EXPANDING WOMEN'S PARTICIPATION IN SCIENCE, TECHNOLOGY AND ENGINEERING: THE CASE OF THE UNITED ARAB EMIRATES

Subtheme: Career choices made by female students in the UAE.

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Introduction

The United Arab Emirates (UAE), the emirate of Abu Dhabi in particular, has recently embarked on an effort to diversify its economy away from oil and gas and to transition towards a knowledge-based economy. Such a transformation process is a complex undertaking, requiring a close collaboration between various actors including the government, industry and academia. Moreover, strong expertise in science, technology and engineering is critical for the transition process to achieve its expected goals[1].

Nevertheless, several challenges exist with respect to the human capital in the UAE. Emiratis constitute a minority in their country. In addition, the UAE labor market is segmented with the majority of Emiratis working in the public sector and the majority of expatriates being employed in the private sector (Hafez 2009; Al Kibisi et al. 2007). Knowledge production in the UAE is weak despite high level of education attainment (UNESCO 2009). Moreover, gender imbalances in the workforce are striking - women comprise half of the Emirati population (The Government of Abu Dhabi 2009; UAE Ministry of Economy 2008), and the majority of university graduates (UNESCO 2009), but despite an increasing trend[2], their participation in the labor market is low (around 10%)[3].

Considering the above, we argue that a broader involvement of the local population in the science, technology and engineering (STE) field is needed to facilitate the successful and sustainable transformation process. Our paper aims to tackle the issue of economic transformation by focusing on one critical aspect: how to encourage a larger participation of women in STE professions, given technology development and innovation are at the core of a knowledge economy. This research is part of a larger study that explores social, cultural, and economic factors which encourage or prevent women from obtaining an education or pursuing a career in STE related fields (Vidican at al. 2010).

We believe that macro level strategic discussions about industrial diversification and economic transformation are likely to be misguided without an in-depth understanding of the "baseline" (the human capital[4] as well as the institutional[5] context within which these human resources are developed). Findings from our study will contribute to indentifying potential missing links between the three key actors (government, academia, private sector), and to developing informed policy recommendations to effectively support the transition. Furthermore, our study

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[1] The 2003 Arab Human Development Report identified four key "inputs" to knowledge production: the ability to produce knowledge workers, workers in scientific research and development, expenditure on research and development, and institutions.

[2] According to Nelson (2004) the share of women in the national (Emirati) workforce rose from 13% in 1995 to 25% in 2003; according to the Government of Abu Dhabi (2009) it equaled to 18.5% of the national workforce in Abu Dhabi in 2005. In addition, as pointed to us by our interviewees, determined Emirati women entered even such fields such as electrical or petrochemical engineering.

[3] The labor force participation rate is the percentage of the population aged between fifteen years and sixty five years who are in the labor force.

[4] The combination of competences, skills, knowledge and personality attributes of Emirati graduates and Emirati workforce.

[5] *"(…) sets of common habits, routines, established practices, rules, or laws that regulate the relations and interactions between individuals, groups and organizations"* (Edquist and Johnson 1997).

underscores the importance of adapting mainstream policies to the local context, and the need to better understand the effect of culture and society on the individual and the economy.

Challenges to developing a knowledge-based economy in the UAE

UAE faces several challenges in the transformation process, such as: (a) a weak capacity for innovation[6]; (b) a segmented labor market where only 1% of the Emiratis work in the private sector (Abdalla et al. 2010); (c) misalignment between market demand and the specialization of the graduates (The Government of Abu Dhabi 2008); as well as (d) a conformist culture that discourages risk taking[7] and puts the family before individual aspirations (Shono and Smith 2006; Gallant and Pounder 2008).

To address some of these issues, the government of Abu Dhabi wants to focus on increasing national workforce participation and employability, equipping the emirate's youth to enter the workforce, and maximizing the participation of national women in the workforce (The Government of Abu Dhabi 2008).

Development and dissemination of new knowledge is an important source of dynamics for an economy. Knowledge that fosters innovation and inventions is of particular importance (UNDP 2009). Hence, individuals able to create, disseminate and commercialize knowledge, as well as institutions to support them in these activities (UNDP 2002, Leydesdorff 2006) are crucial for the transition process to happen. At this stage, however, the "people" element is a challenge that needs to be addressed for this process to be successful. Emirati citizens make up a mere 20% of the UAE population[8] (UAE Ministry of Economy 2008). Therefore, the country will need to continue attracting skilled and unskilled foreign workforce to meet its evolving development needs. Yet, it is unlikely that the planned transition towards a knowledge-based economy will be successful without developing the national workforce[9].

