The Transition from Secondary School to Work: an Empirical Investigation for St.Vincent

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Abstract

This paper analyses the transition from secondary school to work in St. Vincent, using data from a purposely collected survey which was fielded in early 2006. The sample consisted of 400 randomly chosen secondary school graduates from the 2002 cohort. This paper documents transition to the labor market (Post secondary occupation, job search strategies, sectors of employment), skills (IT skills, awareness of skills needed, communication with employers about skills), on-the-job training practices, and the correlation between CXC qualifications and labor market outcomes.

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1 Introduction

Human resource development plays a critical role in the process of growth and development. Growth hinges on the good match between the human resource needs of growing firms and the human capital investments of the labor force. A 2004 World Bank survey among the 159 international companies that operate in the Caribbean, identified labor as the second most important aspect of the investment climate in the Caribbean, after infrastructure. Mismatches between the skills that are offered and those that are demanded will result in inefficiency, lack of firm competitiveness, and unemployment.

From a policy point of view, it is useful to distinguish two sources of mismatches between the skills offered by job seekers and those demanded by employers. The first mismatch occurs when shifts in the economic environment render the skills of sections of the population obsolete, even though the skills that they acquired in the education sector may have been relevant in their time. It is well documented that the Caribbean has experienced a profound shift from agriculture and manufacturing towards services, which has driven up unemployment among former agriculture and manufacturing workers. Clearly, banana industry workers were negatively affected by the decline in the importance of the banana industry in Dominica and St. Lucia, as their skills were quite different from the ones needed in the upcoming tourism, commerce, financial and construction sectors.

The second mismatch occurs when the production of skills by the education sector is not well aligned with the current needs of employers, given the economic environment. This type of mismatch concerns especially young people at the point of transition between the education system and the labor market. While a number of papers have argued that the education sector in the Caribbean is not well-aligned with the needs of firms, there is little analysis of this phenomemon beyond the anecdotal. This paper uses data from a survey to analyze the transition of young people between secondary education and the labor market. The survey is representative of the population of secondary school leavers in Saint-Vincent.

This paper attempts to answer the following questions:

- What are the typical paths of transition between secondary school and the labor market?
  - What is the skills mix among recent graduates from secondary school?
  - What is the correlation between the education of graduates and their training (in particular their outcomes on the CSEC exam) and labor market outcomes?

2 Survey information

2.1 Sampling

The survey was fielded in January and February of 2006, approximately 45 months after the interviewees participated in Caribbean Secondary (CSEC) exam, a regional end-of-secondary school exam. The exam takes place in the 16 participating territories of the Caribbean, and in two external territories, the Netherland Antilles and Suriname. Table 1 shows that in 2002, 122,621 candidates took part in the exam, of which 2,041 were Vincentians. Only about one thirds of the candidates were men. This gender inequality in participation in the exam is common across all territories that participate in the exam, though Saint-Vincent and the Grenadines is the second most unequal territory. The exam offers tests in 16 Proficiencies at the Basic level [1] and in 34 Proficiencies at the General/Technical level.[2]

Table 1: CSSEC Candidate Entries

Territory	Male		Female		Total
	No.	%	No.	%	No.
St Vincent and the Grenadines	675	33.07	1,366	66.93	2,041
All Caribbean	46,031	37.54	76,590	62.46	122,621

All eighteen secondary schools on Saint-Vincent were selected to be in the sample for the survey. The three secondary schools in the Grenadines were not included, because of practical difficulties with administering surveys in the Grenadine islands. The size of the sample for each secondary school was proportionate to the number of students from that school who actually wrote the CSEC exams in 2002.

2.2 Response rates

Table 2 summarizes the response rates to the survey. Of the sample of 400 graduates, 329 or 84.75 percent were found in person. Only 9 respondents (2.25 percent) could not be located. The remaining 52 respondents (13 percent) were not present on Saint-Vincent at the time of the

[1] Carribean History, Electrical and Electronic Technology, English A, Food & Nutrition, French, Geography, Integrated Science, Mathematics, Office Procedures, Principles of Accounts, Principles of Business, Social Studies, Spanish, Technical Drawing, Typewriting

[2] Crops & Soils, Animal Science, Agricultural Science, Biology, Building Technology (Construction), Building Technology (Woods), Caribbean History, Chemistry, Clothing & Textiles, Electrical and Electronic Technology, English A, English B, Food & Nutrition, French, Geography, Home Economics: Managment, Information Technology (General), Information Technology (Technical), Integrated Science, Mathematics, Mechanical Engineering Technology, Metals, Office Procedures, Physics, Principles of Acounts, Principles of Business, Religious Education, Shorthand, Social Studies, Spanish, Technical Drawing, Typewriting, Visual Arts, Woods.

interviews. Field procedures allowed the interviewers to interview a proxy in those cases. The proxy interview included the same basic questions as the regular interview, but questions on on-the-job training, technical and service skills, agriculture, and job search experience were left out because it was anticipated that proxy responses would not be accurate for this type of question. Of the 52 proxy responders, 33 were the mother or father of the graduate, 10 were siblings and 9 were other relatives.

Table 2: Response Rates

Type of response	Frequency	Percent
Sampled Graduate interviewed	329	84.75
Proxy interview	52	13
No response - not found	9	2.25
No response - refused	0	0
Total observations	400	100

3 Descriptive statistics

3.1 Background information on respondents

Year of birth Table 3 reports the year of birth of the graduates. Most graduates were born in 1984 or 1985, which means they would have been between 16 and 18 at the time they took the CSEC exam. Most graduates were 21 or 22 at the time of the interview.

