

Education-Occupation Mismatch among Vocational Secondary and University Graduates in Egypt

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I. Introduction

Definition



- **Education-Occupation Mismatch** refers to a situation in which a person in employment, during the reference period, occupied a job whose qualification requirements did not correspond to the level and/or type of qualification they possessed (ILO, 2018)

Types



- Horizontal: misalignment of education field
- **Vertical: misalignment of educational level**

Contribution



- Contributing to the limited literature in **Egypt** by examining the education occupation mismatch and its consequences on **earnings, job satisfaction, and skills** using two different mismatch measurement methods

II. Measuring the Mismatch

Objective Method

Hybrid Method based on the context

Subjective Method

Normative Job Analysis Method (JA)

Based on a professional job analyst's evaluation

Statistical/Realized Matches Method (RM)

- Modal of education attained
- Mean of education attained

Advantages:

- Captures the most common level which can reflect more the sudden shifts in skill demand

Limitations:

- Unrealistic assumption of homogeneity of education requirements for an occupation
- Allows only one educational level to be well-matched with each job
- Inadequate to represent the demand side
- Mode: the most common level does not necessarily mean it's the required level
→ Overestimate the phenomena

Direct self-assessment (DSA)

Directly asks workers' opinion regarding whether their job matches or is related to their level of education

Indirect self-assessment (ISA)

Asks workers about the education requirements of their current job

Advantages:

- Job specific
- Easily observable

Limitations:

- labours might be not well informed of the new requirements due to the current dynamic market
- Might be biased due to labour's perceptions; can overstate the requirements to heighten their socioeconomic status

III. Data

Questions of Focus in the survey:

Self-Reporting:

- What is the highest level of education required for your current job?
- What is your highest education level?

Satisfaction:

- How satisfied are you with your current job? (including various aspects of the job e.g., earnings, job security, type of work, distance, etc.)

Earnings:

- Monthly Wage

Skills:

- Does your job require any technical skills?
- Does your job require any specific abilities? (A list of core, academic skills, technical, and soft skills e.g., starting from basic literacy, to technical and management skills to digital video editing skills)
- To what extent do you have the following skills? (A list of core, academic skills, technical, and soft skills)

ELMPS 2023 Wave

Wage workers aged 15-64 employed during the 3 months preceding the survey interview

7,596

Vocational Secondary Graduates



University+ Graduates



IV. Methodology

We used both the Subjective and the Objective Methods to compare results

Subjective (Self-Reported)

- Compared the employed graduates' education attainment level to their self-reported required level for their job

Objective (RM)

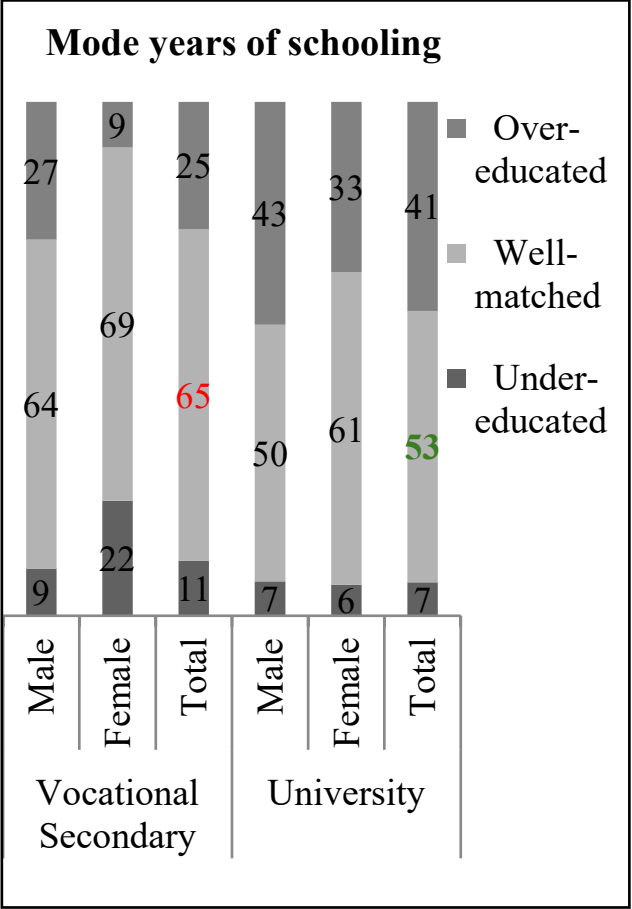
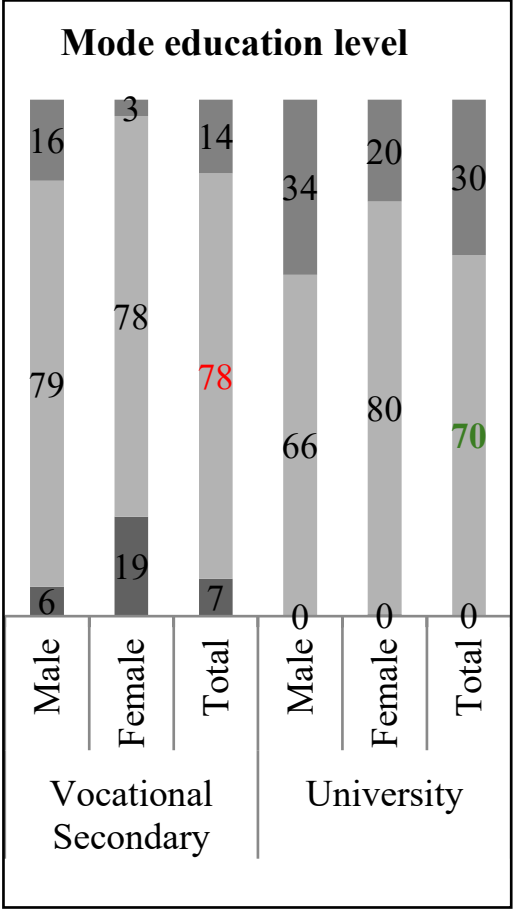
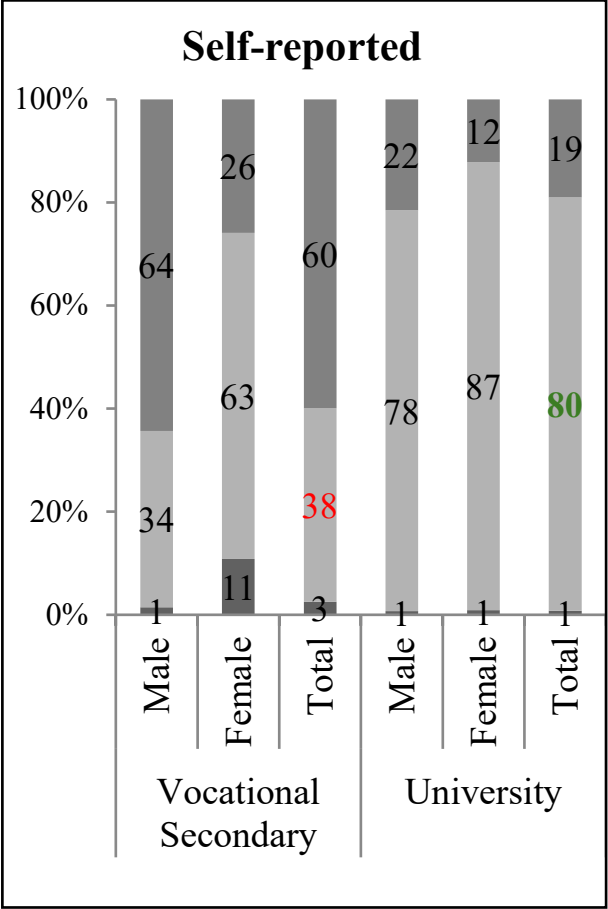
- Used the modal years of education by generating the lowest most common education (Categories of Education level and Years of schooling)
- The minimum mode in each International Standard Classification of Occupations (ISCO) **three-digit** occupation group by individuals' graduation cohort (<2000, 2000-2010, 2010+) and education level (vocational & university+)