Nevertheless, UAE's young national population[10], and the limited brain-drain (World Economic Forum 2007) can offer significant advantages for the economic transformation process, provided that these young people are equipped with the right skills, knowledge and attitudes.

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[6] That includes low quality of scientific research institutions, low company spending on R&D and weak university-industry collaborations (World Economic Forum 2007; UNDP 2009).
[7] While the visionary leaders of the UAE are supporting innovative technologies, elements of Arab culture may inhibit innovation (Pollock 1996; Lester et al. 2008).
[8] As of now, the only way for obtaining an Emirati citizenship is by being born to an Emirati father or by the president's decree, which is however, a rare phenomenon. Dual citizenship is forbidden in the UAE.

[10] In 2005 65.5% of the national population in Abu Dhabi was under the age of 24 (The Government of Abu Dhabi 2008). The figure for the whole UAE is 64% (UAE Ministry of Economy 2007).

The role of women in economic development

Women in the active age group comprise half of the Emirati population (UAE Census 2005), and there are significantly more women and than men in tertiary education in the UAE (UNDP 2009; UAE Ministry of Economy 2007; UAE Census 2005). Additionally, it has been demonstrated that girls outperform boys at the secondary level of education (Ministry of Education and Scientific Research. (2009). Yet they comprise only a minority of the workforce (Nelson 2004; UAE Ministry of Economy 2007), suggesting that there is an untapped pool of talent in the labor force. Therefore, we find it important to explore how women in the UAE could be encouraged and given opportunities to enter the labor market in the STE field, in particular.

Gender equality is more than a human rights issue. Earlier studies reported strong economic benefits from a diverse workforce and argued that there is a direct link between increased female labor participation and economic growth (i.e. McKinsey & Company 2007; Emerson 2009; Mason and King 2001; ESCAP 2007). Therefore, lack of women's participation in the labor market suggests that UAE does not capture the Return on Investment from women's education and does not fully utilize economic, intellectual and leadership potential (UNDP 2002) of almost half of Emirati population.

It is also in the government's and the industry's interest to encourage and help women to enter the STE field. Engaging women in STE education and consecutively offering employment opportunities in this field will increase the country's knowledge-base, innovation capabilities and competitive advantage in fields that play an important economic role in the country's economy. A local population with stronger scientific and technical knowledge will be better equipped to evaluate Western science and new technology within their own cultural context (Hays and Farhar 2000) as well as to contribute to the innovation processes. Low supply of national high-calibre graduates in STE will further hinder the economic transition process and put greater pressures on the government and UAE based firms to compete for talent on the global labor market. Women no longer should be perceived as passive recipients of science and technology. Instead, they should be equipped with the right skills, knowledge and attitudes, and should be given opportunities, and encouragement to participate in STE education and employment.

Research Focus

This study is part of a larger research project which has focused on two main issues: (1) exploring factors that influence women's decision regarding the degree program they choose to pursue, and those that influence their career plans; (2) assessing women's attitudes towards science, technology and engineering education and career opportunities[11].

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[11] More details on the larger project can be found in Vidican at al. 2010.

In this paper we focus on one aspect of the larger study. Specifically, we aim to identify what women plan to do after they graduate and explore the social, cultural, economic factors that affect their post- graduation plans. In light of our findings, we also discuss how a closer collaboration between industry, government and universities will be crucial for encouraging as well as enabling greater participation of women in the STE field.

Methodology

To explore the career choices that women make and the factors that influence these choices, we have used survey research methods and semi-structured interviews. Between March and May 2010 we conducted a survey among university women students at the undergraduate and graduate level, in both private and public universities across the UAE. Over 2520 women students took part in our study. To our knowledge this is the most extensive study ever done in the UAE on this topic.

The share of women students enrolled in STE fields in our sample is 46%. The majority of students, 64%, are Emirati, while the remaining are non-Emiratis. The vast majority of the students have never been married, are between the ages of 20-25, Muslim, and come from middle income families.