Table 3: Year of Birth of Graduates

Year of Birth of Graduate	Frequency	Percentage
1981	1	0.26
1982	20	5.12
1983	61	15.6
1984	132	33.76
1985	133	34.02
1986	43	11
1987	1	0.26
Total observations	391	100

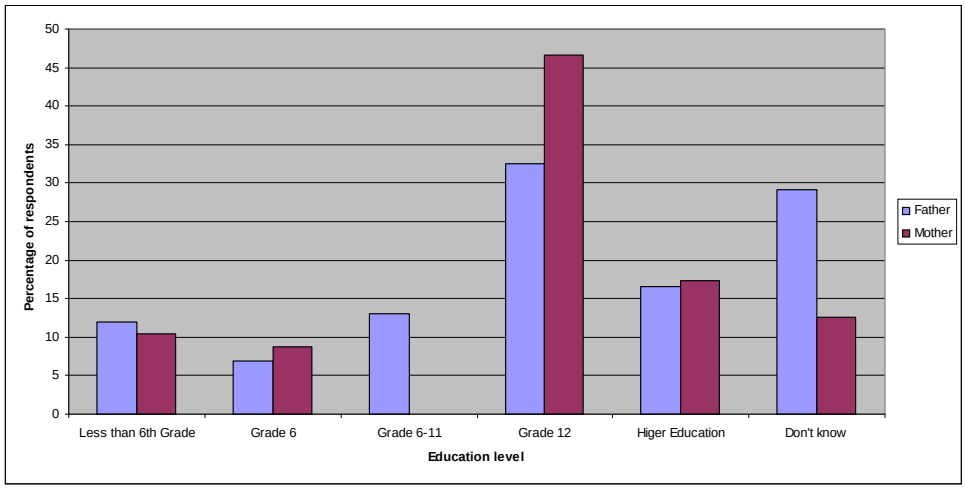
Family status of the graduates Table 4 summarizes the family status of the graduates. Most of the graduates were living without a partner at the time of the survey. Of the graduates, 53 had one child, 5 had 2 children, and 333 had no children.

Table 4: Family Status

Family Status	Frequency	Percentage
Living without a partner	368	94.14
Married	4	1.02
Living with a partner	19	4.86
Widowed, divorced, separated	0	0
Other	0	0
Total observations	391	100

Parental education Figure 1 illustrates the educational attainment of the parents of the graduate. The question was directed to the educational level of the male/female guardian in case the biological parent did not live in the same household as the graduate. It is unclear whether the many "Don't know" responses stem from the fact that the graduates did not know the educational level of their father, or whether they grew up in a family without father or male guardian.

Figure 1: Parental Education Level



Knowledge of foreign languages (Table 5) Of the graduates, 22 percent spoke a language other than English at the time of the survey, with a self-reported level "sufficient to be able to use the language at work".

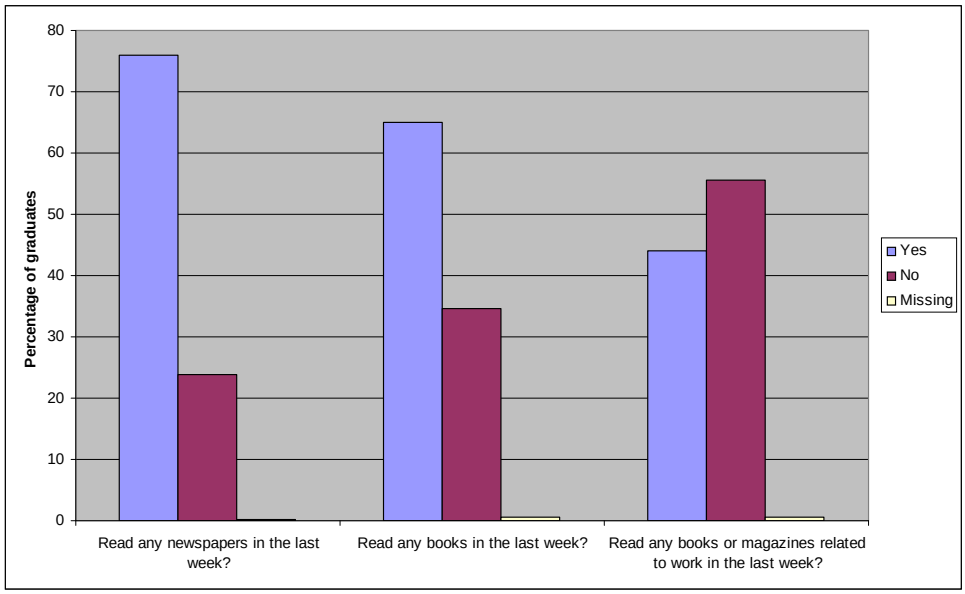
Newspaper, book and magazine reading in daily life (Figure 2) Eighty percent of graduates reported having read a newspaper in the last week, while 68 percent reported having read a book in the last week. Fourty-eight percent of graduates reported having read at least one book

Table 5: Knowledge of Foreign Languages

Foreign languages spoken	Frequency	Percent
None	305	78.01
Spanish	46	11.76
French	23	5.88
French and Spanish	16	4.09
French and Other	1	0.26
Total	391	100

or magazine related to their profession or work in the last week. These numbers were calculated excluding the proxy interviews.