→ **ORU: Over-education (O)**
Well-matched (M)
Under-education (U)

V. Results

Education-Occupation Mismatch: Different Measurement Methods

All three measurement methods exhibit dissimilar results – mode methods relatively more consistent due to the aforementioned biases



All three methods yielded:

- Undereducation is not a major problem
- Mismatch less evident among Females

Vocational Secondary:

Self-reported: highest mismatch

- Self-reported method: 38% of the vocational graduates were well-matched
- The two Mode methods: Over 65% were well-matched

University+ graduates:

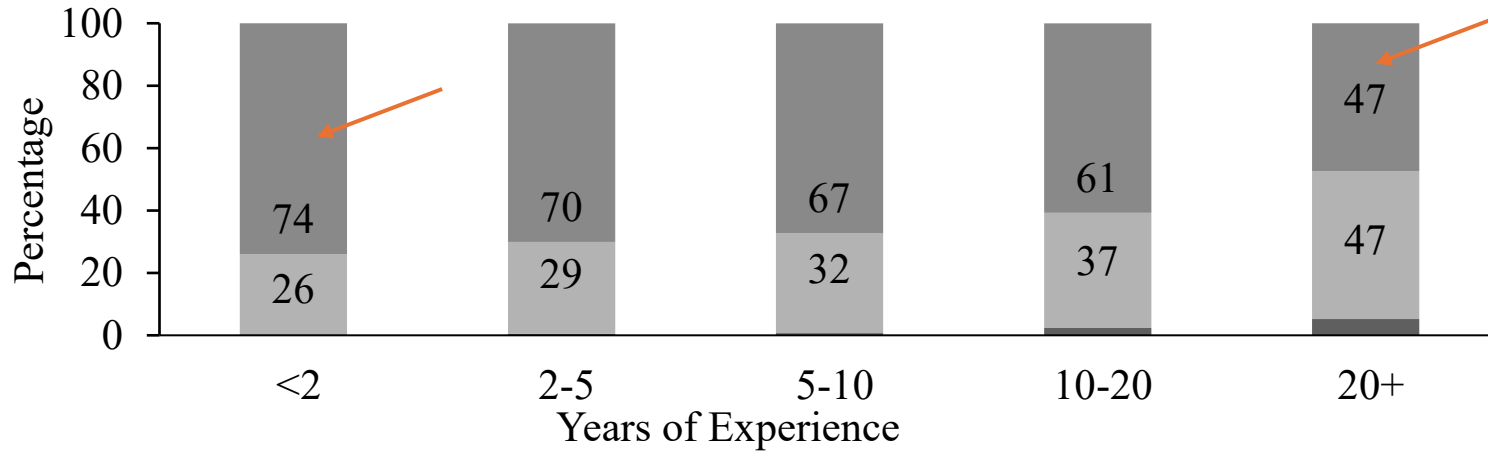
Self-reported: lowest mismatch

- All three measures agreed that the majority were well-matched with lower percentages provided by the measure employing the mode of the years of schooling

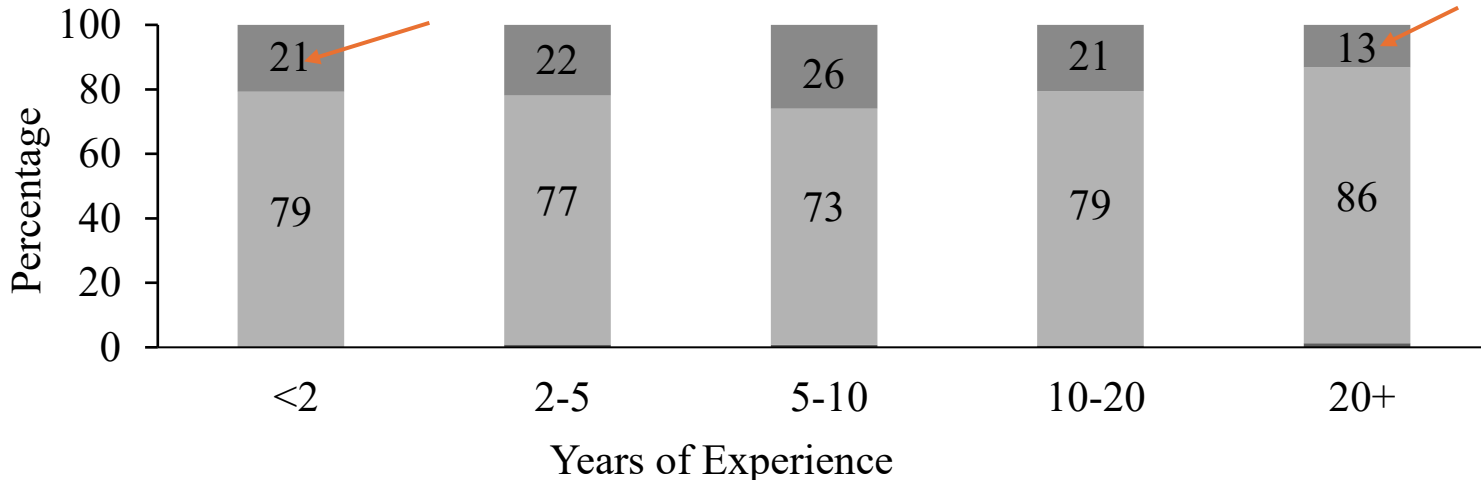
Source: Authors' Calculations based on the ELMPS 2023

