



# The value of incomplete education – the case of Suriname

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# Versions and reference

- This paper is a generalized version of Chapter 2a in my forthcoming dissertation *Sociale Stratificatie en Intergenerationele Mobiliteit in Suriname*. VU University.
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- Please refer to these slides as: Tamira E Sno & Ganzeboom, Harry BG (2024). “The value of incomplete education – the case of Suriname”. Paramaribo SR / Amsterdam NL: Anton de Kom University of Suriname / VU University Amsterdam.

# Summary & Conclusions (1)

- ISSP has a history of regarding highest completed qualification as the most valid measure of educational attainment.
- This practice disregards the potential value of incomplete education. This creates (random) measurement error and may lead to a downward bias in predictive power of education (in socio-economic attainment).
- In Suriname, highest attended education (whether completed or not) is a better measure of educational status than highest completed education – this may be true in other countries too.
- Incomplete qualifications score on average much below completed qualifications: **-10.8 points SRLED**.
- However, these same incomplete qualifications score on average better than what they would have obtained on their highest completed education: **9.8 points SRLED**.

# Summary & Conclusions (2)

- Taking into account full and partial completion is significantly better than highest completed level.
- The ISCED-2011 3-digit measure (recently adopted by ISSP) is able to capture and repair part of the bias.
- We recommend ISSP to make educational measurement – at the national level – more open to incomplete qualifications.

# History of educational measurement in ISSP

- Since its beginning in 1985, ISSP has attempted to measure educational attainment as follows:
  - A country-specific detailed measure **of highest completed qualification**: XX\_DEGR.
    - A cross-national harmonized measure of highest complete education: DEGREE, now EDLEVEL.
  - **An independent cross-national measure of the total duration of education**: EDUCYRS.
- XX\_DEGR: The country-specific information is rarely used. Using it requires expert knowledge on education systems around the world. Its contents sometimes changes within countries between rounds.
- DEGREE: has had various definitions, as well a measurement scales.
- EDUCYRS: is intended to be a independent measurement of level of education, but there have been multiple occasions that countries breach this ruling, and have recoded duration from highest qualification.

# ISCED-2011

- As of 2020 ISSP adopted ISCED-2011 as its cross-national coding frame for country-specific education (XX\_DEGR).
- ISCED-2011 is a 3-digit coding frame that is broadly organized as follows:
  - Digit 1 measures **level of education** on a 0-8 scale.
  - Digit 2 measures **orientation of education** (at the same level), with as major distinctions: (3) academic (general) orientation (4) professional [vocational] orientation.
  - Digit 3 measures **completion** and access to higher levels:
    - 1 – incomplete
    - 2 – partial completion
    - 3 – complete but no access to higher level
    - 4 – complete and access to higher level.
- NB1: While level of education is primarily measured by the first digit, it is clear that the second and third digit are relevant to measure the true level of education.
- NB2: the ISSP practice of asking for highest completed education is inconsistent with the intention of ISCED-2011 to be sensitive to incomplete education.

# Education in Suriname

- Suriname has a highly ‘stratified’ education system, i.e. there are multiple tracks within the four broad levels of education (primary, lower secondary, higher secondary, tertiary).
- SURMOB distinguishes **16** programmes (‘qualifications’) , which can be complete or incomplete.
  - **Ambiguous: whether ‘No Education’ is to be regarded as complete or incomplete.**
- **Compulsory education only up to 12 years of age (end of primary)**
- **SR is very low educated with lots of respondents not or only attending primary education: 21.3%**
- Around 56% of all respondents did not complete their highest attended level of education.
  - NB: the ‘incompletion’ refers to the highest attended level. This is not the same as dropout at each level.
- Incompletion happens at all levels of the educational hierarchy, including the primary level.

**Table 1: Percent Incomplete by Qualification**

	HIGHEST PROGRAM ATTENDED	N	INCOMPLETE
1	Did not go to school – illiterate / literate	400	100%
2	BO [Special education]	90	86%
3	GLO [6 yr Primary]	1661	64%
4	EBO [Primary + 1 yr Vocational]	148	49%
5	LBGO, ULO [Primary + 4 yr lower level]	1037	58%
6	LTO [Primary + 4 yr Vocational]	435	54%
7	MULO [Primary + 4 yr midlevel]	1147	57%
8	COVAB [MULO + Nurses Training]	61	39%
9	Natin, AMTO [MULO-LTO + 4 yr vocational]	335	59%
10	Pedag.instellingen [MULO + 4 yrs Teacher Training]	454	35%
11	IMEO [MULO + 3 yrs Commercial Training]	328	45%
12	HAVO [Higher Secondary 2 yrs]	254	46%
13	VWO [Higher Secondary 3 yrs]	178	41%
14	HBO [Tertiary Vocational 2-4 yrs]	441	46%
15	Universiteit BSC [Tertiary Academic 3 yrs]	121	63%
16	Universiteit MSC [Tertiary Academic 5 yrs]	225	56%
	<b>TOTAL</b>	<b>7315</b>	<b>56%</b>