Figure 2: Newspaper, book and magazine reading



3.2 Profile of jobs held by young graduates

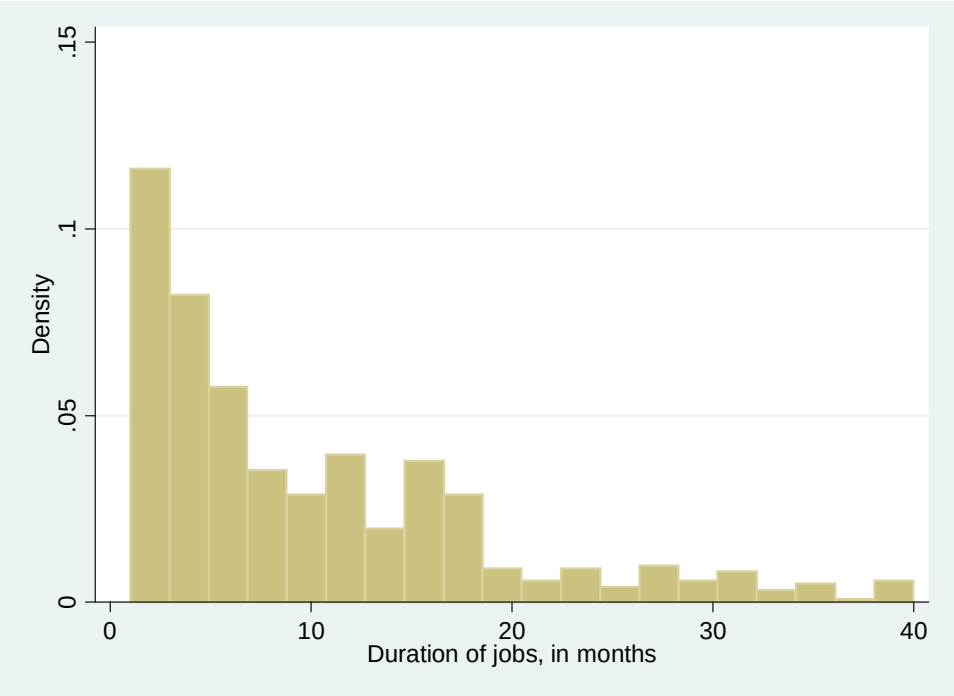
3.2.1 Participation in the labor market

Between graduation in June 2002 and January 2006, 358 (91.56 percent) of the graduates had worked in at least one job (including self-employed jobs), while the other 33 graduates (8.44 percent) did not work in any job in that time period.

3.2.2 Job duration (Figure 3)

Figure 3 reports a histogram of the duration of jobs of the graduates between August 2002 and December 2005. The figure includes all jobs (current or past) held by graduates, where an activity with a different employer and/or function is defined as a different job. The mean job duration is 9.78 months, while the median duration is 7 months. Job duration is truncated at the time of the interview.

Figure 3: Job Duration of Jobs held by Graduates



3.2.3 Wages (Figure 4)

The mean monthly wage was 914 CXD (approximately USD 350), while the median was 845 CXD. These calculations weight each job according to its duration in months.

3.2.4 Hours worked (Figure 5)

The average number of hours worked per week among graduates who work is 40.3 hours, while the median is 40 hours. Figure 5 shows the distribution of hours worked per week, where each job was weighted by its duration in months.

