers reported being owed a substantial amount of money for the professional development services. Additionally, the study team found it difficult to obtain accurate dropout records from the visited centers. The study also

did not include participant costs into the cost model, largely because not all centers supplied this information.

Understanding the costs of training and employing a young person is of crucial importance to the development of the vocational training system in Morocco. The study team's recommendation is to establish a simple and clear system for a routine collection of the cost data that all centers would be required to comply with. Such system should collect data on the following costs and revenues:

- Annual expenditures at the center level, including a clear breakdown of costs along the following lined:
    - Instructional staff
    - Administrative staff
    - Consumable materials
    - Durable materials
    - Other costs (communication, security, etc.)
- Annual costs for participants, including:
    - Enrollment fees
    - Exam fees
    - Other fees/costs
- Annual revenues from continuous professional development and other professional services

To enable the computations of the cost-*effectiveness*, beneficiary-level data must be included in the analysis. The study identified two main issues impeding the analysis. The first issue is a lack of consistency across centers with measuring the enrollment. Centers provide training programs of different duration, and to enable fair comparisons, standardization of enrollment measurements must be made. Additionally, not all centers had graduation data easily available. A consistent system for tracking both enrollment and graduation would help address this issue.

The second issue is availability of data on the results of training, specifically, data on employment of graduates. To enable cost-effectiveness comparisons across different models of vocational training, different sectors, as well as across centers within the same model and sector, graduate employment data are necessary. It is the study's recommendation that each center have graduate employment data collected at 6 months after graduation mark, and preferably again a year after the graduation. To ensure a comparability of results, the standardized questionnaire and methodology for data collection should be used. To ensure integrity of the data, ideally, the beneficiary-level data should be collected by an independent contractor using a sample-based approach.

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Introduction: purpose of the study

The purpose of the study was to establish the cost effectiveness of different models of vocational training centers. Cost-effectiveness analysis refers to the consideration of decision alternatives in which both their costs and consequences are taken into account in a systematic way.

Three different sectors were considered: automotive, aeronautical and textile. The unit of outcome was the program enrollee. Additional analyses were performed to compute costs per program graduate and per graduate placed in employment (when information was available). The study compared cost structure in two types of vocational training centers for each of the two sectors:

- Traditional model implemented by *L'Office de la formation professionnelle et de la promotion du travail* (OFPPT)
- Public-private partnership (PPP) model

The objective of the study was to help answer questions about sustainability of the PPP model.

Summary of the methodology and limitations

Methodology. The study used the ingredients method of cost-effectiveness analysis (Levin, McEwan, 2000). It is a decision-oriented tool, in that it is designed to ascertain which means of attaining particular educational goals are most efficient. The costs of an intervention are defined as the value of the resources that are given up by society to effect the result. These are referred to as the ingredients of the intervention, and it is the social value of those ingredients that constitute its overall cost (Levin, 1995). The ingredients method implies costing out all of the ingredients of the intervention, including implicit and explicit costs, and arriving at a comprehensive and detailed summary of the costs per unit of outcome.

The study employed two methods of data collection: document review and key informant interviews. Document review was used to gather cost data and beneficiary data, and interviews were used to gather additional information pertaining to costing of various program ingredients. The study relied on the data collected by vocational training centers and did not include any primary data collection from beneficiaries. Primary data collection from beneficiaries might be considered in future, to supplement existing evidence, in cases where centers do not collect data on the units of outcome that are of primary interest: employed graduate.

Data from eight centers were collected and analyzed: five PPP centers and three OFPPT centers. All eight visits took place in March of 2015.

Limitations. The centers were selected non-randomly. As a result, it is unknown to what extent the findings from the present study can be generalized onto the entire population of the training centers in Morocco.

In addition to the selection bias, the computational errors are likely due to the different systems used for budget data by PPP and OFPPT centers. For instance, both models cell their services to the private sector for the continued professional development of the existing staff, but OFPPT centers could not report on the amount of money raised through selling those services since the funds go directly to the central OFPPT office.

Another limitation of the study has to do with the different types of training programs offered by the centers. The intensity and duration of programs vary substantially across centers, from very short training offerings to extensive multi-year programs. To enable cost comparisons, for the purpose of this study all enrollment was converted into person years taught. The conversion was problematic though since most centers did not provide detailed data on the number of hours taught within each stream of training, or the number of cohorts each training program had over a course of the year.

Additionally, the data collection had substantial challenges. PPP centers organize their budget data differently and did not provide detailed budget data upon request. Instead, they submitted an overview of budget information; in most cases the data were difficult to compare since the categories were different. The data submitted also did not allow for disaggregation by categories of expenditure. For instance, the attempts to disaggregate personnel data by administrative versus instructional staff was unsuccessful since all the budget numbers provided collapsed the data into a single “personnel” category. A similar situation was with expenditure for materials: the study was unable to separate annual consumables from durable supplies.

These substantial limitations indicate that the results of the study are suggestive and indicate general trends rather than precise findings on the costs per unit of outcome, as originally planned.

Findings

Aeronautical Sector

Aeronautical sector is seen as one of the most prominent growth sectors in Morocco as the country is rapidly becoming a strategic platform to access the African continent. An increasing number of global companies are choosing Morocco as their base for operating in Northern Africa, necessitating an increase in annual air traffic. Many European carriers are also choosing Morocco to subcontract repairs and maintenance, due to proximity to Europe, political stability and inexpensive workforce. The Moroccan aeronautics sector is enjoying an annual growth rate of 15% to 20% (with a slight softening to 13.8% in 2013 according to the Moroccan Office des Changes). Today, over 100 companies in the aeronautical sector are based there, employing over 8,000 people in total.