An important fact to mention is that no public sharing of students' names or IDs is made for research purposes by UAE universities. This limits the possibility of randomly selecting a sample among students. For this reason, our study is based on a non-probability sample. We analyzed students' responses by using descriptive statistics. The diversity of universities selected in terms of size, geographic location, type of departments, and the mix of both public and private universities in our sample does add significant value to understanding women's choices regarding education and career in the UAE.

To obtain a more comprehensive understanding of the issues at stake, we also gathered information by conducting 16 qualitative interviews with an "expert sample" in the months of May and June of 2010. Our interviewees included: successful Emirati female engineers, academics working on emiratisation[12], university administrators, representatives of NGOs and educational policy makers. The discussions were guided by an interview protocol adjusted to the specific background of the interviewees. The interviews were audio taped, transcribed, coded, and analyzed using the NVivo software.

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[12]Emiratisation is a UAE government's policy aimed at providing employment opportunities for young Emiratis and consequently replacing the expatriate workforce with UAE nationals.

Women's career choices

In this paper, we describe what women students plan to do after graduation and what factors (social, cultural, economic) affect their post-graduation plans. First, we find that most students intend to work after graduation. Second, our data and previous studies suggest that there is a misalignment between the specialization of the graduates and the labor market needs. Third, we also find a lack of awareness among female students of what engineers, scientists or technologists do. Fourth, we find that Emirati who have a female family member working in STE are more likely to be enrolled in STE related educational programs and envision a career in this field. Lastly, Emirati students are reluctant to work in the private sector. Below, we present each of these findings in greater detail. These results lead us to conclude, in the last section of the paper, that a close collaboration between universities, government and industry is needed to enhance women's participation in the science, technology and engineering field.

Given the high proportion of females among UAE graduates[13] and low level of female participation in the labor force in the UAE, we were intrigued to learn what female students plan to do after graduation and why only a minority of female graduates join the labor force.
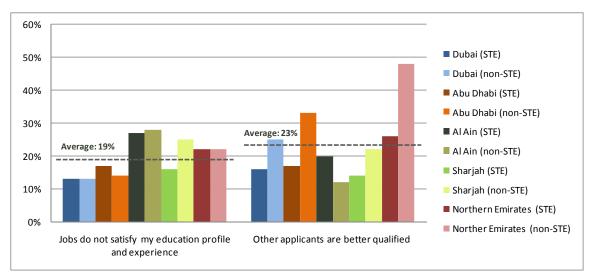
It turns out that almost half (47%) of the respondents plan to look for a job after they graduate. In addition 5% plan to both work and study. Almost one third of students (31%) aim to continue education at graduate level, 13% of respondents want to take some time off before they decide about their future or do not know yet what they want to do. The remaining 4% have some other plans (i.e. they want to dedicate full time to family matters or plan to start a business).

When asked why they do not intend to work after graduation, as many as 78% cite the desire to pursue education at graduate level. At first, this finding is encouraging as it suggests ambition for personal and professional development among the students. Nevertheless, further analysis reveals some alarming issues. Among these students, almost one in five (19% of STE students and 19% of non-STE students in this category) cite a mismatch between their knowledge and existing job requirements as a reason for not planning to work. Moreover, 23% of students who do not plan to work after they graduate (18% of STE students and 27% of non-STE students) believe that other candidates are better qualified.

Although the level of these concerns varies depending on the student's family residence and field of study (see Figure 1), based on our findings, one can argue that, potentially, one fifth of the students who plan to pursue graduate studies do so as a last resort, because other career alternatives are not available to them.

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[13] Females constitute 65% of graduates in the UAE (ISCED 5 and 6) according to UNESCO (2009) data.
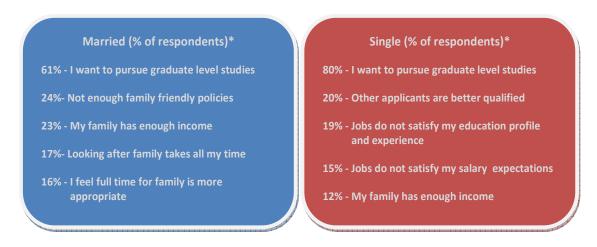
Figure 1: Selected reasons why students do not plan to work after they graduate by student's family residence and field of study.