Self-Reported Mismatch: Years of Experience

Vocational Secondary Graduates



University Graduates



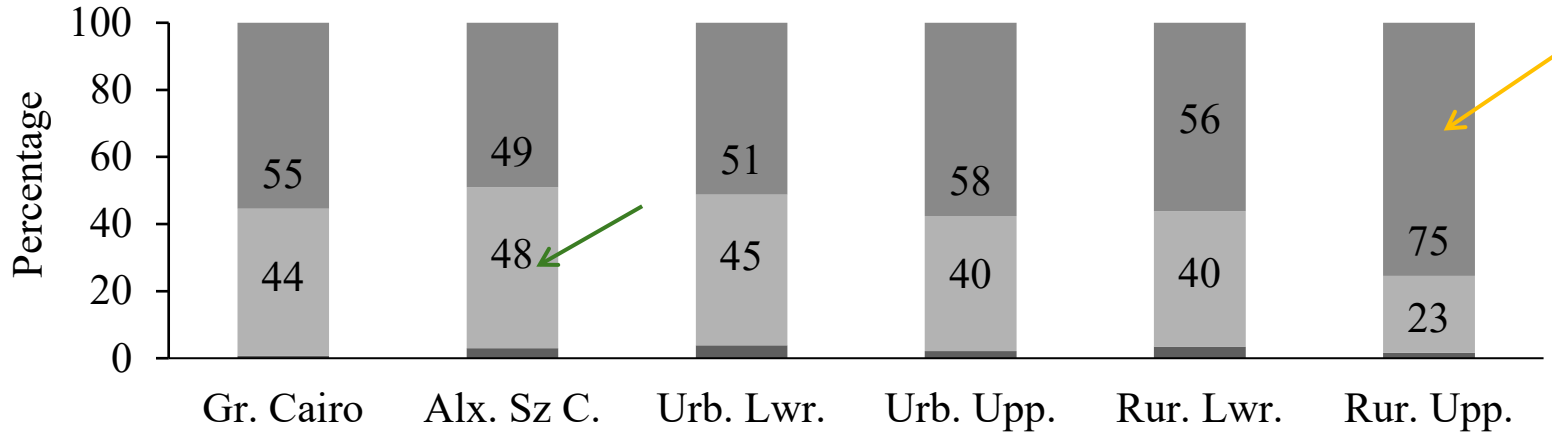
The **higher** the experience the **less** the prevalence of overeducation, and the **higher** the likelihood of being well-matched.

Similarly, the data also show that the mismatch **substantially declined** with age.

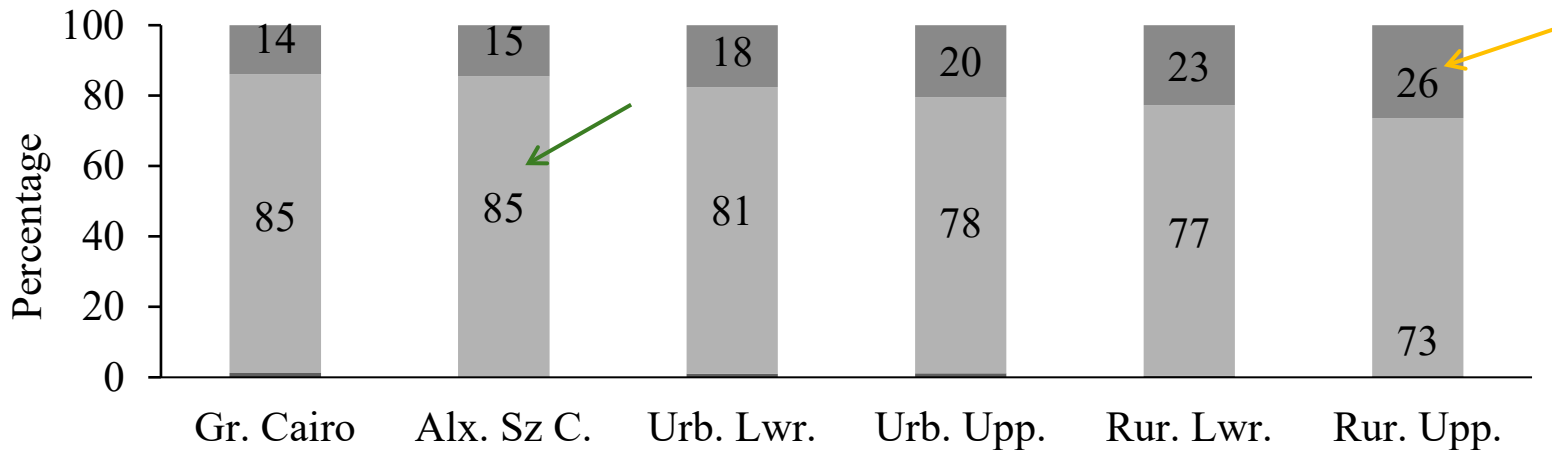
■ Undereducated ■ Well-Matched ■ Overeducated

Self- Reported Mismatch: Region

Vocational Secondary Graduates



University Graduates



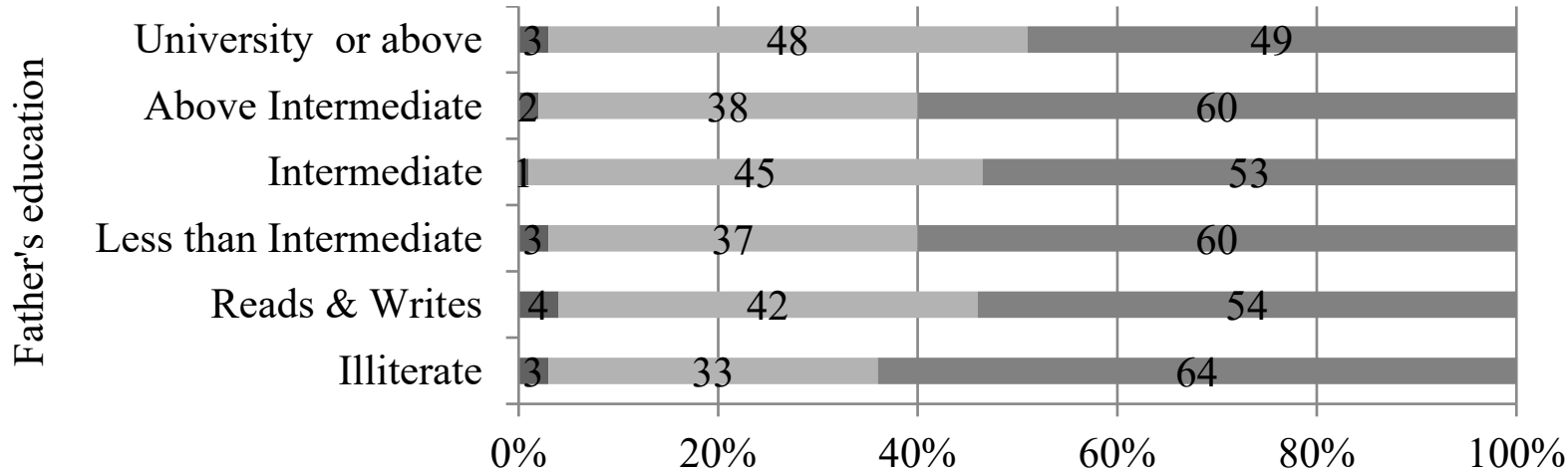
Among both vocational secondary and university graduates:

- Highest percentage of **overeducation** was in Rural Upper Egypt
- Highest percentage of **well-matched** workers was in Alexandria and the Suez Canal governorates followed by greater Cairo and urban Lower Egypt