This market is generating a turnover of around 800 million euros which represents 5% of Morocco's total exports, and the industry is one of the top priority sectors in Morocco's Industrial "Emergence plan." [1] Factories are looking to expand and companies are in need of qualified workforce to support their

[1] CIE World Factbook, 2014.

growth. According to the Moroccan Space and Aeronautical Industries Group, the sector is projected to grow to employ 23,000 workers by 2020. The growth is likely to be among machinists and technicians since there are already enough Moroccan engineers specialized in aeronautics.

The Moroccan government has been aggressively supporting the expansion of the aeronautical sector by creating incentives and tax benefits to lure in major companies in the industry, and by investing in the training of the needed workforce. The government also created a free zone for aeronautics companies close to Casablanca's airport. The success of these efforts in the long term will undoubtedly hinge upon the ability of new training centers to fill in the skillec

Trainees at l'IMA

Two vocational training centers in the aeronautical sector have been included in the study: ***L'Institut des Métiers de l'Aéronautique*** *(l'IMA),* to represent the PPP model of the vocational training, and ***Institut Spécialisé dans les Métiers de l'Aéronautique et de la Logistique Aéroportuaire*** *(ISMALA)*, to represent the state-funded OFPPT model. The two centers were visited were located close to each in the near proximity of the Casablanca Airport, and were constructed within two years of each other. Table 1 presents the summary of startup and general operating costs for each of the center.

Table 1. Startup Costs and Annual Operating Costs for Vocational Training Centers in Aeronautical Sector (in DH)

STARTUP COSTS				ANNUAL OPERATING COSTS				Total annual operating costs	Total annual costs[2]
Agency bearing the cost	Building and TA[3]	durable equipment[4]	other equipment[5]	personnel	Materials	taxes/ insurance	other expenses		
L'Institut des Métiers de l'Aéronautique (l'IMA)									
government	37 mln	29.75 mln	5.25 mln						
private	33 mln	448,000	50,000						
other[6]									
annual cost	**4,925,275**	**3,631,049**	**1,173,851**	**5,531,000**	**6,364,000**	**2,483,000**	**136,000[7]**	**14,514,000**	**24,244,175**
Institut Spécialisé dans les Métiers de l'Aéronautique et de la Logistique Aéroportuaire (ISMALA)									
government	63.8 mln	9.7 mln							
private		6.38 mln							

[2] Total annual costs are computed by subtracting revenues from the annualized startup costs and annual operating costs

[3] 20 yrs amortization; 3.5% rate

[4] 10 yrs amortization; 3.5% rate

[5] 5 yrs amortization; 3.5% rate

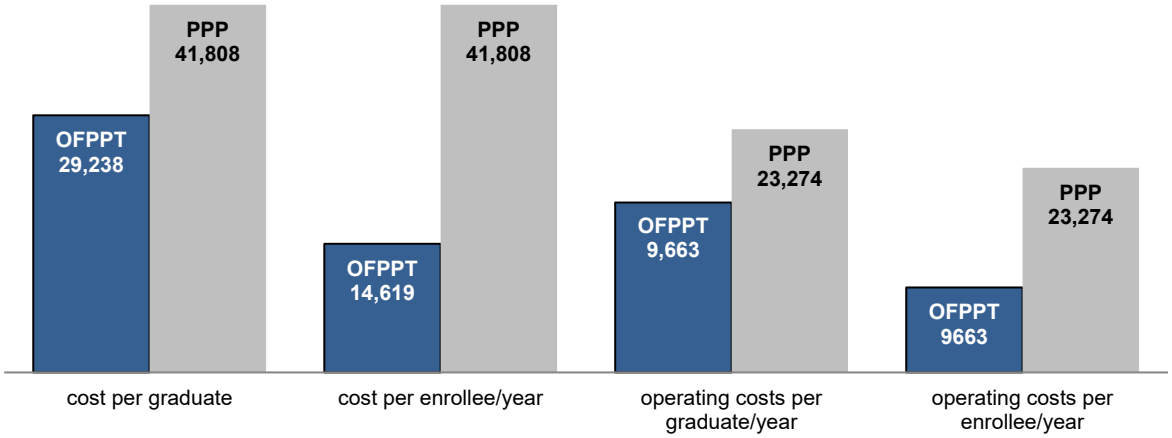
[6] "Other" are typically international development agencies, such as Agence Française de Développement (AFD).

[7] A gift for consumables that was reported. It is unclear whether this amount is already included as part of expenditure on materials reported separately.

other									
annual cost	**4,489,037**	**1,993,481**		**10,262,906**	**1,300,000**	**886,200**	**190,000**	**12,639,106**	**19,121,624**

While the annual expenditure appears to be rather similar for the two vocational centers, ISMALA enrolls twice as many students as l'IMA. While l'IMA was built to accommodate up to 800 students, its 2014 enrollment was only 525. ISMALA, on the other hand, has the enrollment of 1,300 in the two year program, with the average annual graduation of 650 students. The following graph presents the data on the costs by the unit of outcome.

Figure 1. Cost per Unit of Outcome in Aeronautical Sector, in DH



Once l'IMA enrolls students at its capacity of 800, if the expenditure remains the same, the annual operating cost per enrollee will drop to 15,274 DH. However, it is important to consider the difference in duration: l'IMA's program runs for a year while ISHALA enrolls students for a two-year program.