N (Dubai STE & non-STE)=157; N (Abu Dhabi STE & non-STE)=159; N (Al Ain STE & non-STE)=157; N (Sharjah STE & non-STE)=122; N (Northern Emirates)=142.

Further analysis reveals that family related issues constitute important factors for why married students do not intend to work after graduation (Figure 2), whereas respondents who are single are mostly concerned about their skills, education profile and lack of experience.

Figure 2: Five main reasons for not intending to work after graduation by marital status.

Married (% of respondents)*

61% - I want to pursue graduate level studies

24%- Not enough family friendly policies

23% - My family has enough income

17%- Looking after family takes all my time

16% - I feel full time for family is more appropriate

Single (% of respondents)*

80% - I want to pursue graduate level studies

20% - Other applicants are better qualified

19% - Jobs do not satisfy my education profile and experience

15% - Jobs do not satisfy my salary expectations

12% - My family has enough income

*It was a multiple choice type question (respondents were allowed to check up to three statements). N (Married) = 71, N (Single) = 716.

Mismatch between labor market demand and higher education system supply.

The above concerns regarding a misalignment between requirements of employers and skills of the graduates are true and factual, especially for non-STE students. The mismatch between the demand and supply of labor has already been reported by a task force commissioned by the Abu Dhabi government (see Figure 3).
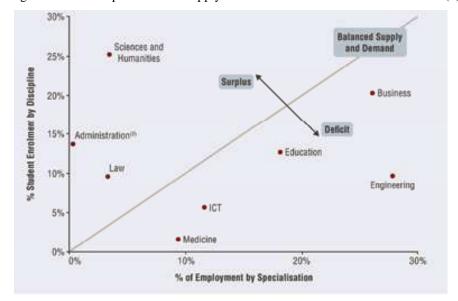
Figure 3: Higher Education Specialization Supply vs. Labor Market Demand in Abu Dhabi (1) (2005).

(1) A similar exercise was conducted for the UAE and comparable results were reported.
(2) Administration includes among others public administration and affairs, translation, general secretariat, etc.
Source: The Government of Abu Dhabi 2008 (Abu Dhabi Census 1995 and 2005; Abu Dhabi Statistical Yearbook 2005; UAE University Annual Report 2005-2006; Abu Dhabi Economic Vision 2030 Team Analysis).

Yet, it is surprising that 19% of STE students who plan to pursue education at graduate level cite a mismatch between their knowledge and existing job requirements as preventing them from planning to work after graduation. This is even more surprising when we conduct an analysis of jobs available on the UAE market (based on the Bayt website). As can be seen in Figure 4, engineering, and to a lesser extent technology-related jobs appear to be in demand in the UAE.
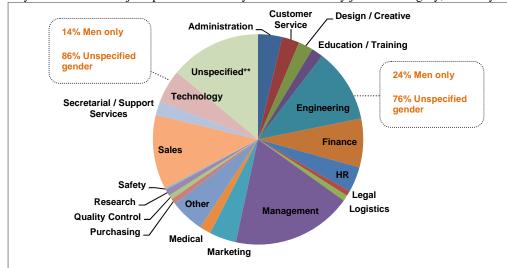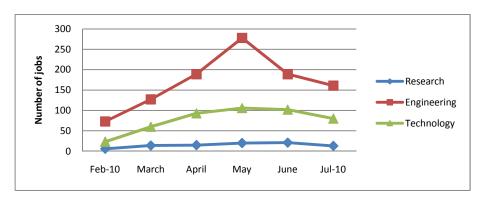
Figure 4: Analysis of UAE based jobs posted on the Bayt.com website - by job role category, February – July 2010.

Source: The diagram was compiled based on statistics published on www.Bayt.com[14].

More detailed analysis of the data offers some explanations for the perceived mismatch: (a) the majority of UAE-based STE (as well as non-STE) jobs published on internet are in Dubai and Abu Dhabi[15], (b) the majority of advertised jobs are at the mid-career and management level and (c) the number of jobs available in the research (science) field is much lower than those in engineering and technology (see Figure 5).

Figure 5: Analysis of UAE based STE jobs posted on the Bayt.com website - by selected job role category, February – July 2010.

Source: based on statistics published on www.Bayt.com .