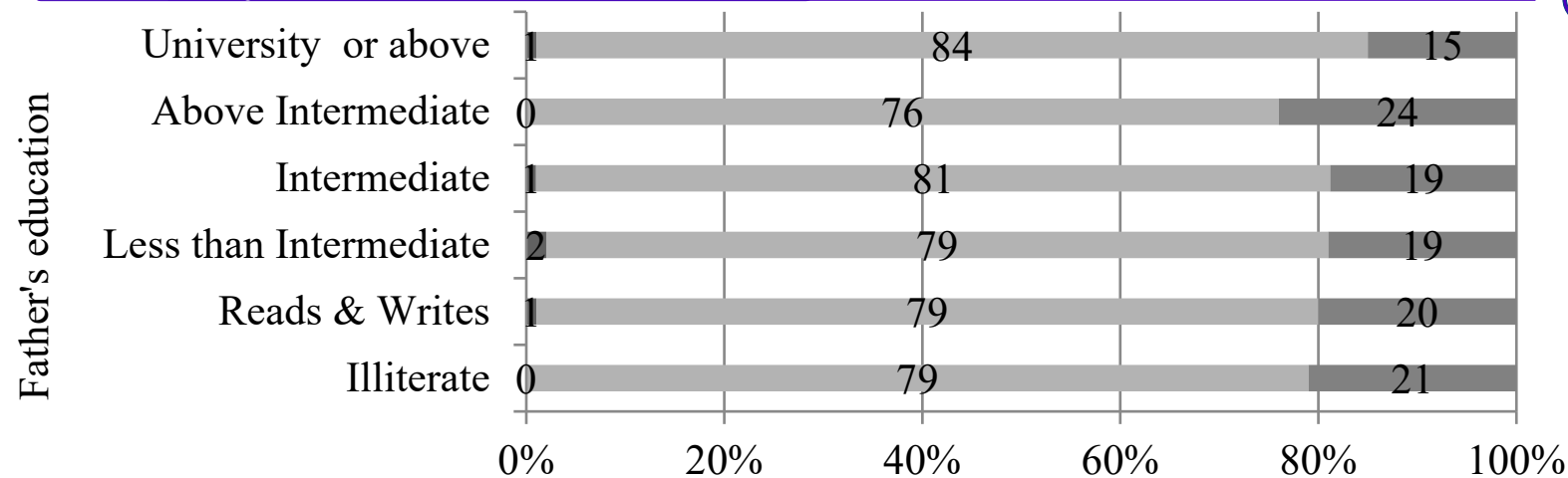
■ Undereducated ■ Well-Matched ■ Overeducated

Self- Reported Mismatch: Father's education attainment

Vocational Secondary Graduates



University Graduates

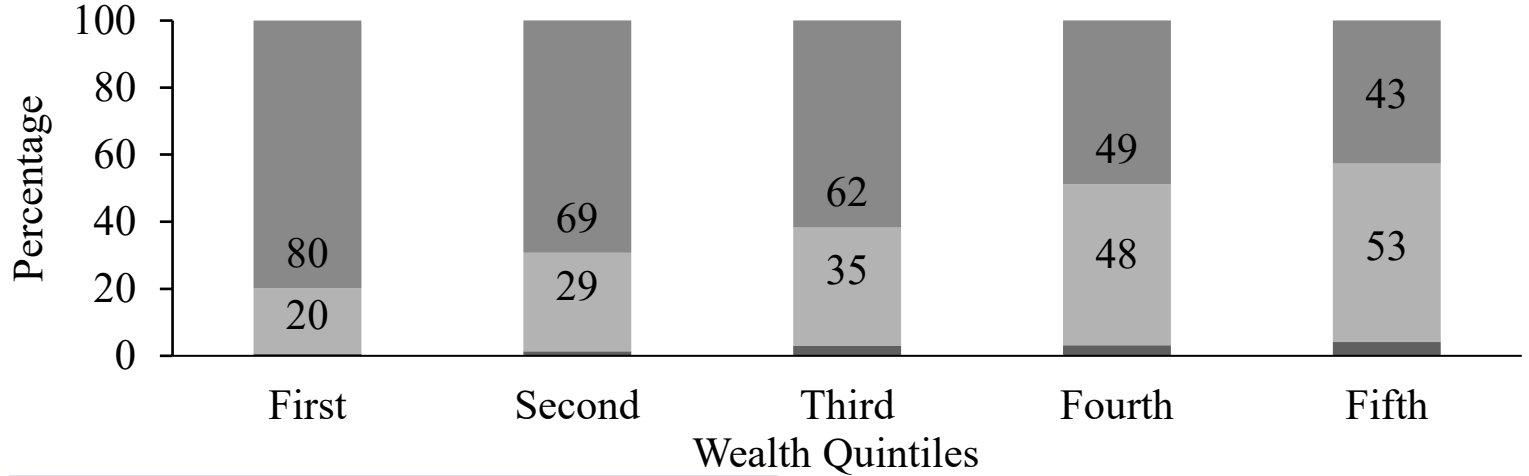


■ Under-educated ■ Well-Matched ■ Over-educated

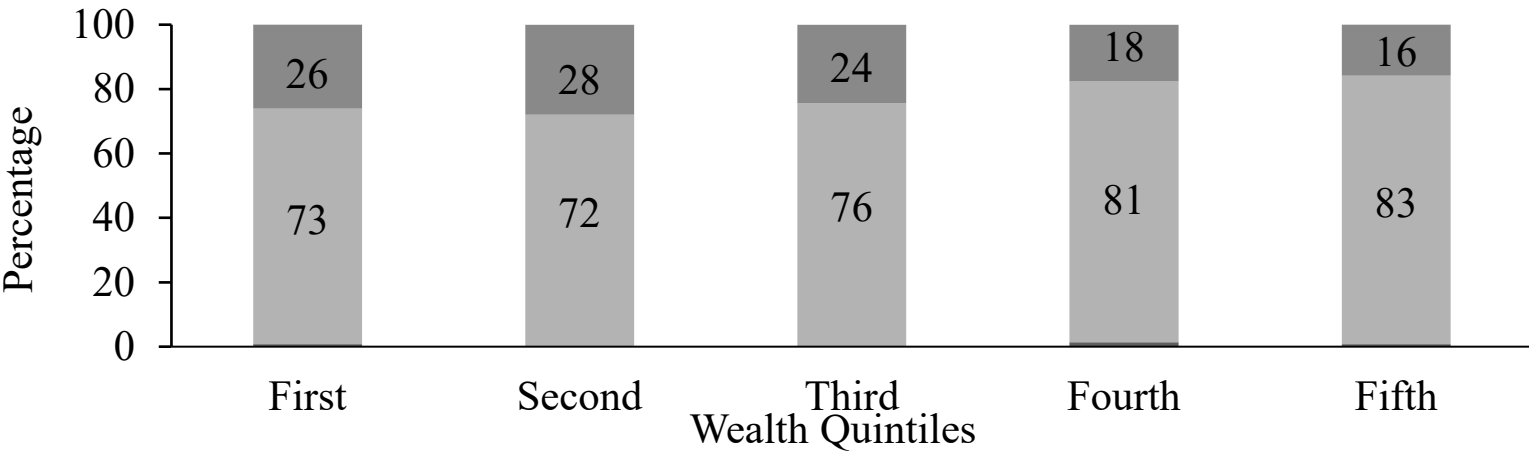
The **higher** the father's education level, the **more** likely the individual is to be well-matched.