Figure 4: Monthly wages in CXD

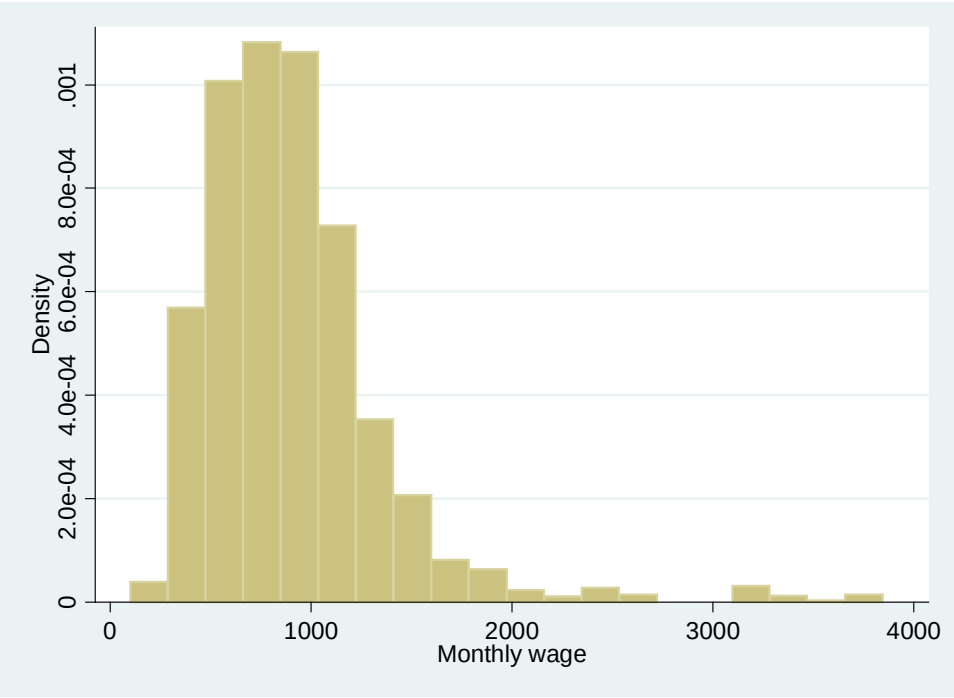
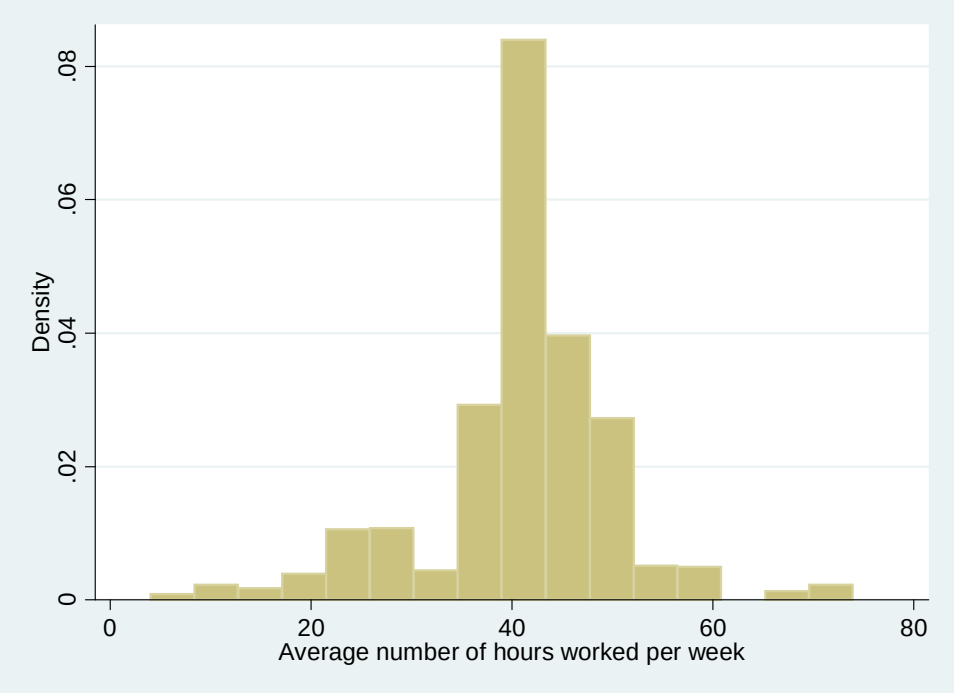


Figure 5: Average number of hours worked per week



3.2.5 Sector of employment (ISIC Classification) (Figure 6)

Table 6 gives the breakdown of employment of the graduates according to sectors. The sectors were categorized using the International Standard Industry Codes, Version 3.1, which was elaborated by the International Labor Organization. The coding of the sectors using this classification was done by the enumerators in the field. The unit of observation in Table 6 is a work-month, which excludes all months in which a graduate was seeking a job, studying etc. while not working on any job. There were approximately 6,012 actual work months in total. The public sector is by far the most important sector for employment of the graduates, followed by wholesale and retail trade, and real estate and renting.

Table 6: ISIC Sectors

ISIC Sector	Work-months	Percent
Public administration and defense; compulsory social security	1,428	23.75
Wholesale and retail trade, repairs of motor vehicles, motorcycles and personal and household goods	924	15.37
Real estate, renting and business activities	716	11.91
Education	590	9.81
Health and social work	436	7.25
Transport, storage and communications	436	7.25
Activities of private households as employers and undifferentiated production activities	368	6.12
Financial intermediation	318	5.29
Construction	257	4.27
Agriculture, hunting and forestry	227	3.78
Hotels and restaurants	215	3.58
Manufacturing	76	1.26
Electricity, gas and water	21	0.35
Fishing	0	0
Mining and quarrying	0	0
Extraterritorial organizations and bodies	0	0
Total	6,012	100

3.2.6 Occupation code (ISCO Classification) (Table 7)

Table 7 gives the breakdown of employment of the graduates according to their occupation in each job. The occupations were categorized using the International Standard Classification of Occupations (1998), also published by the International Labor Organization. The coding of the sectors using this classification was also done by the enumerators in the field. Office clerks are the

largest single occupation among the graduates. In total, the various categories of Clerks (41, 42, 51, 52) make up for 63 percent of all employment months. Again, agriculture and fishery play a near-nonexistent role. Strikingly, there is no employment in Market-Oriented Skilled Agricultural and Fishery Workers or in Precision, Handicraft, Printing and Related Trades Workers.

Table 7: ISCO Occupations

ISCO Occupation	Frequency	Percent
11-Legislators and Senior Officials	0	0.00
12-Corporate Managers	2	0.32
13-General Managers	5	0.8
21-Physical, Mathematical and Engineering Science	1	0.16
22-Life Science and Health Professionals	4	0.64
23-Teaching Professionals	32	5.13
24-Other Professionals	2	0.32
31-Physical and Engineering Science Technicians	16	2.56
32-Life Science and Health Associate Professionals	20	3.21
33-Teaching Associate Professionals	33	5.29
34-Other Associate Professionals	18	2.88
41-Office Clerks	207	33.17
42-Customer Services Clerks	68	10.9
51-Personal and Protective Services Clerks	60	9.62
52-Models, Salespersons and Demonstrators	58	9.29
61-Market-Oriented Skilled Agricultural and Fishery Workers	0	0.00
62-Subsistence Agricultural and Fishery Workers	3	0.48
71-Extraction and Building Trades Workers	19	3.04
72-Metal, Machinery and Related Trades Workers	10	1.6
73-Precision, Handicraft, Printing and Related Trades Workers	0	0.00
74-Other Craft and Related Trades Workers	5	0.8
81-Stationary Plant and Related Operators	0	0.00
82-Machine Operators and Assemblers	4	0.64
83-Drivers and Mobile-Plant Operators	3	0.48
91-Sales and Services Elementary Occupations	24	3.85
92-Agricultural, Fishery and Related Labourers	2	0.32
93-Labourers in Mining, Construction, Manufacturing and Transport	28	4.49
01-Armed Forces	0	0.00
Total	624	100