Automotive Sector

Similar to aeronautical sector, the automotive sector in Morocco has enjoyed a period of rapid growth, with a landmark of Renault investing €1 billion in a new factory in Tanger to produce 340,000 vehicles annually. In 2014, the factory employed 5,000 people and was estimated to indirectly support another 30,000 jobs. Automotive industry currently accounts for 5% GDP and 14% of industrial exports. The country's auto sector will help push GDP growth up 4.5 to 5 per cent in 2015-2016, from 2.5 per cent in 2014, predicted Capital Economics in a note, making Morocco "North Africa's best performing economy over the coming years". Car exports grew 70% in 2013 and 90% in 2014. The country's auto is expected to help push GDP growth up to 5% in 2015-2016, from 2.5% in 2014, according to Capital Economics,

making Morocco "North Africa's best performing economy over the coming years"[8]. It is expected that automotive sector will be adding 56,000 jobs by 2020[9].

Trainees at CFM OFPPT Center

The Moroccan government's strategy to support the industry includes incentives such as a 5-year corporate tax exemption for automotive companies setting up shop in the country, up to 10% of the total investment to help automotive facilities set up, and mechanisms of developing skilled workers, such as training programs tailored to the needs of the automotive sector, and support system for in-service training. As part of this strategy, Moroccan government supported setting up two **l'Institut de Formation aux Métiers de l'Industrie Automobile de one in Casablanca and one in Kenitra (*IFMIA Casablanca* and *IFMIA Kenitra*)**, following the PPP model of the vocational training, and ***CFM Réparation Automobile***, a the state-funded OFPPT training center. The centers were located around Casablanca and were constructed recently. Table 2 presents the summary of costs for each of the center.

Table 2. Startup Costs and Annual Operating Costs for Vocational Training Centers in Automotive Sector (in DH)

STARTUP COSTS				ANNUAL OPERATING COSTS				Total annual operating costs	Total annual costs[10]
Agency bearing the cost	Building and TA[11]	durable equipment[12]	other equipment[13]	personnel	Materials	taxes/ insurance	other expenses		
IFMIA Casablanca									
government									
private	40 mln	48 mln	7 mln						
other			160,000						
annual cost	**2,814,443**	**5,771,586**	**1,585,807**	**6,244,104**	**5,703,974**	**3,040,727**	**1,957,199**	**16,946,004**	**27,117,840**
IFMIA Kenitra									
government	40 mln	35 mln							

[8] "Motors in Morocco to Speed up GDP Growth", Beondbrics. http://blogs.ft.com/beyond-brics/2014/10/02/motors-in-morocco-to-speed-up-gdp-growth/. Accessed May 4, 2015.
[9] "Morocco Set to become Regional Leader in Auto Industry", MedAfrica Times, 2014. http://medafricatimes.com/3413-morocco-set-to-become-regional-leader-in-auto-industry.html. Accessed May 27, 2015
[10] Total annual costs are computed by subtracting revenues from the annualized startup costs and annual operating costs
[11] 20 yrs amortization; 3.5% rate
[12] 10 yrs amortization; 3.5% rate
[13] 5 yrs amortization; 3.5% rate

private									
other									
annual cost	**2,814,443**	**4,208,448**		**2,472,697**	**1,616,127**	**88,270**	**44,921**	**4,222,015**	**11,244,906**
CFM Reparation Automobile									
government	350,000	6.5 mln							
private		743,600							
other	8.5 mln								
annual cost	**622,696**	**870,981**		**1,414,914**	**350,000**	**30,000**		**1,794,914**	**3,288,591**

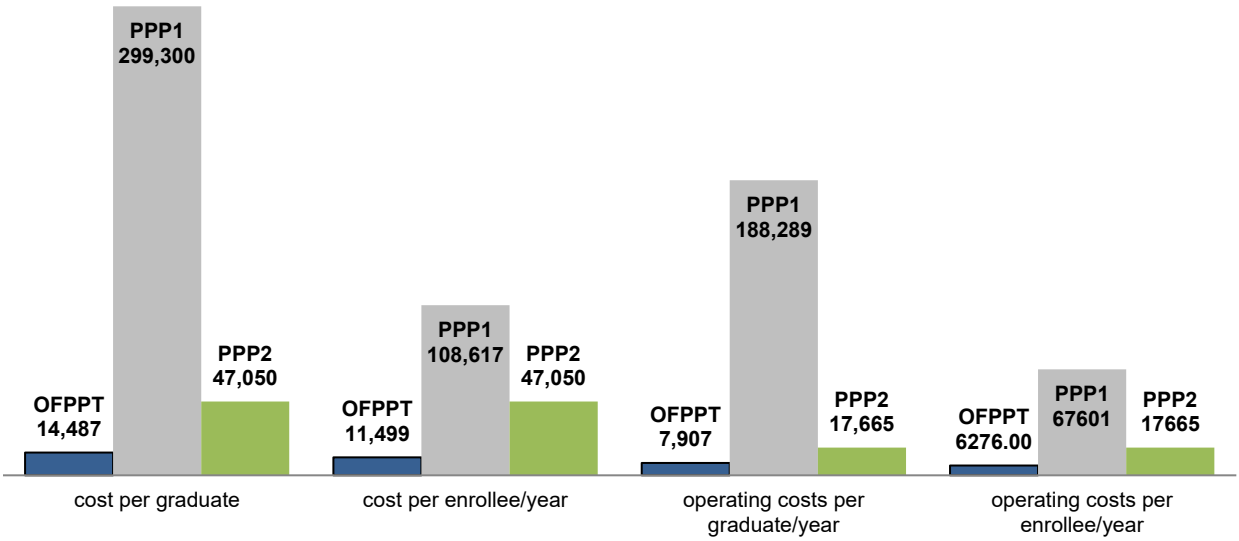
The startup costs were found to be similar across two PPP centers, although their annual operating expenditure was found to be rather different. The startup cost data reported by OFFPT, on the other hand, was very low. It possible that the amount reported only reflect a partial sum, such as the amount for renovation. Based on the data provided by the central office of the OFPPT, it was impossible to determine the reason for the discrepancy.