SURMOB 2012 2015 2018 2020



# Research questions

- What is the value of an incomplete qualification in Suriname?
  - How does it measure up relative to (A) completing the education and (B) not starting the education?
- Can this value be captured by ISCED-2011 – which accommodates incomplete levels?

# Theory: human capital

- A standard theory about causes and consequences of educational attainment is that of human capital (HC) investment: education represents human resources [skills] that are built up by investment (=forgoing earnings).
- From a HC perspective, incomplete ('partially completed') education is also investment.
- From a HC perspective, the **duration of education** is a theoretically more valid measure of educational attainment than qualification – which is one of the reasons why economists prefer duration.
  - Duration of education represent the amount of benefits (earnings) forgone by being in education. This holds for both the students and society.
- If obtaining a qualification ('credential') makes education more valuable than its duration, this is interpreted in HC as *rent exploitation*.

# Against the HC perspective

- There are of course other reasons why many (economists or not) prefer duration over qualification in analytical work.
  - Duration is a clear-cut ratio-level measure, with a metric that is easily comparable between countries, between points in time, and with aging (experience).
- But there are also many reasons why to prefer qualification measurement over duration:
  - A completed qualification may still represent a HC investment.
  - In fact, failing to complete an education can be seen as a signal of negative HC.

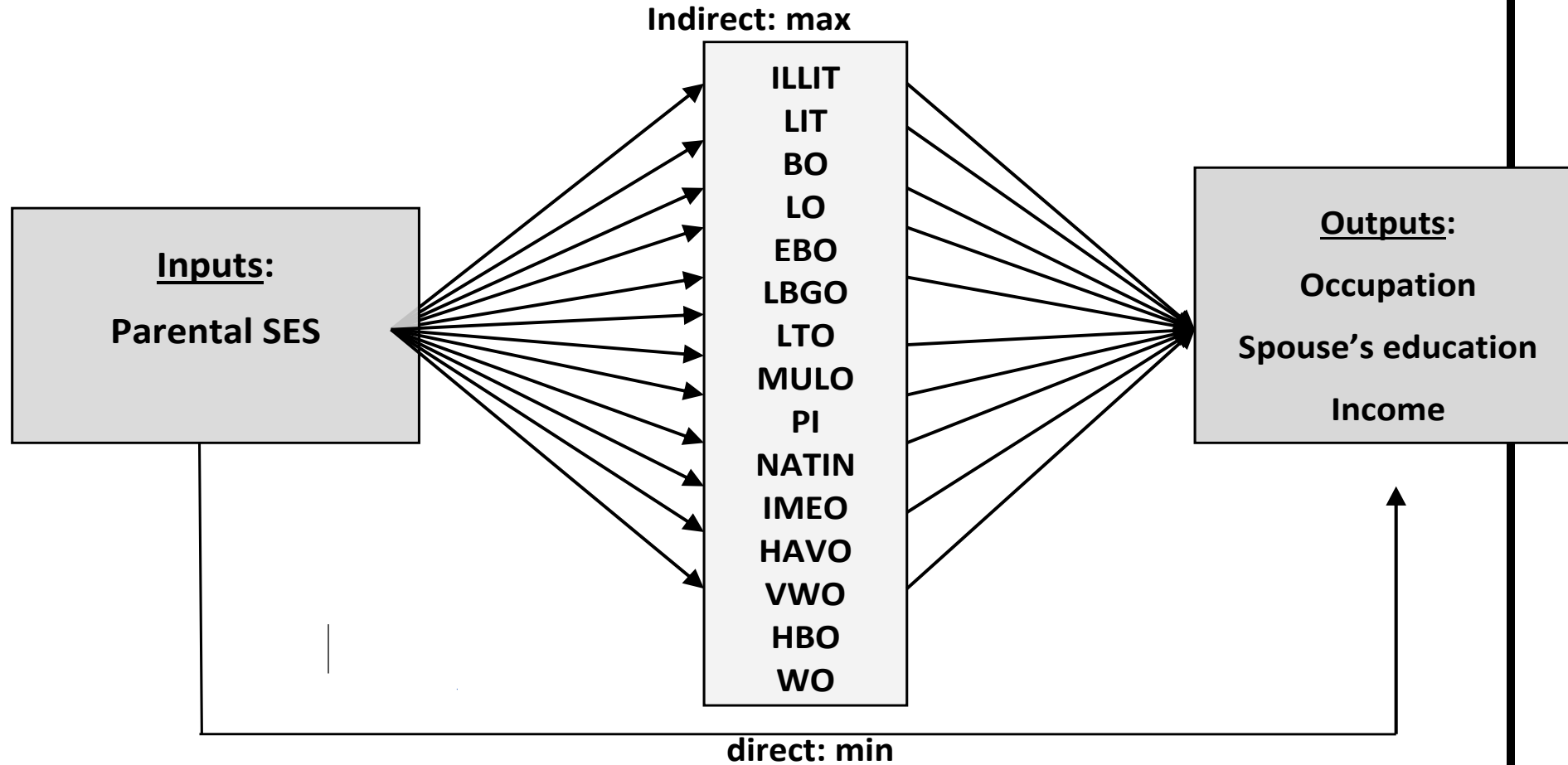
# Data and research design

- Data: Four waves of SURMOB: 2012 (contains Social Inequality IV), 2015 (Work Orientations IV), 2018 (Role of Government V; Social Networks III), and 2020 (and Religion IV; Social Inequality V). **N=7315**