3.3 Job seeking

Current job search (Table 8) Of the in-person respondents, 13.86 percent were not employed and looking for a job in December 2005, while 9.14 percent were employed and looking for a job.

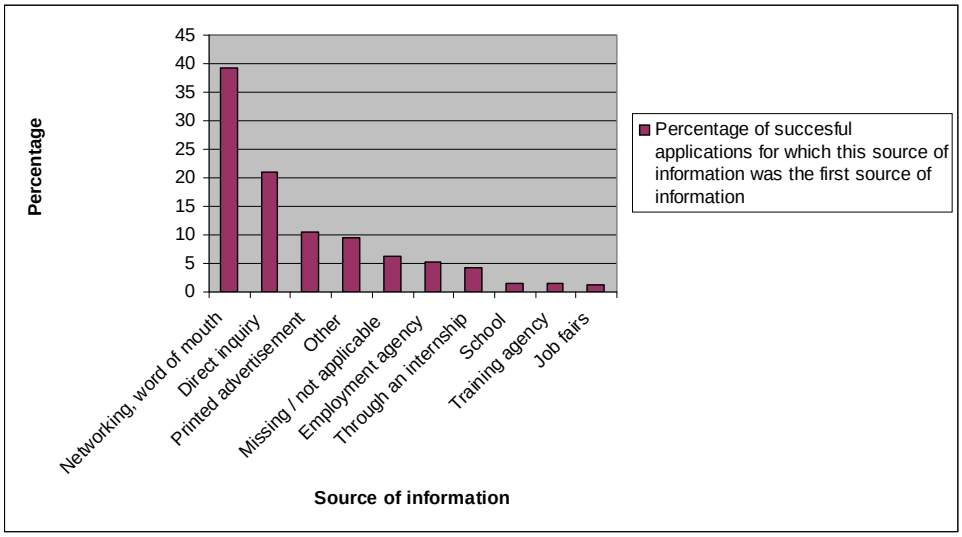
Approximaltely 4 percent of the respondents were not employed and not looking for a job, and 72.86 percent were employed and looking for a job.

Table 8: Current Job Search

Situation as of December 2005	Not Employed	Employed	Total
Looking for a job	47 (13.86%)	29 (9.14%)	78
Not looking for a job	14 (4.13 %)	249 (72.86 %)	261
Total	51	278	339

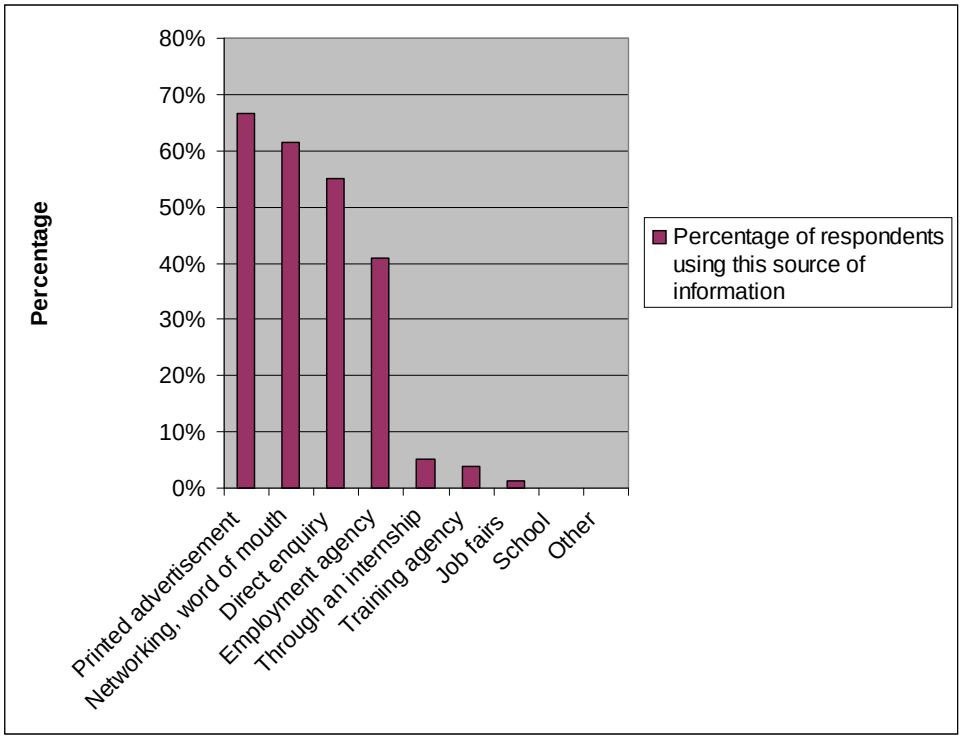
Source of vacancy information, succesful job applications (Figure 6) Respondents were asked how they first heard about the vacancy for the last job they obtained. The most important means of becoming aware of a vacancy are, in that order, networking and word of mouth, direct inquiry, and printed advertisement. Employment agencies and internships represent approximately 5 percent of succesful job fillings, while schools, training agencies and job fairs play only a negligible role.