All the centers have a similar number of enrolled trainees, although because of the different length of the programs the number of annual graduates differ across centers:

- IFMIA Casablanca: 248 annual full time equivalent of students enrolled; 90 students graduate from 2-year program every year
- IFMIA Kenitra: 239 students are enrolled and graduate annually
- CFM Reparation Automobile: 286 annual full time equivalent of students enrolled; 227 students graduate.

Figure 2 shows the distribution of costs across the two models in two categories of measurement: cost per graduate and cost per enrollee per year, including annual operating costs.

Figure 2. Cost per Unit of Outcome in Automotive Sector, in DH*



*Note: Documents provided by IFMIA PPP contained conflicting data on the number of students enrolled and graduating. These data issues impacted computations of operating costs per enrollee and per graduate. Specifically, the trainees in the continuous professional development track were not included in the computations since the data on the amount of training received by them was lacking. Therefore, the calculations presented here must be interpreted with caution since including continuous training students would reduce the costs estimates per enrollee/graduate.

The findings highlight the high cost of construction of IFMIA Casablanca. Coupled with the low number of students that the center enrolls and graduates, these initial high cost results in a much higher per-graduate costs.

Textile Sector

Textile industry constitutes 4% of Morocco GDP and contributes 20% to export of goods. The industry is number one employer in Morocco, employing over 175,000 workers (36% of entire workforce)[14]. The export predominantly focuses on Southern Europe (Spain, Portugal and Italy) and is projected to grow. The key advantages for Moroccan textile industry are geography and low-waged, skilled workers. The industry has been able to evolve and adapt, responding to the needs of the fashion industry and what is termed "fast fashion" where fast turn round times and delivery are required. The industry is poised to create 90,000 by 2020, according to the terms of an agreement signed by the Moroccan Association of Textile and Clothing (AMITH) and the Moroccan Ministries of Industry, Economy and Finance in 2015[15].

Two PPP and one OFPPT vocational training centers in the textile sector have been included in the study: ***Casa Moda*** and ***l'École Supérieure des Industries du Textile et de l'Habillement (ESITH),*** to represent the PPP model of the vocational training, and ***Institut de Formation de Textile Ben M'Sik (IFT Ben M'Sik)***, to represent the state-funded OFPPT model. The PPP centers are tertiary level private institutes.

Table 3. Startup Costs and Annual Operating Costs for Vocational Training Centers in Textile Sector (in DH)*

STARTUP COSTS				ANNUAL OPERATING COSTS				Total annual operating costs	Total annual costs[16]
Agency bearing the cost	Building and TA[17]	durable equipment[18]	other equipment[19]	personnel	Materials	taxes/ insurance	other expenses		
Casa Moda Academy									
government	9,700,000	5,100,000							
private	20,000,000		120,000						
other									
annual cost	2,098,723	613,231	26,578	3,500,000	3,660,000	3,460		7,163,460	9,901,992
ESITH									
government									

[14] Textile and Clothing in Morocco, 2014. http://st.formazione.ilsole24ore.com/a/marocco/atti/Tazi.pdf, accessed May 57, 2015
[15] Sourcing Journal, "Moroccan Textile Industry to Create 90,000 Jobs by 2020", March 2015. https://www.sourcingjournalonline.com/moroccan-textile-industry-create-90000-jobs-2020-ll/. Accessed on June 5, 2015.
[16] Total annual costs are computed by subtracting revenues from the annualized startup costs and annual operating costs
[17] 20 yrs amortization; 3.5% rate
[18] 10 yrs amortization; 3.5% rate
[19] 5 yrs amortization; 3.5% rate

private									
other									
annual cost	2,568,000	763,000	249,000	29,669,000	12,822,000		15,625,000	58,116,000	61,696,000
IFT Ben M'Sik									
government	4,550,000	6,500,000							
private		1,803,130	10,501,958						
other									
annual cost	320,143	998,380	2,325,988	2,277,046	350,000	250,000		2,877,046	6,521,557

*Note: Documents provided by ESITH PPP and IFT OFPPT contained conflicting data; interviews did not succeed in resolving contradictions. The data issues identified included the computations of annual operating costs in ESITH PPP and the number of graduates in IFT Ben M'SIK OFPPT Center. The calculations presented here are made given the available data and must be interpreted with caution.

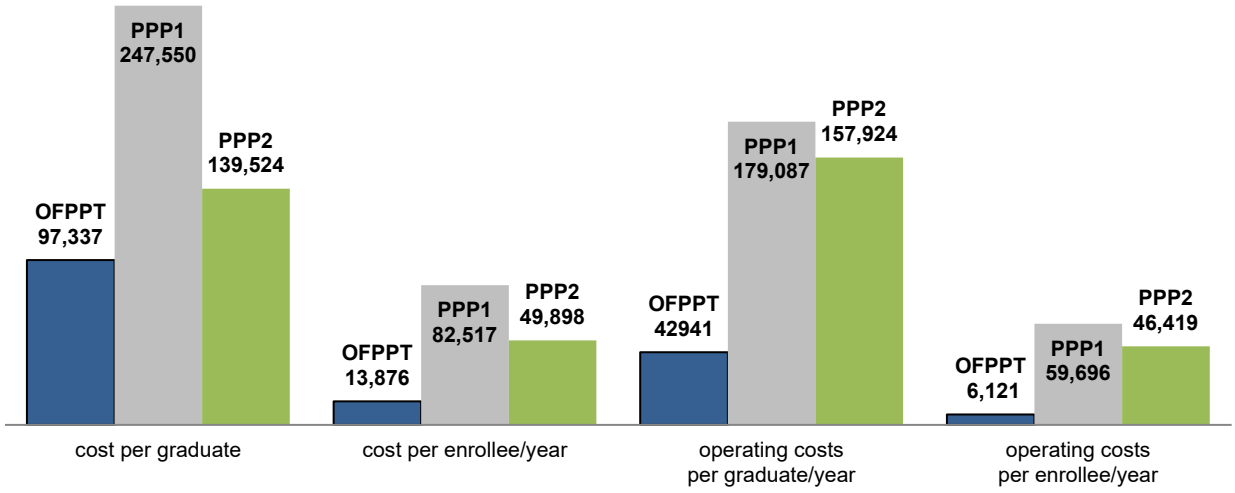
Trainees at IFT Ben M'SIK OFPPT Training Center