Self-Reported Mismatch: Wealth Quintiles

Vocational Secondary Graduates



University Graduates



Undereducated
 Well-Matched
 Overeducated

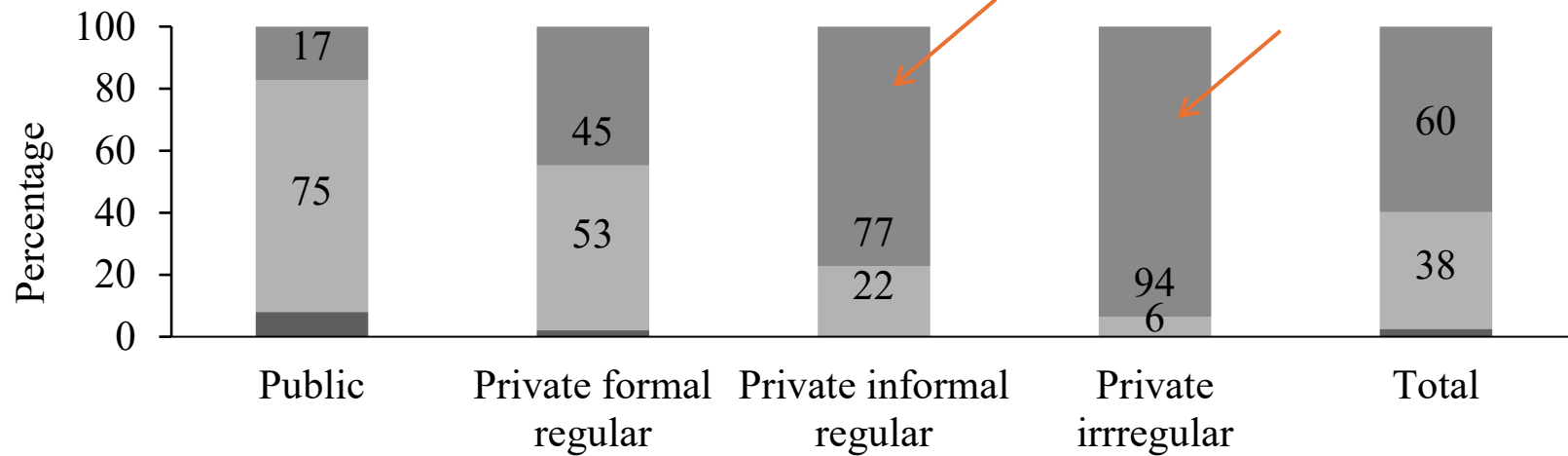
The prevalence of **well-match** graduates from both education tracks substantially **increases** with household wealth.

However, this result should be taken with caution, since: not only wealth is likely to shape **mismatch** status, but also mismatch can cause **lower income** and **wealth**.

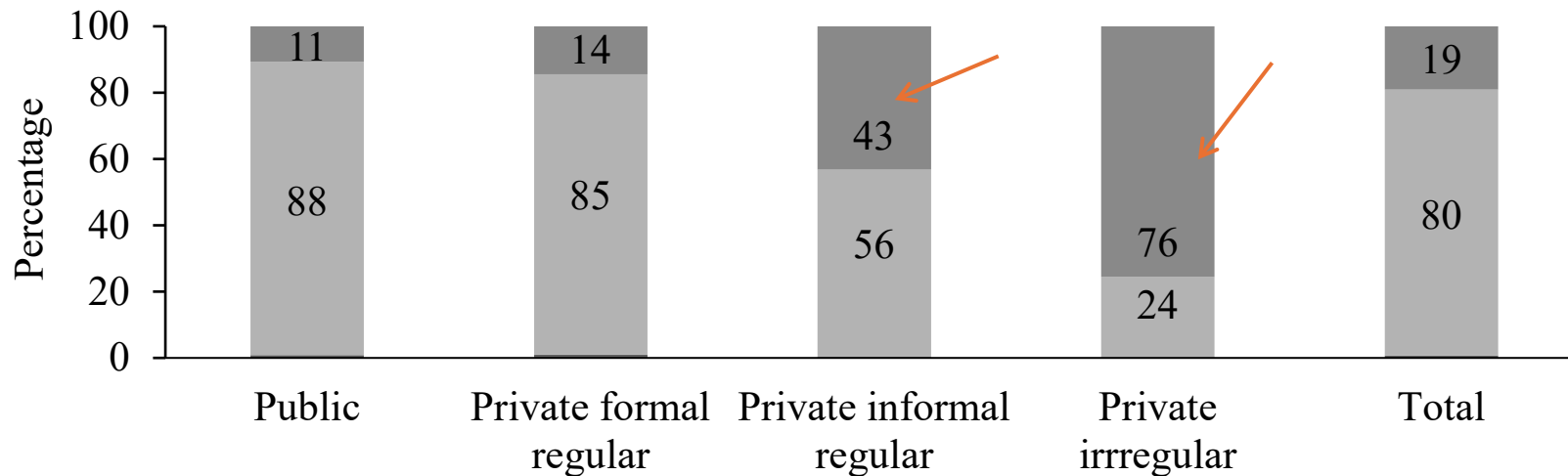


Self-Reported Mismatch: Sector and Formality of Job

Vocational Secondary Graduates



University Graduates



Mismatch is most prevalent in the **informal** sector.

Particularly among **irregular** workers.

■ Undereducated ■ Well-Matched ■ Overeducated

Self- Reported Mismatch: Firm Size and Economic Activity

Vocational Secondary Graduates

University Graduates

	Under- educated	Well- Matched	Over- educated	Under- educated	Well- Matched	Over- educated
Firm place/ size						
Outside of establishment	0	13	87	0	46	54
Small	1	31	68	1	65	35
Medium	8	53	38	0	87	12
Large/do not know	3	66	30	1	87	12
Economic Activity						
Agriculture	0	8	92	0	34	66
Industry/ Construction	1	32	67	1	74	26
Services and Others	4	47	49	1	83	16
Total	3	38	60	1	80	19

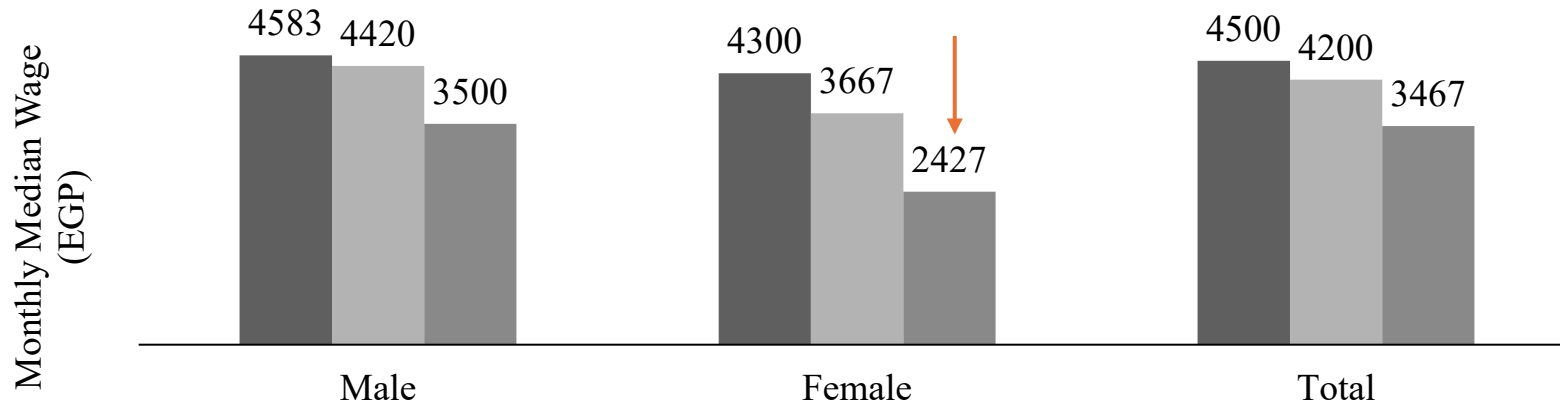
Overeducation

Considerably **declines** with **firm size** and **increases** with working **outside an establishment**.