Figure 6: Source of Vacancy Information for the Last Succesful Job Application



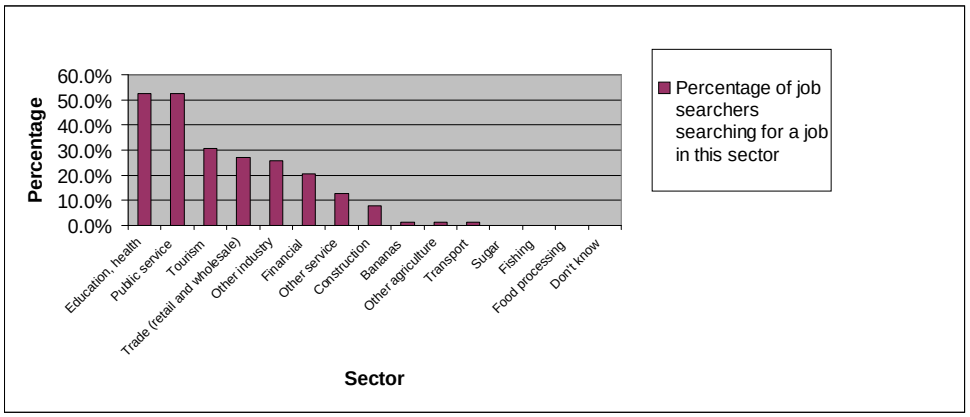
Source of vacancy information, job seekers (Figure 7) The sources of vacancy information used by job seekers generally mirror the success of the methods employed (Section 3.3). Very few graduates search for job through internships, training agencies, job fairs, or schools.

Figure 7: Sources of Information Used by Job Seekers (N=78)



Job search sectors (Figure 8) Education, health and public service are the most popular job search sectors among job seekers (N=78). The service industry (tourism, trade, financial and other services) also attract significant percentages of job seekers. Agriculture and food industry are of negligible interest to job seekers.

Figure 8: Importance of Sectors for Job Search



3.4 Skills

3.4.1 IT skills (Table 9)

The graduates were asked for their level of familiarity with computers using the questions reported in Table 9. While over eightly percent of respondent claimed to be familiar with how to use computer programs like Word and Excel, only roughly half of them answered correctly when asked for the file extension of a Word document. This suggests that respondents overestimated their computer skills. In addition, it suggests a rather low mastering of basic computing skills in the population of young secondary school graduates.

Table 9: IT Knowledge

Question: Do you...	Yes	No	DK	NrObs
... feel familiar with the basic use of a computer?	92.92	7.08	0	339
... know how to send and receive email without assistance?	85.84	14.16	0	339
...know how to save and retrieve a file from a computer?	87.91	12.09	0	339
...feel familiar with how to use computer programs like Word and Excel?	81.81	18.29	0	339
...feel familiar with how to use other advanced computer programs?	43.95	55.46	0.59	339
Can you tell me what is the file extension for a Word document? (a)	30.09	–	69.91	339

(a) Respondents who gave the right answer (.doc) are tabulated as "yes", others are tabulated as "don't know"

3.4.2 Self-reported lack of skills among Saint-Vincent graduates (Figure 9)

Graduates were asked which skill they thought there were missing to find a better job. The most reported missing skill was computer skills. Foreign languages were not cited by any respondents. Strikingly, there is no single other major skill that comes up as very important. Lack of soft skills comes up less than accounting skills, and as such it seems that it does not rank high in awareness among the graduates. Strikingly, 17 percent of respondents mention that they don't lack any skills, while 8 percent of them don't know which skills they lack.

3.4.3 Interaction with employer about skills (Figure 10)

Among the graduate that were employed in December 2005, only 35.6 percent reported having talked to an employer (current, former or prospective employer) about their skills. Due to the setup of the survey, it is unclear whether the missing values are real missing values, or whether they indicate that graduates never talked to their employer about skills. Given the very now number of missing values in other questions, it is likely that most of the missing values for

this question indicate that the graduate didn't talk to his/her employer about skills. (Figure 10) Among the 139 graduates who did talk to an employer about their skills, only 21 reported that the employer mentioned a particular skill that they were lacking or needed to update.Strikingly, 5 out of these 21 interactions with employers were about soft skills: tolerance, professional appearance, communication skills, efficiency, and responsibility. All of these interactions about soft skills were with actual employers, rather than with prospective employers.

4 Analysis

4.1 Transition paths (Table 10)

Approximately 40 percent (N=161) of graduates went straight from secondary school to the labor market. A small portion (N=9) of those returned to school (A levels, O levels, police training, technical college or tertiary) after some time in the labor market.