- However, our analysis uses information that is not available in the ISSP standard files, such as: career measurement of education and status of occupation at first entry into the labour market.
- **We compare value of qualification by seven renditions of education in Suriname:**
  - **SR\_DEGRxx (#31): highest attended level of education, differentiated by completion. Incomplete qualifications are measured by half scores.**
  - **SR\_DEGRx (#16): highest attended level of education, whether completed or not. This variable disregards completion.**
  - **SR\_DEGR (#16): highest completed level of education. This is the variable that ISSP wants us to deposit. Notice that this measure cannot be constructed from SR\_DEGRxx.**
  - **SR\_ISCEDxx: highest attended level of education, differentiated by completion. It uses digit3=1 for incomplete equalifications.**
  - **SR\_ISCED: highest completed level of education, coded in ISCED-2011. This is the variable that archive wants us to deposit**
  - **DEGREE (#7): The harmonized ISSP variable, which is a recode of SR\_DEGR.**
  - **EDLEVEL: (#8) the first digit of SR\_ISCED.**

# Research design: optimal scaling

- We develop an **SRLED** (Surinamese Level of Education) using optimal scaling.
- Methodology developed by Schröder & Ganzeboom (2014) to construct ISLED.
- Value of a qualifications derives from two related but not identical processes:
  - **OUTPUTS**: the value of a qualification in the labour market and the marriage market: to what level of jobs, income and spouse's education does a certain qualification lead?
  - **INPUTS**: value of a qualifications to parents: effects of parental socio-economic status?
- Optimal scaling model - qualifications operate as the mediator between social origins and social destinations: optimal = maximizing the indirect effect of inputs on outputs.

## Figure 2: Optimal Scaling Model



After: Schroder (2014).

