The Impact of a M.Sc. Programme on the Career Paths of Postgraduate Students

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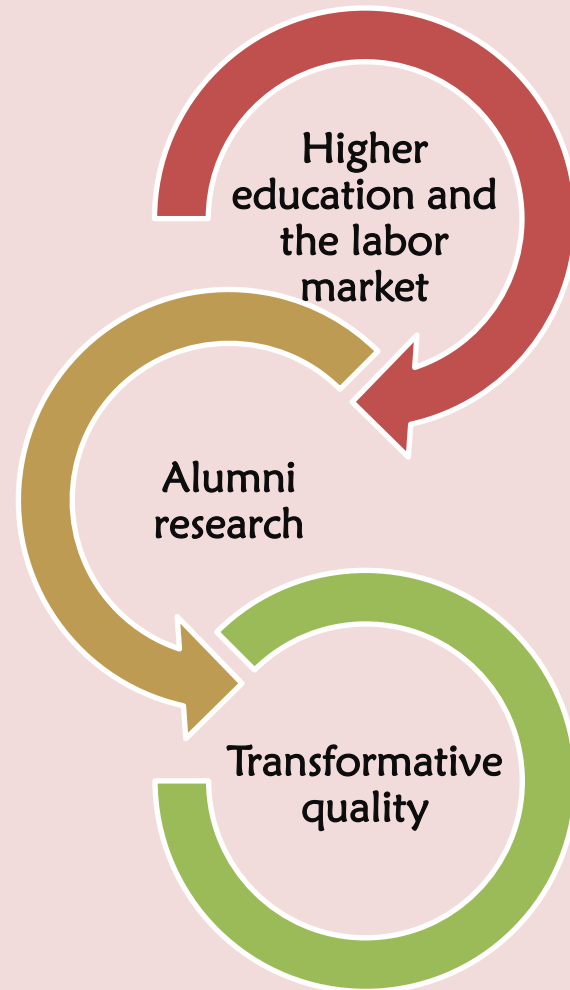[1]National and Kapodistrian University of Athens, Greece
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Overview

1. Introduction
2. Purpose and Research Questions
3. Method
4. Results
5. Conclusions

Introduction

Higher education and the labor market

Alumni research

Transformative quality

- Is it frequently a subject for evaluation to what extent the graduates achieve the desirable skills?

- Few studies have been conducted to examine the relation between master's degree graduates and their labor market outcomes

- The curricula of teacher education need periodic transformations to respond to the evolution of educational research and national objectives.
- Teachers' perceptions relate to their competency in their subject play a decisive role in the success of any transformation.
- **Graduates' careers**, as a result of postgraduate education, have been seen as **an overlap** between quality and transformation.

Purpose and Research Questions

This study aims to better understand the role of masters' programmes, which could be helpful for the development of policies and educative strategies to improve science education

Research question 1:

Is there an effect of a master programme on the labour market outcomes in terms of postgraduates (alumni) career paths?

Research question2:

Does gender and career changes of postgraduates (alumni) affect their perceptions about the impact of master programme on their professional development and their professional practices?

Method

The context

- Inter-Institutional Master of Science programme in "Chemistry Education, Information and Communication Technology, and Education for Sustainable Development"

The participants

- 70 postgraduates in the period 2001-2022

The instrument

- A three-parts questionnaire

The procedure

- A 10 min one-time online survey

Data analysis

- Statistical analysis of quantitative data
- Content analysis of qualitive data

Results

Questionnaire

Part 1
- Demographic information including gender and graduation year
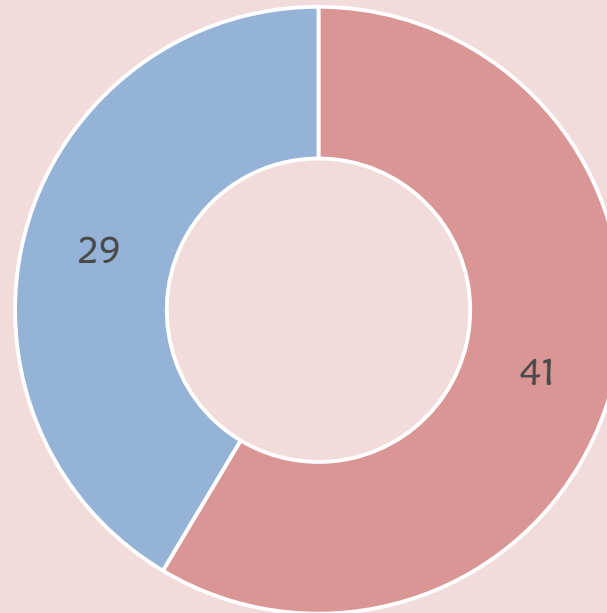
Part 2
- Information about responders' career paths after their graduation

Part 3
- Respondents' perceptions concerning the impact of the master programme both on their professional development and their practices