Table 10: Transition Paths from Secondary to the Labor Market

Postsecondary occupation	Frequency	Percentage
Labor market, no further training	152	38.97
A level College	137	35.04
Technical College	58	14.83
School of Nursing	10	2.56
Tertiary	9	2.30
Labor market, and delayed further training	9	2.30
Police Training	7	1.79
O level	5	1.28
Short Vocational, then labor market	4	1.02
Total	391	100

4.2 Correlational analysis (Tables 11 and 12)

For the graduates who proceeded straight to the labor market, I analyse the relation between graduates' performance on the CSEC exam and the number of months till they found a first job, the percentage of time they spent looking for a job (calculated as the total number of months spent searching, divided by the number of months since graduation), and their average wage in the jobs they found. The average of those variables among this group are reported in Table 11. Graduates who transitioned directly to the labor market face a tough time integrating themselves: on average, 14 months passed till they found their first job. In additioin, they were searching for a job in over 40 percent of the time. The average wage was approximately USD 315 per month.

Table 11: Summary of Labor Market Outcomes for Graduates who Transitioned Directly to the Labor Market

Variable	Observations	Mean	Standard deviation
Number of months till first job	152	14.04	13.36
Percentage of time spent searching of a job	151	41.34	34.06
Average wage in jobs found	134	810	391

Table 12 presents regression results that correlate the graduates' performance on the CSEC exam with those labor market outcomes. The number of CSEC passes does not seem to affect either the number of months till the graduate found a first job, the percentage of time spent on looking for a job, or the average wage in jobs obtained. Specific scores on Math and English have no correlation with job market outcomes, with one notable exception: A higher Match score is significantly associated with a higher wage, at a rate of approximately 80 per point on the CSEC.

Table 12: Correlation between CSEC results and labor market outcomes

Variable	Nr of months till first job	% of time spent job searching	Average wage
Number of CSEC passes	0.02 (0.64)	0.00 (0.02)	-3.56 (33.02)
CSEC Math score	1.03 (1.00)	0.02 (0.03)	-79.46 (36.43)**
CSEC English score	-1.17 (0.72)	-0.02 (0.02)	-22.35 (18.82)
Female	1.02 (2.90)	0.02 (0.05)	-67.59 (92.79)
Age at CSEC	-2.84 (1.43)*	-0.06 (0.03)**	-8.02 (26.68)
Mother's education	0.15 (0.23)	0.00 (0.01)	3.36 (6.00)
Constant	65.42 (26.99)	1.55 (0.57)**	1443.08 (542.39)**
Nr Obs	145	144	127
R-squared	0.09	0.06	0.08

Robust standard errors in parentheses.
* significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent

While it is not possible to extract causal inference about the effect of CSEC exam results on wages or employment, it is striking that there is very little correlation between those numbers. This could signal potential problems, for example in the usefulness of CSEC qualifications in the labor market (ie the skills that are aquired in secondary are not valued monetarily by employers) or in their lack of signalling power of graduates' abilities to employers.

4.3 Which sectors train and which don't

Table 13 presents the distribution of on-the-job training by sector. Financial intermediaries (banks) and insurance companies are most likely to train, followed by post and telecommunications

and air transportation companies. Hotels and restaurants provided very low levels of training (approximately one day per year), while sectors like manufacturing and construction did not provide any training at all to the respondents.

4.4 Internships

There were 60 instances of completed training with internship in the database. In 31 of those cases, the respondent secured employment in the month after the completion of the training. It is not possible to tell from the data whether the trainee stayed at the firm where she did her internship, or whether the trainee moved to another firm.

5 Conclusions

The following conclusions can be drawn from the analysis of the survey data. First, as regards to skills: first, there is little interaction between graduates and employers on skills, despite an evident lack of knowledge on valued skills among graduates. At the same time, graduates seem to over-estimate their own IT skills. Second, levels of on-the-job training are relatively low: 19% of graduates received on-the-job/job-related training at least once, but the average was only 13% among graduates who went straight to the labor market. The third main conclusion is that there is little correlation between levels of achievement on the CSEC exams and labor market outcomes. For graduates who transitioned directly from secondary school to the labor market, only their CSEC mathematics scores are associated with higher earnings, and there is no correlation between CSEC scores and employment. This points to a potential issue with the CSEC exams and/or the secondary education system: if there is little correlation between secondary school leaving performance and labor market outcomes, then it is likely that employers either do not see the CSEC results as reflecting graduates' abilities, or that the skills aquired in secondary are not rewarded/valued in the labor market.

References

[1] International Labor Organization (1998), "International Standard Classification of Occupations", Paris.

[2] International Labor Organization (1998), "International Standard Industry Codes", Version 3.1, Paris.

[3] Wooldridge, Jeffrey M. (2002), "Econometric Analysis of Cross Section and Panel Data," MIT Press, Cambridge, Massachusetts.

[4] Worldbank (2005), "A Time to Choose: Caribbean Development in the 21st century", Washington DC.

[5] Caribbean Examination Council (2002), "Statistical Bulletin 2002: January and May-June CSEC Sittings and May-June CAPE Sitting," Barbados.