**Table 5: Surinamese Level of Education [SRLED] for complete and incomplete qualifications**

	SRLED				
	A	B	A-B	C	B-C
	COMPLETE	INCOMPLETE	LOSS vs COMPLETE	NORM	GAIN vs NORM
<b>1 Did not go to school - literate / illiterate</b>	<b>8.4</b>	<b>0.0</b>			
<b>2 BO [Special education]</b>		25.1	<b>0</b>	<b>0</b>	<b>0</b>
<b>3 GLO [6 yr Primary]</b>	<b>18.4</b>	<b>11.8</b>	<b>-6.6</b>	<b>0</b>	<b>11.8</b>
<b>4 EBO [Primary + 1 yr Vocational]</b>	<b>36.7</b>	<b>24.8</b>	<b>-11.9</b>	<b>18.4</b>	<b>6.4</b>
<b>5.00 LBGO,ULO [Primary + 4 yr lower level]</b>	<b>37.0</b>	<b>27.9</b>	<b>-9.1</b>	<b>18.4</b>	<b>9.5</b>
<b>6 LTO [Primary + 4 yr Vocational]</b>	<b>47.0</b>	<b>41.3</b>	<b>-5.7</b>	<b>18.4</b>	<b>22.9</b>
<b>7 MULO [Primary + 4 yr midlevel]</b>	<b>54.8</b>	<b>36.7</b>	<b>-18.1</b>	<b>18.4</b>	<b>18.3</b>
<b>8 COVAB [MULO + Nurses Training]</b>	<b>71.2</b>	<b>62.1</b>	<b>-9.1</b>	<b>37.0</b>	<b>25.1</b>
<b>9 NATIN, AMTO [MULO-LTO + 4 yr vocational]</b>	<b>73.0</b>	<b>60.5</b>	<b>-12.5</b>	<b>47.0</b>	<b>13.5</b>
<b>10 PI [MULO + 4 yrs Teacher Training]</b>	<b>79.6</b>	<b>50.0</b>	<b>-29.6</b>	<b>54.8</b>	<b>-4.8</b>
<b>11 IMEO [MULO + 3 yrs Commercial Training]</b>	<b>75.1</b>	<b>60.7</b>	<b>-14.4</b>	<b>54.8</b>	<b>5.9</b>
<b>12 HAVO [Higher Secondary 2 yrs]</b>	<b>74.2</b>	<b>60.5</b>	<b>-13.7</b>	<b>54.8</b>	<b>5.7</b>
<b>13 VWO [Higher Secondary 3 yrs]</b>	<b>76.0</b>	<b>67.9</b>	<b>-8.1</b>	<b>54.8</b>	<b>13.1</b>
<b>14 HBO [Tertiary Vocational 2-4 yrs]</b>	<b>91.7</b>	<b>82.2</b>	<b>-9.5</b>	<b>74.2</b>	<b>8.0</b>
<b>15 Universiteit BSC [Tertiary Academic 3 yrs]</b>	<b>91.9</b>	<b>84.9</b>	<b>-7.0</b>	<b>76.0</b>	<b>8.9</b>
<b>16 Universiteit MSC [Tertiary Academic 5 yrs]</b>	<b>100.0</b>	<b>93.9</b>	<b>-6.1</b>	<b>91.9</b>	<b>2.0</b>
<b>Total</b>			<b>-10.8</b>		<b>9.8</b>

**Table 3: Predictive power of five representation of Surinamese education on occupational status and personal income (Mult R)**

		#Cat	ISEI1	PINC
SR_DEGRxx	Highest attended, complete or incomplete	31	.680	.423
SR_DEGRx	Highest attended	16	.641	.379
SR_DEGR	Highest completed	16	.672	.405
DEGREE	Highest completed	7	.571	.357
EDLEVEL	Highest attended, complete or incomplete	9	.xxx	.xxx



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**Any questions and/of feedback?**

# Can ISCED-2011 / ISLED capture the loss?

- Only a little bit ...
- ISCED makes it possible to accommodate incomplete qualifications.
- But ISCED merges different qualifications within codes that should not be combined from a Surinamese perspective.
- So there are gains and losses now we use ISCED as our coding frame.

	HIGHEST PROGRAM ATTENDED	ISCED	ISCED		
		complete	incomplete		
1	Did not go to school - illiterate	010	010	Less than primary	
2	BO [Special education]	030	020	Less than primary	
3	GLO [6 yr Primary]	100	030	Primary	
7	MULO [Primary + 4 yr midlevel]	244	241	Lower secondary academic	
4	EBO [Primary + 1 yr Vocational]	253	251	Lower secondary vocational	
5	LBGO [Primary + 4 yr lower level]	254	251	Lower secondary vocational	
6	LTO [Primary + 4 yr Vocational]	254	251	Lower secondary vocational	
12	HAVO [Higher Secondary 2 yrs]	344	341	Upper secondary academic	
13	VWO [Higher Secondary 3 yrs]	344	341	Upper secondary academic	
8	COVAB [MULO + Nurses Training]	353	351	Upper secondary vocational	
9	Natin, AMTO [MULO-LTO + 4 yr vocational]	354	351	Upper secondary vocational	
10	Pedag.instellingen [MULO + 4 yrs Teacher Training]	354	351	Upper secondary vocational	
11	IMEO [MULO + 3 yrs Commercial Training]	354	351	Upper secondary vocational	
15	Universiteit BSC [Tertiary Academic 3 yrs]	645	641	Bachelor academic	
14	HBO [Tertiary Vocational 2-4 yrs]	655	651	Bachelor vocational	
16	Universiteit MSC [Tertiary Academic 5 yrs]	746	741	Master academic	

NB: Codes derived from the UNESCO (2012) ISCED-2011 manual. The UNESCO mappings were often inconsistent and of little help

# ISLED – SRLED