Unequal spread of STE jobs in the UAE can prevents some students from finding a job. As implied by the statistics, the majority of graduates from outside Dubai and Abu Dhabi will need to look for a job outside their home town. Yet, some may not pursue this option due to cultural as well as logistical problems. Results from our survey show that 14% of STE students with residence in the Northern Emirates who plan to pursue education at graduate level, cite problems with transportation as a reason for not planning to look for a job after they graduate. Moreover, 38% of all STE students (42% of students with residence in the Northern Emirates) indicate that access to socially acceptable transportation is a very important job characteristic to them.

Scarcity of entry level jobs is an additional challenge[16]. This suggests that a closer collaboration between the education authorities and the private (and public) sector is needed, in order to better align the skills of the graduates with the demand on the labor market.

Lack of awareness of what scientists, technologists and/or engineers do.

Interestingly, 65% of Emirati STE students and 80% of non-Emirati STE students know someone who graduated from the STE field. Still, only half of the students who are enrolled in a STE program envisage their ideal career to be in the STE field, and 60% STE students claim that they do not know what an engineer, scientist or technologist does. Moreover, our analysis reveals that those who lack awareness of what a job in STE entails are less likely to view their ideal career in the STE field[17].

Lack of role models.

We also found that female students tend to refer to their families for career guidance, yet their families may not always be able to give them fully informed advice.

Emirati students rely primarily on advice from their extended family, whereas non-Emirati students refer to their immediate family. For those that are married husband's advice is of primary importance. Family, however, may not play in all cases the role of a good advisor (Crabtree 2007). Some of our interviewees informed us that parents of students who attended public primary and secondary schools[18] rarely get involved in communication with teachers and school administrators on their child's progress. If they do, they contact the school as a result of a disciplinary issue or to enquire about their children's grades. There is even less communication between parents and educators at the tertiary education level, suggesting that parents' knowledge of their children's talents and abilities is to a great extend limited. Neither are parents, in many instances, well informed about the job market opportunities and

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[16] Nonetheless, not all entry-level jobs are advertized on the Bayt website which we chose to analyze.

[17] We found that 32% of those who "agree / strongly agree" with the statement *"I am familiar with what a scientist, engineer and / or technologist do"*, 16% of those who are not certain about this statement and 16% of those who "do not agree / strongly disagree", envision their ideal career to be in the STE field.

[18] People whom we interviewed did not have first-hand knowledge of the private education system.

demands. One of the professionals we interviewed referred to this issue by saying that *"there is one important thing with regard to family context in the UAE that we cannot forget about: if you have twenty five uncles working in the police and twenty five uncles working for the army ... and if anybody you know who works in the private sector is a foreigner, then the private sector does not exist for you ... these things improve slowly, too slowly, but they improve"*.

Given the importance of family in the students' career decision making process, we were interested in exploring to what extent female students could be guided towards a career in STE. For that reason, we enquired students about female role models in their families.

Our analysis reveals, that one in three Emirati and one in three non-Emirati students has a female family member who works in the STE field. However, most of these women work in the medical field - 14% of respondents indicated that the female family member works in "medicine" or is a "doctor" whereas less than 10% of respondents have a female family member who works as an engineer or architect, and less than 5% have a female family member who works in IT or is a scientist. In comparison, as many as 42% have a female family member working in education.

Having a female family role model in the STE field appears to make a difference for the Emirati STE students. Emirati students who have a female family member working in the STE field are more likely to be enrolled in a STE university program, as well as to view a job in STE as an ideal career as compared to those who do not have such role model in the family.

Lack of interest in working for sectors other than the public.

Majority of students want to have a job that will be enjoyable, will offer them a pleasant environment and will allow them to make a difference in their society (in the case of Emirati students) or offer them personal and professional development (in the case of non-Emirati students). Yet, Emirati and non-Emirati students demonstrate different preferences in terms of the sector in which they would like to work - almost seven in ten Emirati students as compared to two in ten non-Emirati students would like to work in the public (government) sector (see Figure 6).

Figure 6: Students' work preference by type of employer and nationality.

N (Emirati)=467 , N (non-Emirati)=301.