The startup cost reported by the centers, were very low. ESITH and IFT Ben M'SIK centers were established some decade ago and have been renovated. The three centers selected for the study of the textile sector vocational training had a very different structure. While Casa Moda is a rather small tertiary level institute (annual enrollment in a three-year program is 40 students), ESITH is a very large institute that enrolls nearly ten times the number of students (over 1,000). IFT Ben M'SIK has 470 enrollees, but of them over 400 are first year students, indicating a very high dropout rate which in turn drives up the annual operating costs per graduate.

The PPP centers charge 20,000 (ESITH) and 25,000 annual tuition, and 10,000 for boarding. The study team was not able to obtain data on the enrollment/tuition fees charged by IFT Ben M'SIK.

The graph below shows the distribution of costs across the two models in three areas of measurement: cost per graduate, cost per enrollee per year, and operating costs per enrollee per year.

Figure 3. Cost per Unit of Outcome in Textile Sector, in DH*



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Conclusions and recommendations

The main finding of the study was that the PPP model appears to have much higher costs of producing graduates compared with the OFPPT model. However, the true comparison should involve the rate of employed graduates. Of all the centers studied, only l'IMA tracks the employment rate of its graduates, and reports it at 93%. Two other centers reported "anecdotal" evidence but were not able to produce actual data. This anecdotal evidence suggests that PPP centers are more successful in securing formal employment among their graduates, compared to OFPPT centers. However, the precise impact of the employment rate on the cost-effectiveness of the centers could only be computed once actual data are available.

Some of the reported costs would also need to be verified. Centers process their budget data differently, and most centers could not easily produce requested information about their expenditures. For examples, while some centers reported the amount they pay in taxes, others did not. Integrating the revenues into the cost analysis also presented a problem: OFPPT centers do not get paid directly and do not keep records of how much money their services eared, and one of the studied PPP centers reported being owed a substantial amount of money for the professional development services. Additionally, the study team found it difficult to obtain accurate dropout records from the visited centers. The study also did not include participant costs into the cost model, largely because not all centers supplied this information.

Understanding the costs of training and employing a young person is of crucial importance to the development of the vocational training system in Morocco. Such cost data would allow the Moroccan

government and the donors to appropriately plan interventions and policy development, more accurately project results of such interventions, and based on the data identify priorities for investments for each growth industry. At a more granular level, cost-effectiveness data would help identify best practices as well as savings that could be achieved through economies of scale.

The study team's recommendation is to establish a simple and clear system for a routine collection of the cost data that all centers would be required to comply with. Such system should collect data on the following costs and revenues:

- Annual expenditures at the center level, including a clear breakdown of costs along the following lined:
    - Instructional staff
    - Administrative staff
    - Consumable materials
    - Durable materials
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Appendix A. Bibliography

Annotated Bibliography: Education and Professional Training in Morocco. Education Development Center, 2014.

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Appendix B. Methodological Notes

The study involved five distinct steps (Belfield):

Step 1: Describing the Program

- Collect descriptive information on the programs to be studied: number of participants, their ages/backgrounds, time period of program delivery, and the dosage (duration and intensity). This information will help identify the incremental costs, i.e. the difference in costs between the programs.
- Consider other contextual data (including variation by site, by participant, or over time).

Step 2: Identifying Inputs/Ingredients

- Build a spreadsheet with row entries for: ingredients, questions, description, assumptions/notes, quantity, units, unit price, total price.
- Draft a list of ingredients in the four categories. Include all known ingredients; some new ones will emerge during interviews. Include only ingredients necessary for replication (not those on research and development or evaluation). Note if each ingredient is for the program, business-as-usual, or incremental.
- Draft units for each ingredient. Examples of units are FTE staff (Full Time Equivalent), % FTE, hours/weeks, computers or computer hours, square feet or square feet hours, miles or public transportation trips.
- List questions needed to describe each ingredient for quantification and pricing. This information varies across each category:
- Personnel: each person's qualifications/education, experience, occupation (or program responsibilities).
- Volunteers: their qualifications, duties, how they are selected/recruited.
- Training to implement a new program: hours of training received, follow-up professional development.
- Facilities: amount of space (square feet), amount of time, if any specialized technology or infrastructure is required.
- Materials/equipment: computers, books, office supplies/overheads.
- Other inputs: possible transportation, child care subsidies, in-kind resources, scholarships/stipends, food services.

Step 3 Collecting Ingredients Data

- Draft interview protocols for each type of personnel.
- Draft contact log to keep a record of all contact with participants from recruitment through completion.
- Conduct interviews; transcribe information as needed.
- Enter data into spreadsheet.

Step 4: Pricing Ingredients

- Match each ingredient with a price that represents its value. This value should reflect the idea that all resources have alternative uses. Prices used can be actual average across programs of the same type, or country-level average (if available).
- Personnel and volunteer prices are based on average wages (including benefits and employer compensation) for each position based on experience and qualifications.
- Facilities prices should be based on market rates to rent an equivalent space. If facilities last over multiple periods, an amortized price should be used. Overhead rates should be collected.
- Materials/equipment and other input prices are based on what it would cost to buy these in a private market.
- Express prices in constant, inflation-adjusted dollars (using the Consumer Price Index calculator, if available).
- Adjust prices to a national context if appropriate.