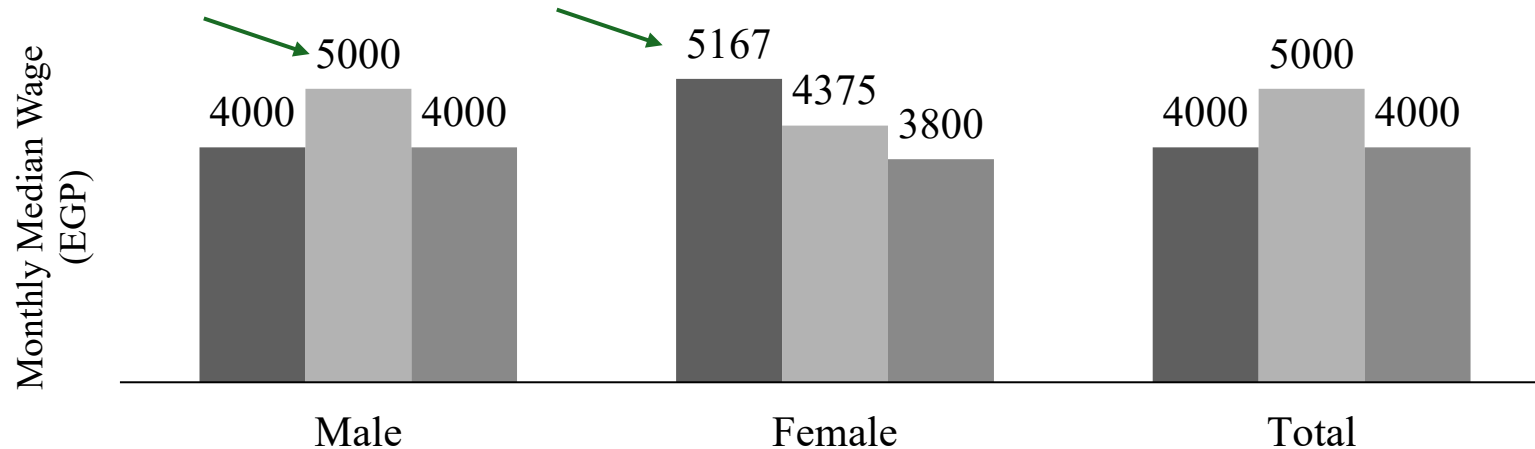
And is **highest** in the **agricultural** sector followed by the **industry** and **construction** sector.

Self-Reported Mismatch and Earnings

Vocational Secondary Graduates



University Graduates

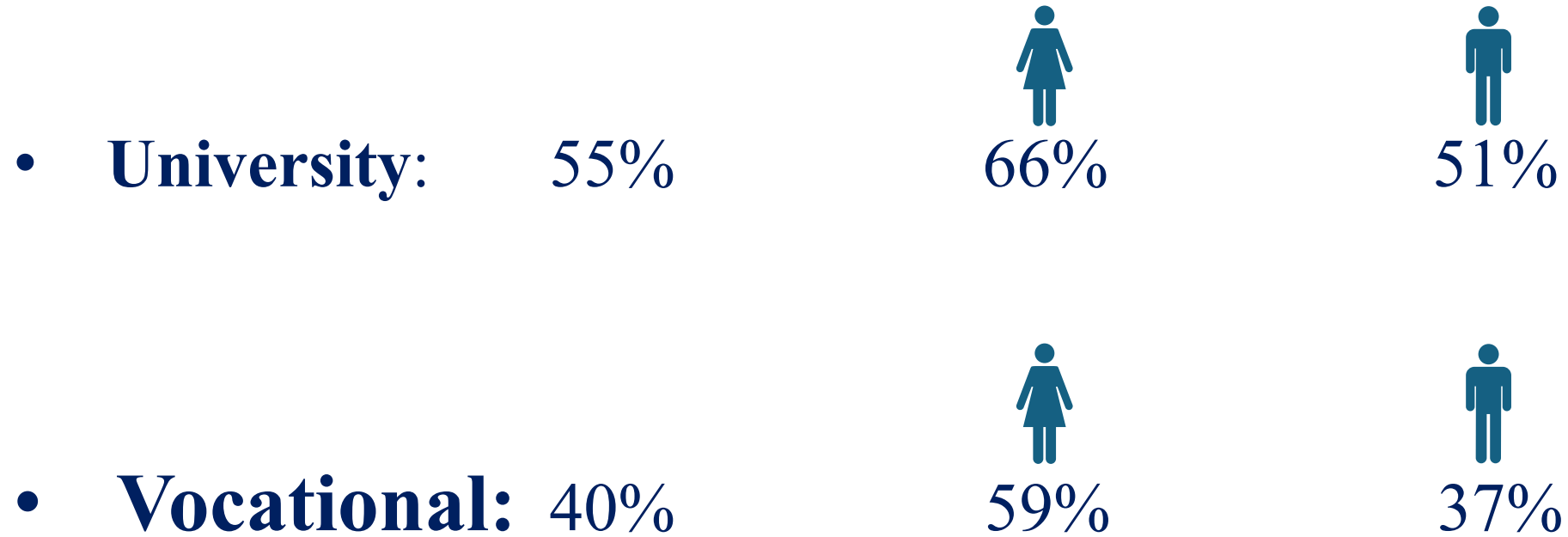


■ Undereducated ■ well-matched ■ Overeducated

- The **highest median monthly wage** is observed among **undereducated** women university graduates (very small group), followed by their well-matched male peers
- **Overeducation** was associated with a **wage penalty**, as compared to the well-matched group; yet **undereducation** was mostly associated with a **wage premium** (very small group)
- **Highest wage penalty** observed among **Women vocation secondary graduate**