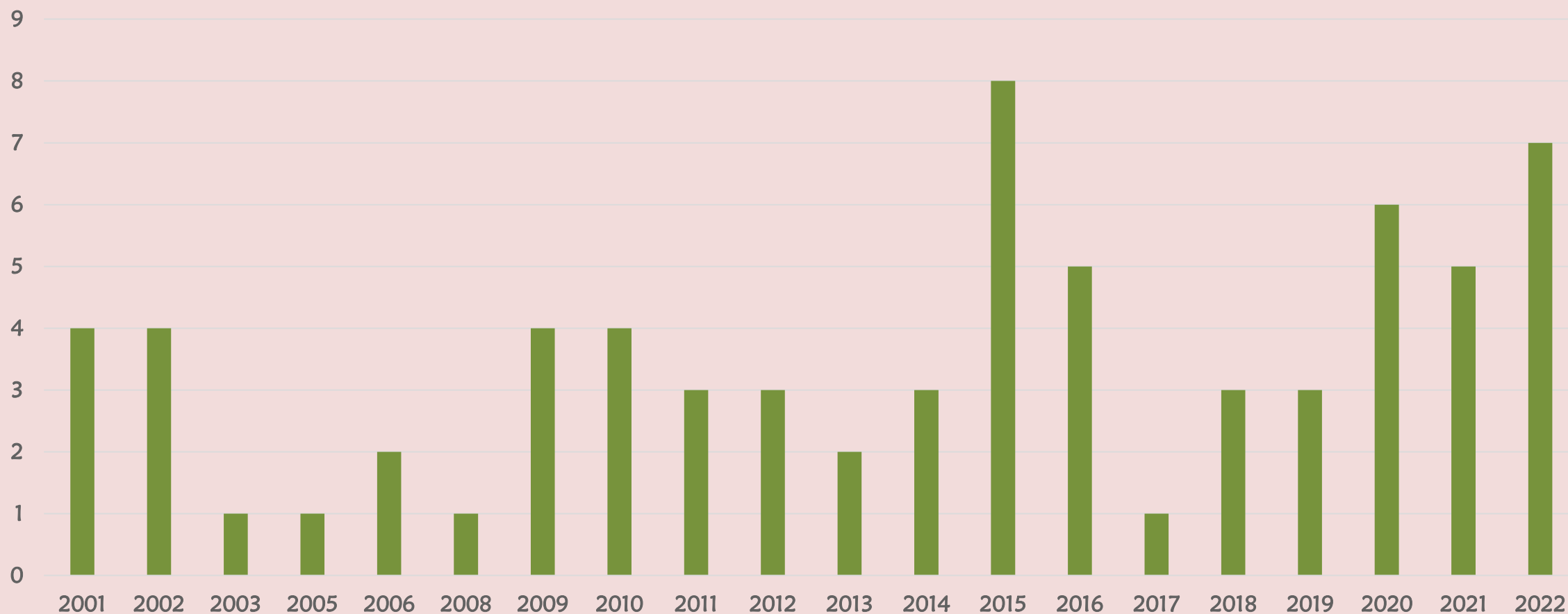# Demographic information 1

Gender Distribution
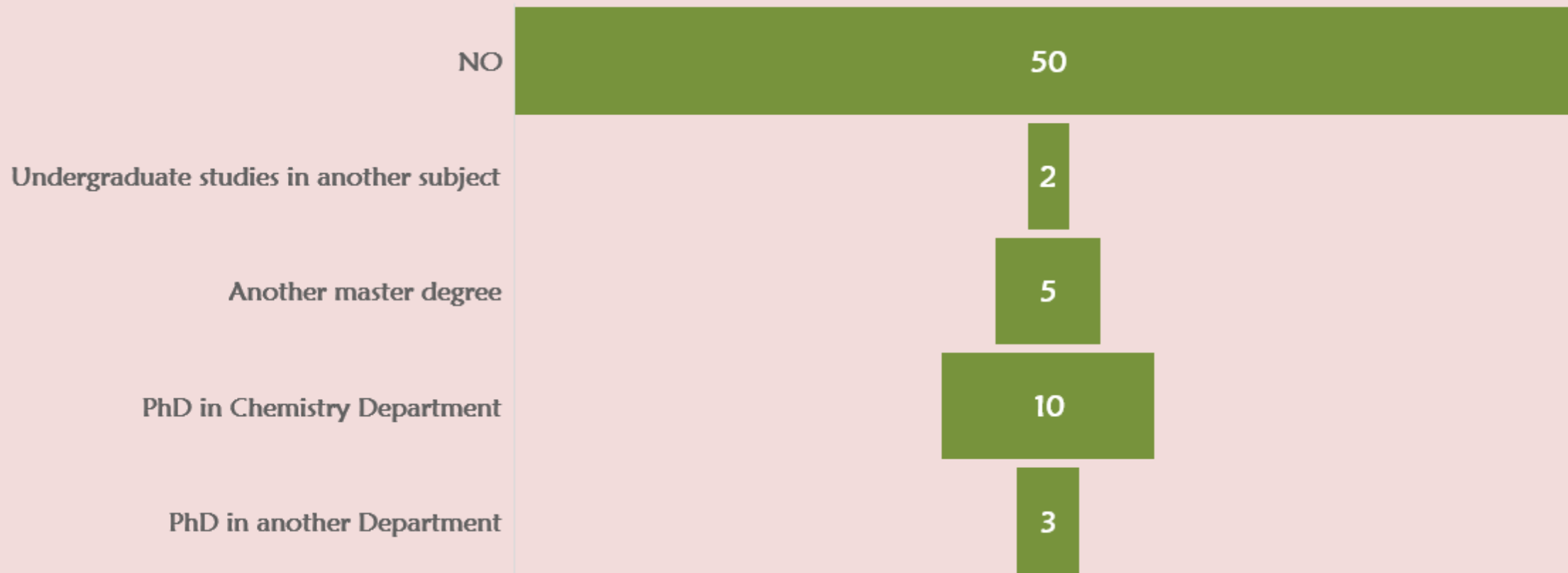

29

41

■ Female   ■ Male

Demographic information 2

Graduation year distribution

Studies after graduation

Job position before graduation

The job positions with the higher frequencies

Job position	Frequency
Secondary education in tutoring schools	27
Secondary education in a public school	23
Private sector	5

Job position after graduation

The job positions with the higher frequencies

Job position	Frequency
Secondary education in a public school	30
Secondary education in tutoring schools	11
Private sector	7
Management responsibility (e.g. School director)	5
Secondary education in a private school	5

Career Changes

Frequency of the Career Changes Scores

Job position	Frequency
They changed job position	38
They did not change job position	32
Total	70

Postgraduate perceptions

Question 6: The ChEd-ICT-ESD degree helped you in your professional development
Question 7: The knowledge you acquired during ChEd-ICT-ESD studies affect the way you carry out your duties.

Descriptives for items "Professional Development" and "Professional Practices"

Item	N	Range	Min	Max	Mean	Std. Deviation	Variance
Professional Development	70	9	1	10	7,56	2,224	4,946
Professional Practices	70	7	3	10	8,41	1,724	2,971

Paired Samples t-test

	Paired Differences			t	df	Significance	
	Mean	Std. Deviation	Std. Error Mean			One-Sided p	Two-Sided p
Professional Development – Professional Practices	-0,857	2,527	0,302	2,838	69	0,003*	0,006*

* <0,05

Gender effect

Independent Samples t-test (gender)

	Levene's Test for Equality of Variances		Independent Samples t-test			
	F	Sig.	t	df	Sig.	Mean Difference
Professional Development	1,061	0,307	-1,075	68	**0,143**	-0,579
Professional Practices	1,485	0,227	-1,126	68	**0,132**	-0,470

Career changes effect

Independent Samples t-test (career changes)

	Levene's Test for Equality of Variances		Independent Samples t-test			
	F	Sig.	t	df	Sig.	Mean Difference