Step 5: Estimating Costs

- Multiply each ingredients' quantity by its unit price to get costs.
- Discount each cost back to the start date of the program.
- Sum the costs of the ingredients to obtain a total social cost. Subtract user fees and other payments to get total input costs.
- Divide participant numbers or enrollees to calculate the per student cost.
- Allocate costs according to who finances each ingredient. Subtract any cash transfers or subsidies paid between parties to finance the ingredients.

Appendix C. Interview Protocol (L'enquête des visites aux établissements de la formation professionnelle)

L'objectif de cette recherche est d'établir des coûts par unité de mesure d'un résultat au sein des établissements de la formation professionnelle. Pour cette étude, nous considérons les filières suivantes : automobile, aéronautique et textile, et deux modelés de la formation professionnelle : OFPPT et PPP. Nous visitons les établissements pour collecter les données à propos des filières, les niveaux des stagiaires, et les budgets. Cette étude consiste à déterminer le coût d'efficacité de la formation professionnelle.

Information sur l'établissement:

Etablissement:

Nom du directeur:

Le contact du directeur :

Email : **Téléphone:**

Secteur : ☐Aéronautique ☐Textile ☐Automobile

Questions pour le directeur:

1. Votre établissement existe depuis quelle année? _____
2. Combien des stagiaires vous avez?

Niveaux	# stagiaires	% femmes	Quelles professions?	La durée des programmes (mois ou années)	Durée de stage

Niveaux	% de déperdition en 2013	% des lauréats recrutée en 2013	% de déperdition en 2014	% des lauréats recrutée en 2014

3. A quel moment vos étudiants seront-ils introduits à leur futur employeur?	☐ Quand ils sont admis au centre ☐ Pendant leur stage ☐ Ils sont obligés à trouver leur propre boulot ☐ Autre (explique _____
4. Avec combien des entreprises avez-vous des partenariats (formelle/ informelle)?	_____
5. Combien de personnel vous- avez?	• Administrative: • Pedagogue:

6. Budgétisation : Je voudrais voir les catégories du budget, des dépenses annuelles pour chaque catégorie.
    a. Le bâtiment a été construit dans quelle année? _____
    b. Débarrassent : les dépenses totales

Catégorie de dépenses:	L'Agence qui a payé et le montant:		
Bâtiment (annualisée par 20 ans)			
Equipement, longue durée (10 ans)			
Autre matières (4-5 ans)			
Autre (explique)			

7. Pour l'année 2014, combien de fonds est-ce que vous avez dépensé par chaque catégorie des dépenses?

Personnel	
Matières Premières	
Autres (explique)	

8. Pour l'année 2014, combien de fonds est-ce que vous avez reçu par les activités comme formation continue?

Revenue de formation continue	
Autre revenues	

9. Pour l'année 2014, a combien des entreprises est-ce que vous avez vendu vos services?

_____

10. Est-ce que l'établissement a reçu des dons (en argent, en matières premières, en utilisant le personnel) du secteur privé ou autres associations ?

Catégorie	Valeur	Quand ?
Equipment (10 ans)		
Matières premières (4-5 ans)		
Autre (combien?)		
Fonds supplémentaires		

11. Autres détails :

Appendix D. Details of the Visited Centers

Authors: Hayat Essakkati and Elena Vinogradova

Aeronautical Sector

PPP : L'Institut des Métiers de l'Aéronautique (l'IMA)

The IMA was created through a partnership between the Moroccan government, Groupement des industriels Marocains aeronautique et spatial (GIMAS), Union Francaise des industries et des métiers de la Metallurgie (UIMM/ France) and France's development agency (AFD). The center is managed by GIMAS to ensure a strong match between the provided training and the industry needs. IMA only selects students with a scientific or technical Bac – Bac +2. The center was inaugurated on May 2011 and the first student enrollment occurred in April 2011. The current capacity of IMA is at 800 students per year. IMA preselects the students on behalf of the companies so that everyone accepted into the program is ensured of a job from the very start of their training. All the teachers are recruited from the private sector. Students spend 70% of their program at IMA and 30% at the company (and future employer). The insertion rate was at 93% in 2014, up one percent from 2013. After their training at IMA, trainees do a 3-month internship after which they are permanently hired. The application rate is very high, relative to the number of spots available: from a group of 120 applicants, only 16 people get selected into the program.

L'IMA main building

L'IMA main training hall

The center has an annual operational budget of 15M MAD. The goal was to increase their revenues by 20% of the operational budget in 2015, which is 3M MAD. A total of 525 students finished their studies with IMA. IMA is very much used by companies such as Safran, Airbus and Bombardier to train their production technicians and operators.

OFPPT : Institut Spécialisé dans les Métiers de l'Aéronautique et de la Logistique Aéroportuaire (ISMALA)

Institut Spécialisé dans les Métiers de l'Aéronautique et de la Logistique Aéroportuaire (ISMALA) was inaugurated in September 2013, based on a signed agreement between the OFPPT and the Royal Air Maroc (RAM). The total cost for the establishment of ISMALA was 72.2 Million Dirhams. ISMALA's eight training programs specialize in the maintenance of planes and helicopters.

The duration of the training program is 2 years with a 1-month internship in the first year and a 2-month internship at the end of the second year. The admission criteria differ across training programs. All Technician Specialist training programs require Baccalaureate level. None of the Technician training programs require a Baccalaureate level diploma.