In spite of the Emiratisation efforts, participation of Emiratis in the private sector is very low – it is estimated that Emiratis constitute around 1% of the workforce in the private sector (Hafez 2009; Al Kibisi et al. 2007). This means that if for any reason immigration to the UAE decreases, the continuity of the private sector could be threatened. It could also suggest that the innovation capabilities of Emiratis are constrained.

Increasing the share of Emirati employees in the private sector is a challenging undertaking. The misalignment between skills, knowledge, attitudes and experience sought after by employers and those demonstrated by graduates is one issue. In addition, Emirati students favour the public sector for such reasons as higher salaries and higher non-monetary benefits, longer holidays, shorter working hours, higher prestige of jobs in this sector (Nelson 2004)[19]. Also parents of Emirati students' strongly prefer that their children work in the "an appropriate" environment that conforms with the local culture[20], rather than in the private sector. Given that parents are girls' main career advisors, it is probable that they encourage them to pursue careers in the public sector.

The situation is further complicated by signals sent by the UAE government to the Emirati graduates - by offering them generous remuneration and work in an environment that is culturally acceptable to the Emirati society, the government encouraged youth, and that includes women, to enter the public sector. On the other hand, by offering compensation packages that are not linked to performance, and which are higher than those offered in other sectors,

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[19]In general, private sector is perceived as the last resort pursued by those who cannot use *wasta* (connections) to enter the public sector (Al Hasimi 2002).

[20] The appropriateness is often associated with a segregated environment or/and an environment where Emiratis constitute the majority of employees. We find that more than half of respondents believe that it matters to their families where they will work and what type of work they will have. A similar share of Emirati (48%) and non-Emirati (49%) students believe that their parents wish for them an *"Office job / Not field work / little interaction with men"*. Additional 13% of Emirati students believe that their parents wish that they have a career in *"Education / Teaching"*.

the government actively discourages Emirati graduates from seeking opportunities outside public sector[21] and also contributes to building unsound salary expectations among them.

Furthermore, high salary expectations of Emirati graduates, difficulties associated with dismissing underperforming Emiratis (Hafez 2009) and negative perception of some Emirati as well as expatriate employers of the national workforce's work ethic (World Economic Forum 2007; Al-Waqfi and Forstenlechner 2010) often deter profit-driven organizations from employing Emirati graduates.

For those reasons, increasing employment of Emirati students in the private sector without breaking the "social-contract"[22] would be a tremendous challenge and a sensitive issue.

Concluding remarks

Several reports have already signalled that the current condition of education and women's empowerment in the Arab world are major obstacles to human development in this region (UNDP 2002; UNDP 2003). Also the need to promote the knowledge society in the MENA region has already been advocated (World Bank 2007; Lord 2008). Authors of these reports have also initiated a discussion on ways for building a knowledge society in the region. These reports, however, deal with the entire region as the primary unit of analysis. However, the MENA region is not homogeneous, as major social, economic and cultural differences exist between these countries (World Bank 2004). Hence, in order to put forward specific and tailored recommendations on how to build a knowledge-based economy and society in the UAE, and in other countries in the MENA region, we see a need for more in-depth, national-level studies.

For that reason we have explored the factors that drive or prevent women in the UAE to study and pursue a career in STE related fields. We conducted a survey among Emirati and non-Emirati university women students at the undergraduate and graduate level, in both private and public universities across the UAE. We also conducted 16 qualitative interviews with successful Emirati female engineers, academics working on Emiratisation, university administrators, representatives of NGOs and educational policy makers.

Our findings confirm the existence of a misalignment between labor market demand and the specialization of university students, demonstrated by the oversupply of graduates in sciences and humanities and a deficit of graduates in STE. We also underline the negative impact of reward policies in the public sector on the attitudes of

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[21] As one of our interviewees said: *"If you are a female national with a degree of engineering, you have so many opportunities [in the semi-private or government sector] better than the private company. It's like a significant difference in the salary"*.

[22] *"The social contract refers generally to an agreement between the members of a society—or between the governed and the government—defining and limiting the rights and duties of each. ... They define the boundaries of acceptable policy choice, and they affect the organization of interests in society by helping to determine who wins and who loses in a given political economy. Furthermore, they influence the institutional forms that become accepted as legitimate mechanisms for organized interest representation—as well as the strategies for state and social actors to resolve conflicts"* (World Bank 2004). See also Forstenlechner and Rutledge (2010).