Self- Reported Mismatch and Satisfaction

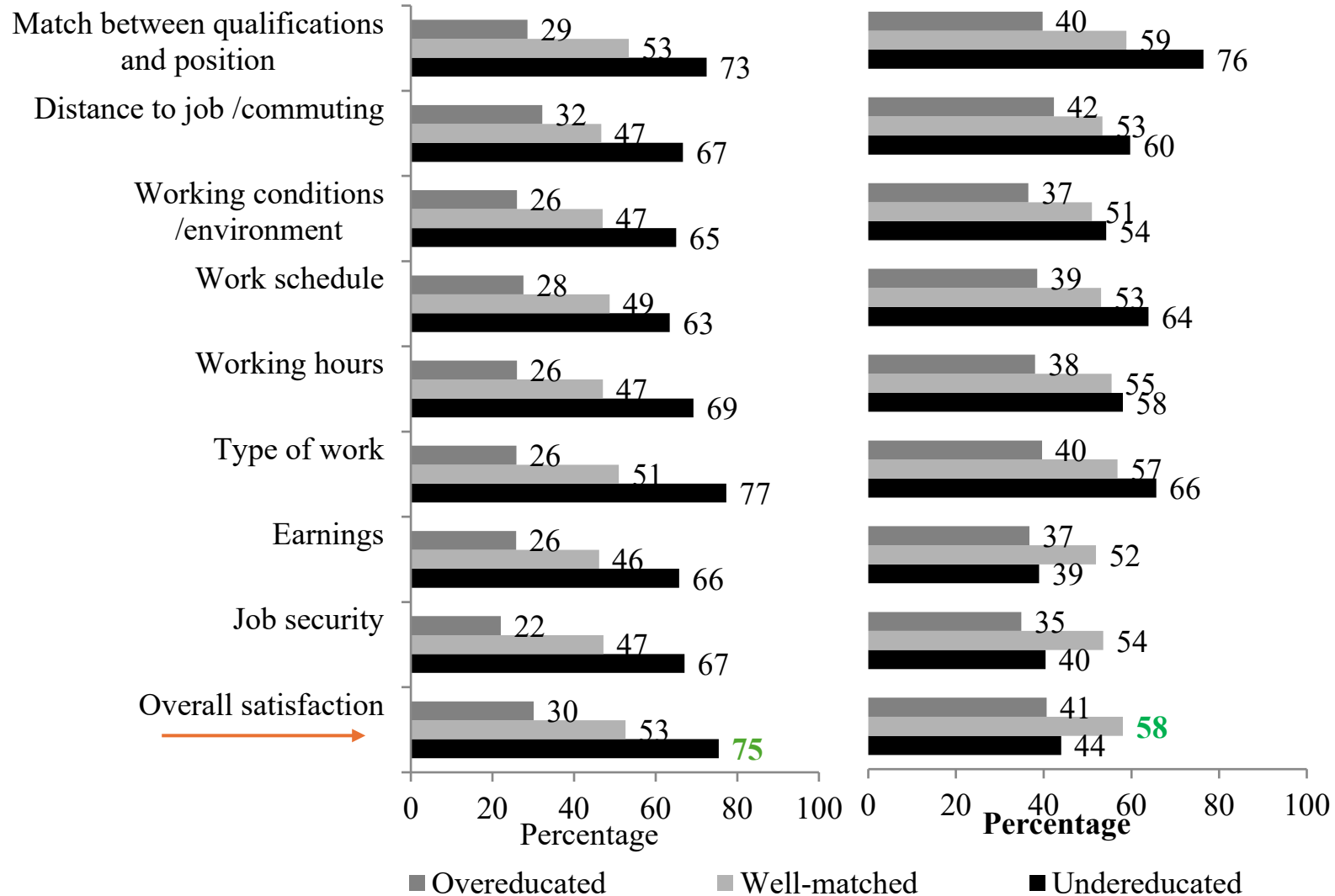
Full satisfaction with one's job was common:



Self-Reported Mismatch and Satisfaction

Vocational Secondary

University Graduates



- **Undereducated and well-matched** graduates were generally more **fully satisfied** with their jobs than the overeducated
- Highest rates of **overall full satisfaction**:
 - Undereducated vocational (75%)
 - Well-matched university (58%)
- Overeducated vocational graduates were the least satisfied group with **all the various aspects**

Self- Reported Mismatch and Skills:

Acquired skills “To what extent do you have the following skills? “strong and very strong”

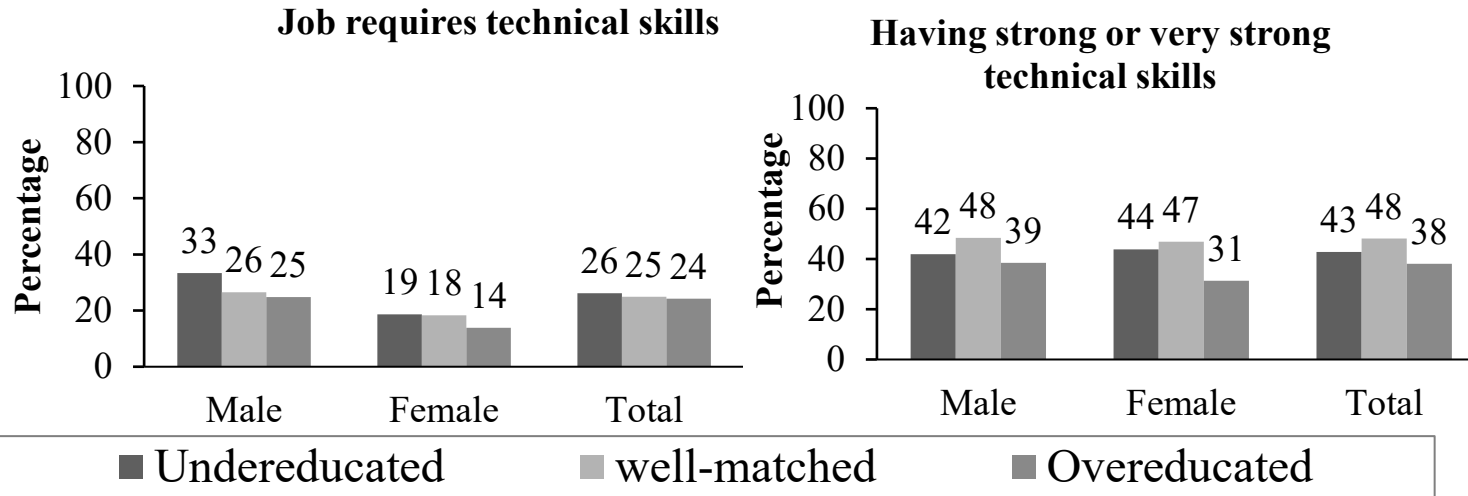
Only 42% of vocational graduates reported having strong (strong or very strong) technical skills, which were **lower** than rates reported by university graduates (55%)

Required skills “Does your job require any of the following specific abilities? “Yes”