Figure 9: Self Reported Lack of Skills among St Vincent Graduates

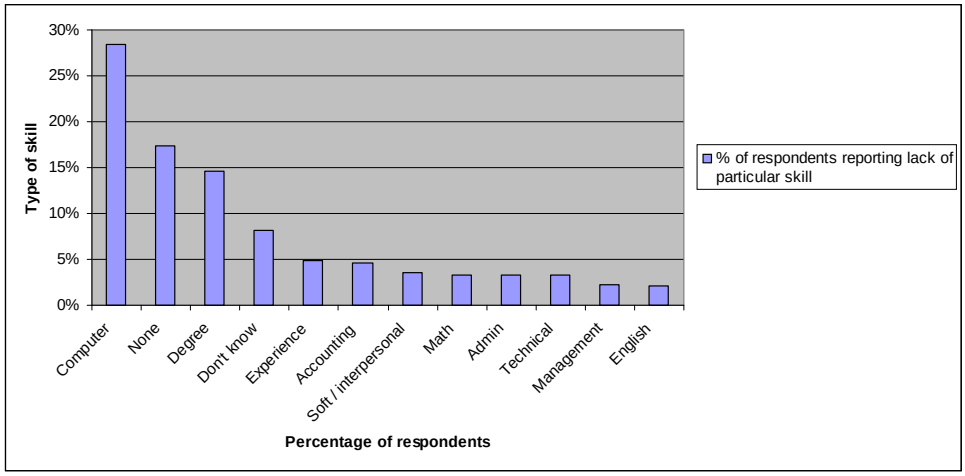


Figure 10: Number of months since the graduate last talked to an employer about his/her skills

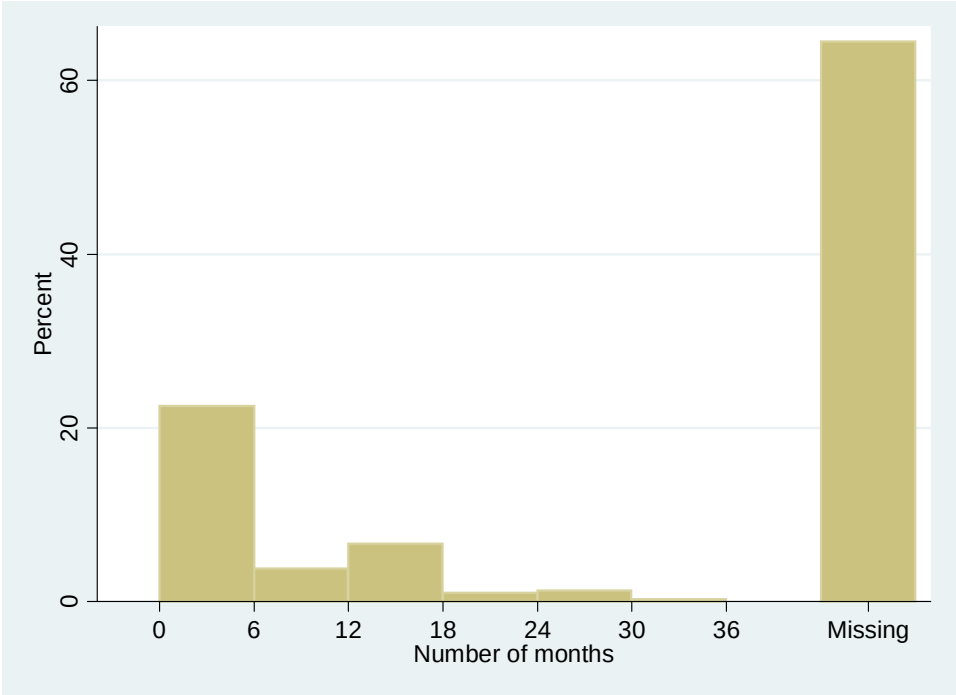


Table 13: Training by sector

Code	Industry	Work months	Hours of training	Job episodes	Ratio
40	Electricity/gas/hot water supply	8	100	2	12.50
66	Insurance and pension funds	97	199	8	2.05
65	Financial intermediation	180	120	21	0.67
62	Air transport	129	78	10	0.60
64	Post and telecom	148	58	19	0.39
92	Recreational, cultural and sporting activities	161	56	15	0.35
80	Education	590	204	68	0.35
74	Other business activities	422	139	39	0.33
72	Computer and related activities	252	72	33	0.29
91	Activities of membership organizations	95	25	14	0.26
51	Whole sale trade	66	16	7	0.24
75	Public administration, defense, compulsory social security	1428	327	123	0.23
93	Other service activities	112	25	10	0.22
55	Hotels and restaurants	215	20	23	0.09
52	Retail trade	758	57	89	0.08
85	Health and social work	436	31	28	0.07
15	Manufacture of food products and beverages	187	0	14	0
26	Manufacture of other non-metallic mineral products	15	0	4	0
27	Manufacture of basic metals	12	0	1	0
28	Manufacture of fabricated metal products	32	0	3	0
29	Manufacture of machinery and equipement	17	0	1	0
36	Manufacture of furniture	17	0	3	0
41	Collection, purification and distribution of water	13	0	5	0
45	Construction	257	0	30	0
50	Sale, maintanance and repair of motor vehicles and motorcycles, retail sale of automotive fuel	100	0	13	0
60	Land transport	56	0	5	0
61	Water transport	21	0	2	0
63	Supporting and auxiliary transport activities, activities of travel agencies	82	0	13	0
67	Activities auxiliary to financial intermediation	41	0	3	0
70	Real estate activities	23	0	3	0
71	Renting of machinery and equipment without operator and of personal and household goods	19	0	2	0
95	Activities of private households as employers of domestic staff	65	0	10	0

Notes: Code is the 2-digit ISIC sector code. Work months, training hours and job episodes refer to the period of time between graduation and the interview. Work months is the total number of months of employement within each sector, by all respondents. Training hours is the sum of all hours of training received by respondents while they were working in the sector. Job episodes is the number of jobs held by respondents in that sector. Ratio is the ratio of training hours to work months.