ISMALA instructor

The first cohort of students (2013/2014) have been placed as technicians with an aero- technic industry company (shared property of Air France and RAM, or ATI) and Royal Air Maroc. The remainder were taken as intern-mechanics at ATI. The insertion rate for 2013/2014 was 80%. In 2014-2015 the center had a total of 1302 students. In average, about fourteen percent of the students are women.

OFPPT
La voie de l'avenir

ROYAUME DU MAROC

Institut Spécialisé dans les Métiers de l'Aéronautique et de la Logistique Aéroportuaire (ISMALA)

Un institut Inauguré par Sa Majesté le Roi Mohammed VI, le Mercredi 11 septembre 2013

ISMALA : un Centre d'excellence aux normes internationales

- L'ISMALA vient renforcer le dispositif de l'office créé depuis 2003 pour accompagner l'essor qu'a connu le secteur de l'aéronautique durant la dernière décennie.
- Implanté dans la zone aéroportuaire de Nouaceur, l'ISMALA permet de satisfaire le besoin en personnes qualifiées défini par le Pacte National pour l'Emergence Industrielle, qui s'élève à plus de 15.000 emplois directs dans le secteur à l'horizon 2016.

- L'ISMALA assure les formations dans la Maintenance Aéronautique et dans les métiers liés à l'Industrie Aéronautique et à la Logistique Aéroportuaire.
- Construit sur une superficie de 15000 m², dont 8940 m² de surface couverte, l'Institut offre une capacité d'accueil de 2[illegible] places pédagogiques.

Financement

Investissements	Coût en MDH
Travaux de Construction	51,6
Etudes	3,3
Equipements	9,7
Assistance Technique	7,6
Total	72,2

Filières de formation

8 Filières de formation	Prérequis exigés	Niveau	Durée de formation
Maintenance Aéronautique	Bac+2		2 ans
Mécatronique	Bac		
Usinage sur Machine outils à Commande Numérique	Bac	Technicien Spécialisé	2 ans
Logistique aéroportuaire	Bac		
Traitement de surfaces	Bac		
Ajustage Montage de Cellules Aéronef	Niveau Bac		
Chaudronnerie Aéronautique	Niveau Bac	Technicien	2 ans
Matériaux Composites en Aéronautique	Niveau Bac		

- L'ISMALA dispose d'un simulateur d'avion AIRBUS 3D, d'un avion KING AIR 200, de 4 réacteurs gros et moyen porteurs, des machines d'usinage à commande numérique et des stations de mécatronique.

ISMALA statistics at a glance

Automotive Sector

PPP : l'Institut de Formation aux Métiers de l'Industrie Automobile de Casablanca (IFMIA Casablanca)

IFMIA Casablanca is one of four PPP training centers that have been created within the National Pact for Industrial Emergence wherein the Automotive Industry was selected as one of the six major growth sectors in Morocco. The creation of IFMIA has been official after a signed convention on June 5, 2012.

The development agencies of Korea (KOICA) and France (AFD) funded the construction of the state-of-the-art training facility. KOICA, Renault and the Moroccan government provided most of the center's equipment.

IFMIA Casablanca offers Initial and Qualifying Training (for employed operators and technicians). Both the teaching and administration staff are required to have a minimum of 5 years of relevant experience. All IFMIA instructors bring a deep understanding of private sector needs. IFMIA spends 60% of their operational budget on personnel.

IFMIA's focus is on training future technicians and operators. These professions prove to be popular among young people, since IFMIA received 900 applications for the first round of the Initial Training programs and 1500 applications in the 2nd round. The center could only admit 90 for each cohort of students. Selection process for program entry included the following requirements: results of the entrance exam, Baccalaureate Exam results, and an interview.

In addition to training students in the competencies relating to the automotive operation, repair and maintenance, IFMIA provides soft skills training: three hours of week in English and three hours a week in communication skills. Teamwork, time management, planning, and other soft skills are also included as part of the content curricula. The center also offers e-learning opportunities. Each trainee signs a three-way contract, between the center, the employer and the trainee, that describes the responsibilities of each party. Employers commit to providing trainees with practicum opportunities, and employing them if the practicum is successful. The center commits to providing a quality training, and the trainee commits to full participation in training activities.

PPP: l'Institut de Formation aux Métiers de l'Industrie Automobile de Kenitra (IFMIA Kenitra)

The IFMIA Kenitra was created in January 2013 and became operational in November 2013. The IFMIA Kenitra training center provides training in *formation à l'embauche*, *formation qualifiante* and *formation à la carte/ par apprentissage*. The center envisions providing a professional Baccalaureate Diploma and continuous training next year (2015/2016).

The center is a public-private partnership between the Moroccan Government (part of National Pact for Industrial Emergence) and a Spanish company named Alecop. The Moroccan government provides all of the operational funding. The initial investment of 86 Million MAD was for construction of the building and the training equipment. Alecop was also responsible for the management of the budget until Mid-March 2015, and the Moroccan government contributed 10 Million MAD to Alecorp each year for technical assistance and management of the center. Currently, IFMIA is slowly assuming responsibility for their budget management.

The center admitted 236 students in 2014 of which 160 will receive 1-year vocational training program in becoming fitters and operators. Trainees are supposed to spend 80% of their time at a relevant company for the on-the-job training and 20% of time doing coursework at IFMIA Kenitra. The center is expecting to launch a professional High School Diploma (Baccalaureate), a 3-year program (120 hours in the 1st year), once the government has provided them with an official decree. The total capacity of IFMIA is 852 students.

Following the PPP model, the center also sells continuous professional development to private sector companies which should generate up to 20 percent of their budget. The center has partnerships with eight companies for the on-the-job training and placement of their trainees.