Professional Development	2,418	0,125	-3,197	68	**0,001***	-1,602
Professional Practices	0,045	0,832	-0,590	68	0,279	-0,245

* <0,05

Group Statistics

Career Changes		N	Mean	Std. Deviation
Professional Development	They did not change job position	32	6,69	2,468
	They changed job position	38	8,29	1,707

Conclusions 1

Summarizing the results

- There is **an effect** of the master programme "Chemistry Education, Information and Communication Technology and Education for Sustainable Development" (ChEd-ICT-ESD) **on the labour market outcomes** in terms of **postgraduates (alumni) career paths.**

- The postgraduates have **more positive perceptions** about the impact of their ChEd-ICT-ESD studies on the **way they carry out their duties** than on **their professional development.**

- The **career changes of postgraduates (alumni) affect only** their perceptions about **the impact of master programme on their professional development.**

Although the **weak point of this research** is the **low response rate of alumni** mainly due to bad contact information, Lambert and Miller (2014) suggest that **the differences of the response rates do not affect the representativeness of the results.**

Conclusions 2

Implications of the results

Our results can have **policy implications** at the **national** and **institutional levels** in terms of qualification frameworks of chemistry teachers, curricula, and institutional support for their career development based on ChEd-ICT-ESD master programme.

Although **quality** is a positive concept generally, is made "catastrophic" when it involves external audits and measurement by state-imposed standards. **A new approach**, which places **more emphasis on understanding the essential quality of a programme**, informed by research, to ensure improvement of the learning will make a substantial contribution to the debate about quality evaluation. Maybe the **quality evaluation** needs to adopt **research methodologies like this research**.

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Thank you!