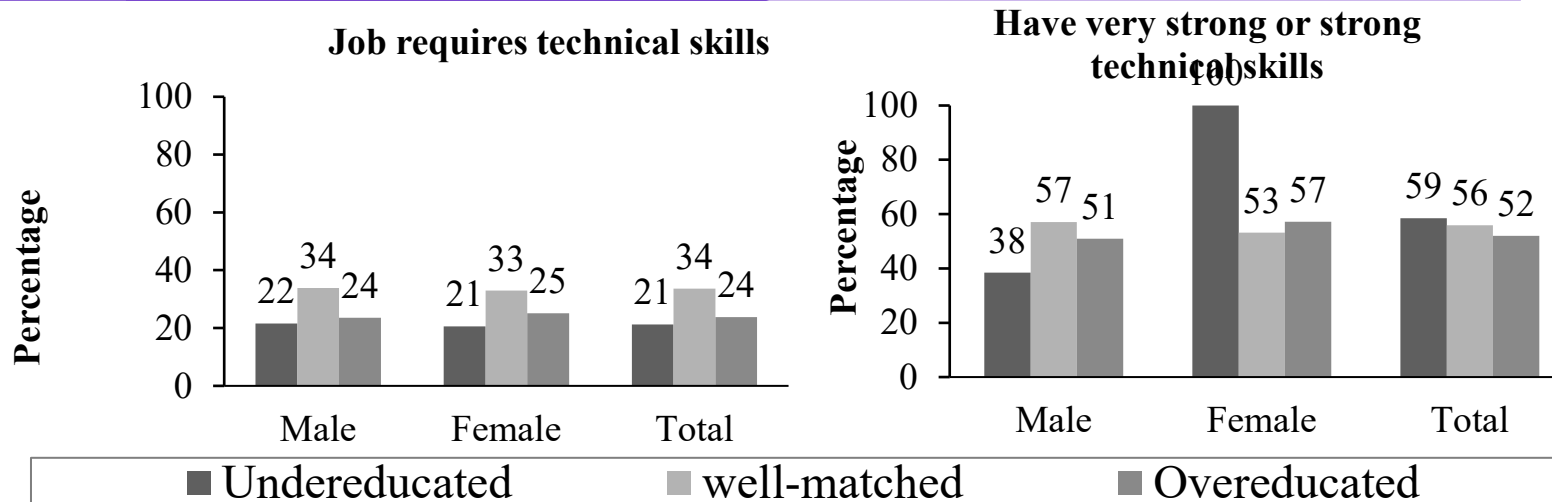
Only about **25%** of vocational school graduates, vs. **32%** of university graduates, reported working in jobs that require technical skills

Self-Reported Mismatch and Skills: Technical Skills

Vocational Secondary Graduates



University Graduates



Acquired:

- Strong technical skills was **most prevalent** among the **undereducated university** graduates (59%), followed by their well-matched peers (56% vs. 52% for the overeducated)
- **Among vocational secondary**, the **well-matched** group had the **higher** prevalence of individuals with **strong technical** skills, followed by their **undereducated** graduate peers

Required:

- The likelihood of working in **jobs requiring technical skills** did **not vary much** by mismatch status among vocational secondary graduates

Self- Reported Mismatch and Skills: Other Skills

- Other skills included in the ELMPS 2023 shows a **similar pattern** for acquired and required skills by (mis)match across education levels, differing slightly from technical skills
- **University and secondary-educated graduates: Strong** proficiency in a specific skill was **more prevalent among the well-matched and undereducated** compared to the overeducated group
- Jobs requiring **specific skills** are more common among **well-matched and undereducated** graduates
 - ➔ **Undereducated** individuals are more **likely to seek additional skills** to bridge the gap between their education level and job requirements,
However, the **overeducated** group **does not share this urgency** since they are already employed in positions that do not fully utilize their educational qualifications
 - ➔ Evidence supports that **skill proficiency**, rather than **education level**, is more critical for job attainment in Egypt's labour market

VI. Concluding Remarks

VI. Concluding Remarks

- Subjective and objective mismatch measurement methods yield **distinct** results by capturing different dimensions of mismatch
- **Undereducation is not a major** problem in the Egyptian labour market, but **overeducation is widespread** among both educational tracks
- Focusing on the self-reported measurement method results, the mismatch phenomenon appears less prevalent among working women in Egypt
- **Overeducation is widespread among: Early Career graduates, rural areas, low educated fathers, informal private sector, outside establishments and in small firms, skilled agricultural, forestry, and fishery workers**
- **Overeducation** was associated with a **wage penalty**, compared to the **well-matched group**; yet **undereducation** was mostly associated with a **wage premium**
- The percentage of **fully satisfied** individuals was the lowest among the overeducated group from both educational tracks. Job satisfaction was **higher** among the **undereducated** group followed by their well-match peers.
- The job-skill requirements analysis support the previous literature highlighting **that importance of acquiring skills over credentials in the Egyptian labor market**

THANK YOU

Table: Skills required by vocational secondary and university graduates by mismatch status (%)

Does your job require any of the following specific abilities?	Vocational Secondary			University		
	Under-educated	Well-Matched	Over-educated	Under-educated	Well-Matched	Over-educated
Basic literacy	99	91	37	100	97	75
Mathematics or statistics	81	60	25	82	73	54
Physical fitness	79	75	68	57	62	64
Management skills	83	63	30	80	80	54
Customer service skills	51	52	32	37	61	48
Foreign language skills	27	14	2	56	51	24
Basic book-keeping or accounting skills	61	40	20	47	53	36
Problem-solving	81	76	50	98	83	64
Communication and presentation	77	66	48	86	79	65
Manual dexterity	55	55	63	60	43	54
Teamwork skills	83	77	59	82	81	70
Computer skills	29	13	2	60	48	19
Setting up and protecting computer systems	3	2	0	9	11	2
solving computer problems	4	2	0	5	13	4
Computer systems programming	3	2	0	5	12	3
Use of electronic services	13	5	0	38	27	7
Use the application interface	14	5	0	35	26	5
Maintenance and management of information and communication technology systems	1	2	0	5	8	2
Using digital tools to control machines	2	3	0	5	15	3
Browse, search, and filter digital data	8	4	0	27	19	2
Digital data management and analysis	11	3	0	27	18	2
Use of computer-aided design & drawing tools	4	2	0	27	12	1
Using digital tools to process sound and images	2	2	0	27	10	1
Using digital tools to create content	8	2	0	27	13	1
Use digital tools for collaboration & productivity	6	2	0	24	12	1
Use of word processing software	8	4	0	2	20	4
Spreadsheet skills	21	5	0	33	32	6
Digital video/photo editing skills	2	2	0	10	11	3

Table: Skills acquired by vocational secondary and university graduates by mismatch status (%)

To what extent do you have the following skills?	Vocational Secondary			University		
	Under-educated	Well-Matched	Over-educated	Under-educated	Well-Matched	Over-educated
Basic literacy	98	97	90	100	99	99
Mathematics or statistics	69	62	55	89	80	74
Physical fitness	58	74	71	79	74	78
Technical skills	43	48	38	59	56	52
Management skills	69	60	44	86	76	66
Customer service skills	48	53	36	61	60	55
Foreign language skills	14	13	5	55	59	43
Basic book-keeping or accounting skills	60	44	36	89	64	55
Problem-solving	73	71	58	93	78	70
Communication and presentation	72	64	51	95	78	72
Manual dexterity	52	55	58	52	50	55
Teamwork skills	80	74	64	86	81	75
Computer skills	13	10	4	47	46	29
Setting up and protecting computer systems	5	3	2	10	17	9
solving computer problems	3	3	1	9	17	8
Computer systems programming	4	2	1	9	14	6
Use of electronic services	6	8	5	28	34	15
Use the application interface	6	8	5	31	35	16
Maintenance and management of information and communication technology systems	3	2	1	5	11	6
Using digital tools to control machines	3	3	1	16	18	7
Browse, search and filter digital data	5	4	1	35	23	9
Digital data management and analysis	6	2	1	27	21	8
Use of computer-aided design & drawing tools	4	2	1	6	16	6
Using digital tools to process sound & images	5	2	2	5	16	7
Using digital tools to create content	7	2	1	5	18	7
Use digital tools for collaboration & productivity	5	2	1	2	13	6
Use of word processing software	4	4	2	8	25	13
Spreadsheet skills	6	6	3	16	37	18
Digital video/photo editing skills	2	3	2	8	20	9