IFMIA Kenitra main building

OFPPT: CFM Réparation Automobile

EFP Reparation Automobile admitted its first trainees in September 2014, after its inauguration in July 2014. EFP Automobile is one of the 54 OFPPT centers in specializing in vocational training for the automotive industry. The center was established with the funding from the Foundation Muhammed V and the OFPPT. The Foundation covered the costs for construction of the building while the OFPPT funded all of the operational expenditures. The center also received a donation of some training equipment from Fiat and BMW.

The center maintains close relationships with 20 large automotive companies and dozens of small auto-repair companies. All of the center instructors are recruited from the private sector. The provided training programs can be divided into 4 levels:

- Technician Specialist: 2-year program requires a Baccalaureate (High School) Diploma. It has 2 concentrations: Diagnosis & Embedded Electronics and Sale of Vehicles & Spare parts. Internships: 6 weeks in the first year and 2 months in the second year.

- Qualification: a 2-year program in 'Reparation of Automobile Vehicles' or 'Painting of Vehicles'. Internship: 4 months.

- Technician: a 2-year program in 'Repair in Automotive Paint' or 'Repair of Motor Engines'. Internships: 6 weeks in the first year and 2 months in the second year.

- Qualifying Training: this program depends on the demand from partners. An example of one of the trainings provided is 'Diagnostic Automotive Electronics' (with a 6 month training and a 4-month internship). This level shows the highest dropout rate (12%) in spite of the program's short duration (1-6 months).

The center has between 340 and 360 trainees. In addition to content area training, all trainees receive instruction in soft skills, such as languages (French and English).

Trainees at CFM Réparation Automobile Center

Textile Sector

PPP: Casa Moda Academy

Casa Moda Academy or, in more official terms, the School of Creation and Fashion (ESCM), has been established through a convention agreement in July 2010 between the Moroccan government, the Moroccan Association of Textile and Clothing Industries (AMITH) and the School of Textile and Clothing (ESITH). Casa Moda Academy was established to support the transition within textile companies towards more finished products, following the October 2005 agreement between the Government and AMITH and a feasibility study conducted by the Moroccan government with the support of the French Institute of Fashion (IFM). Finally, a financing agreement signed in April 2008 between Morocco and the French Development Agency (AFD) allowed for the creation and rehabilitation of sectoral centers of vocational training.

Casa Moda Academy is managed by ESITH that received funding for construction and Technical Assistance of the Academy. From the total initial budget of 35 Million DH for construction of the building and the equipment, 20 Million DH were donated by the French development agency AFD. The annual operational budget of CMA is 4 Million Dirhams provided by the Moroccan government

The training center offers training in the skills required by the industry, but also offers soft skills classes in communication, languages, and presentation skills. Approximately 20-30% of the students continue working at the same company of their internship after completion of their studies.

The Academy offers both full-time training programs (*licence professionnelle* and *master spécialisé*) and continuous professional development services.

PPP : L'École Supérieure des Industries du Textile et de l'Habillement (ESITH)

ESITH was established in 1996 with a large investment (80% of the total initial fund) of 168 Million DH from the European Commission covering both the construction and equipment costs. The Moroccan government covered the remainder of 20%. ESITH is established through the agreement between AMITH and the OFPPT. The mission of ESITH is to educate engineers and specialized technicians to become highly qualified in the diverse branches of textile and clothing.

ESITH Training Institute

ESITH is a tertiary private education provider and thus falls under the Ministry of National Education and not under the Ministry of Vocational Training.

The total annual cost with regards to the building, equipment and technical assistance is approximately 3,580,000 Dirhams. The annual revenues for ESITH exists for 45% of the students' tuition fees and housing, 35% from the operational budget and 20% from the sold services to companies (10 Million DH). The tuition fees for each student are 20,000 DH.

The internships are arranged by the many conventions signed by ESITH with approximately 300 companies. ESITH's targeted profiles are: purchasing manager, logistics engineer, supply/distribution superintendent etc. The average starting salary for ESITH alumni is 7800 DH per month.

Like other vocational training centers, ESITH has a very high application rate. From the 1200 applications that are allowed to take an exam at ESITH, only 160 students are accepted into the school. The capacity of ESITH is up to 2000 seats. Currently, ESITH has 1209 students from all years and studies. ESITH offers housing to 680 students who come from outside of the Casablanca region. ESITH graduates around 300-400 trainees per year.

ESITH plans to build another campus in Tanger (in 2016) with the goal to reach 440 students in 5 years. In this campus, due to its geographic location, the training programs will emphasize more deeply on transport management and logistics.

ESITH trainees

OFPPT: Institut de Formation de Textile Ben M'sik Casablanca (IFT Ben M'Sik)

The school is established in 1987 and underwent a large expansion through the construction of a second building in 1998. The IFT has been the first center created by OFPPT in collaboration with AMITH aiming at contractual vocational training initiated in 1987 in the textile sector.

The IFT start-up costs were 46 Million DH, of which 37 DH for equipment was covered by the International Bank for Reconstruction and Development. The IFT also received financial support from several foreign institutes such as the European Commission, European Investment Bank and the World Bank as part of agreements made by the OFPPT.

Institute equipment

The Institute provides vocational training along three tracks: technician, technician specialist and qualifying training. The Technician Specialist requires applicants to have finished 6th year of primary school, and the Qualifying Training requires students to have finished the ninth year of secondary school as is the case for short Certification trainings. The Technician training program does require a Baccalaureate in Science or Literary Studies.

The picture can't be displayed.

The school has 470 students in total (first and second-year students): 406 students in the first year and 68 students in the second year. This either means that many students drop out in the second year or that there have been a very low number of first year students in 2013/2014.

The IFT is considered as the laboratory for quality control in textile in Morocco. This laboratory has the objective to produce the most comprehensive quality control assessment.

Institute trainees