Emirati graduates towards pursuing careers in the private sector. Such policies also discourage profit driven employers from hiring Emirati graduates.

In addition we report on post graduation plans of the students, showing that majority of the students plan to work after graduation (52%), or aim to continue education at graduate level (31%). On the one hand, these results are encouraging as they suggest ambition for personal and professional development among female students in the UAE. On the other hand, further analysis reveals less optimistic findings. For example:

(a) Most women in our sample refer to family for career advice, while the family may be not in position to provide a well-informed advice with respect to career opportunities that are available and match skills and talents of the student;

(b) We find, among both the STE and non-STE students, an alarming lack of awareness of what a scientists, technologists and/or engineers do;

(c) There appears to be a lack of female STE role models, despite them being important for stimulating interest in this field among other women;

(d) Job availability vary across regions and some students have limited mobility (due to transportation or cultural issues) to commute to the emirates where most jobs are located (i.e. Dubai and Abu Dhabi);

(e) Cultural factors, which emphasize the role of women as family caretakers and lack of family-friendly policies, prevent some married women from looking for work outside their homes.

In light of these findings we argue that it will not be possible to build a knowledge-based economy and a knowledge society without first developing talented citizens in the UAE and ensuring that their knowledge and skills are utilized. In addition, there is a great potential for the government, universities and industry to collaborate on addressing these issues. However, we also come to the conclusion these three actors need to take the cultural context into consideration because policies that have worked outside the UAE may not fit well with the local environment. Therefore, understanding the baseline (the quality of local education system, the values and believes shared by people in the UAE, attitudes toward STE among students in the UAE and their families) should precede the development of strategies and policies for making the economic transformation happen. Future research should also examine in greater detail the quality of science education in the UAE high schools, other cultural norms hypothesized to pose challenges for the transition process (i.e. risk aversion, and preference for short-term investment over long-term investment); and the success of emiratisation policies and ways for overcoming labor market segmentation without breaking the "social contract".

Implications

In this section we put forward recommendation for a closer collaboration between the UAE government (both the federal as well as each emirate's authorities), universities, society, and the industry to support greater participation of women in the STE field in the UAE.

First, a more effective collaboration and communication between these actors is needed in order to inform the government and universities, and consequently prospective students about the labor market demands. Next, this partnership should focus on targeting students and explaining them what career options are available in the STE field and what a job in this field entails[23]. In addition, this collaboration should entail an early familiarization of the students with the work expectations and benefits offered in the private sector. It would give the industry greater access and exposure to the local talent and will also help companies to meet government employment quotas by attracting and identifying high caliber students.

In addition, in order to change the perception of the private sector from "employer of the last resort" to "employer of choice", both the government and the private sector should convey to the Emirati population that building the nation (a goal that is so important for the local population), can also be achieved by pursuing careers outside of the public sector.

The government should openly admit that employment in public sector is reaching the "saturation point", and should work with the industry on finding effective ways to "steer" Emirati youths towards the private sector. Otherwise, the majority of Emirati students will continue to search for the culturally "appropriate", well paid government jobs, which may soon become very scarce.

Finally, the social and cultural context in which Muslim women make their decision regarding education and career needs also to be taken into consideration. Some of the issues that define this context are: the central position of family in the UAE (Arab) culture; the beliefs that women's main priority should be the family; and the expectations that women should not work in a mixed gender environment. For that reason, it would be a good practice for universities, employers and professional organizations that facilitate development of and networking between STE students and professionals, to demonstrate a flexible approach while attracting female STE students to participate in such events. This flexibility can be demonstrated for instance by accommodating local families' hesitance for girls to work outside the "culturally acceptable" environments (such as the private sector or gender-mixed environment) thorough inviting families to accompany a student at a conference, networking event, career day, and by presenting the achievements of women in the STE field to the extended family of STE graduates. By using this collaborative approach, organizations may not only increase STE graduates' awareness of career's options available to them, but

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[23] Additional findings from our research, not discussed in this paper, indicate that opportunities to explore fields in science, technology and engineering should be initiated as early as the primary school in order to raise the interest of female students in these fields, attract them to enter the science stream in high school, and then pursue education in STE at tertiary level.

also increase acceptance of the local society for greater participation of women in the private sector, and the STE field in particular.

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