

Evidence Papers on Women in Economics: A Case Study of Ghana

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Ghana

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Abbreviations

GTEC – Ghana Tertiary Education Commission

h-index – Hirsch index

HoD – Head of department

RePEc – Research Papers in Economics

STEM – Science, Technology, Engineering and Mathematics

1. Executive Summary

This case study on Ghana provides both a database and an in-depth assessment of women's representation in economics across the full range of academic tiers. Specifically, this study collated data that compares women's representation in the economics disciplines at the undergraduate and postgraduate (master's and doctoral) levels, and at the faculty level in universities that offer economics programs in Ghana.

To analyze the patterns in student enrolment we rely on administrative data, sourced primarily from the Ghana Tertiary Education Commission (GTEC) database and from some universities. To minimize the effect that inconsistent representation of universities and their courses can have on the analysis of enrolment numbers, because of gaps in the GTEC database, the analysis was conducted using two samples. The first is a sample comprising four public universities (Kwame Nkrumah University of Science and Technology, University of Cape Coast, University for Development Studies and University of Ghana) and two private universities (Central University and Presbyterian University, Ghana) that have fairly consistent representation in the GTEC database for the period 2012/2013 to 2022/2023. The universities excluded from this sample have less than five years of data in the GTEC database. Despite the omission of some universities, the analyses conducted using this first sample still provide a fair representation and we do not believe the inclusion of those universities will change the pattern of the findings significantly. For instance, enrolment in undergraduate economics in the six selected universities comprised 65 percent of the total enrolment in the 2022/2023 academic year.

We use information from GTEC, Research Papers in Economics (RePEc) platform, Google Scholar and CVs requested from faculty and obtained from the internet to provide insightful analysis about the journey and activities of women economists in academia.

We define economics students as students in departments of economics and students studying sub-themes in economics such as agricultural economics, development economics, mathematical economics, energy economics etc. that are housed in other departments or schools. The student-level analysis involved comparisons of women's representation in economics across all tiers of the discipline to that of their male counterparts. A second strand of the analysis involves a comparison

of female student representation in economics with female representation in STEM subjects and allied (i.e. development studies and land economy) subjects.

Regarding the faculty level analysis, we analyse both women's representation, research and publication activities, and their research impact. In addition, we analyse women's leadership activities and services to their respective universities. Again, all these are carried out in comparison to men in the discipline.

Female enrolment numbers in economics are lower at the master's level compared to the undergraduate level, and are lower at the PhD level compared to the master's level. The female share of enrolment in undergraduate economics is consistently higher than at the graduate levels and has a positive trend. Four observations can be made from the trends and patterns in female shares in enrolment in economics. The first is that there has not been a sustained increase in female enrolment shares. The shares tend to hover within a narrow band particularly at the undergraduate and master's levels. Second, the female share of enrolment in economics is higher at the undergraduate level than at the postgraduate levels. This is also evident in the Development Studies and STEM subjects but to a smaller extent than in economics. Third, female shares in subjects that have content that overlaps with economics are higher and have registered more significant increases over the period than has economics. Finally, women's representation in economics tends to be higher than in the STEM subjects at the undergraduate and master's levels.

Women's representation at the faculty level is even lower than their representation among students. Evidence from GTEC's database for the six universities with fairly consistent data shows an average share of about 16% for all universities. Even though women's share in private universities is lower than this average, we noticed some progress (between 2020 and 2023). Women faculty are generally in lower ranks (typically as lecturers/researchers) compared to men (who mostly occupy senior lecturer/researcher positions). This is not unexpected because men have typically been in this space for relatively longer periods and so it is more likely that they would have obtained the requirements for promotion than women. The average number of publications by women (research productivity) is about half that of their male counterparts, which may suggest that women are less productive than men. However, this does not take into consideration the length of time spent in academia. In terms of research impact, the average citation for a woman is less than that half of the figure for a man and the h-index and i10-index for female authors are on

average between 53–68 percent those of their male counterparts. Women are less likely than men to be in leadership positions and when they are, they are less likely to be heads of departments or deans of faculties etc.

The improvement in women's enrolment will require the introduction of measures to increase their entry into undergraduate economics programs. This must be complemented by measures to increase the proportion that complete the four-year program in economics. Enrolment onto a master's program is in most cases determined by having a first degree in economics so that understanding what determines activity in the undergraduate pipeline is critical. Social norms and expectations, such as pressures on women to get married and have children become increasingly important for women when making the decision whether to pursue postgraduate study. However, women in other disciplines also face similar social pressures so that this cannot explain the differences in the trends in female enrolment shares across disciplines.

An increase in the number of women enrolled in postgraduate programs is necessary if their representation among faculty is to be increased. Policy measures to remove barriers to women's progression up the academic ladder, their research productivity and representation in leadership positions, should also include reducing the effect that social reproduction responsibilities may have on their professional lives.

1.1. Introduction

Women's under-representation in academic economics is evident in almost all countries (see for example Jonung and Ståhlberg, 2008; May, 2008; and Ginther and Kahn, 2004), and arguably Ghana is no exception. Meanwhile, the economics discipline is widely recognized and offered in several of Ghana's institutions (i.e., from the secondary to the tertiary levels). In Ghana, not much attention has been paid to the gender imbalance in the study of economics compared to other commitments demonstrated by the Ministry of Education, Ghana Education Service, and other stakeholders in the promotion of the study of Science, Technology, Engineering and Mathematics (STEM).

This case study on Ghana provides both a database and an in-depth assessment of women's representation in economics across the full range of academic tiers. Specifically, this study has collated data that compares women's representation in the economics disciplines at the undergraduate and postgraduate (master's and doctoral) levels, and at the faculty level in universities that offer economics programs in Ghana. It is one of seven country studies across Africa, Asia and Latin America commissioned by the International Economics Association project on Women in Leadership in Economics Initiative (IEA-WE).¹

1.2. Economics Education in Ghana

The first graduating class in economics was from the University of Ghana in 1953 and it comprised seven men (University of Ghana n.d.). The University of Ghana which was established in 1948 was the only university with a Department of Economics until 1964 when one was established at the University of Cape Coast. The number of universities with Departments of Economics or offering courses in economics rose from two in the 1950s to four by the end of the 1970s and eight by the end of the 1990s. In the first decade of the 21st century 13 universities offering economics courses were established, bringing the total number to 21. An additional six universities were established between 2010 and 2019 and four were established in 2020 (Figure 1). In the 2022/2023

¹ More information on the project can be obtained from <https://www.ica-world.org/women-in-leadership-in-economics-initiative-ica-we/>

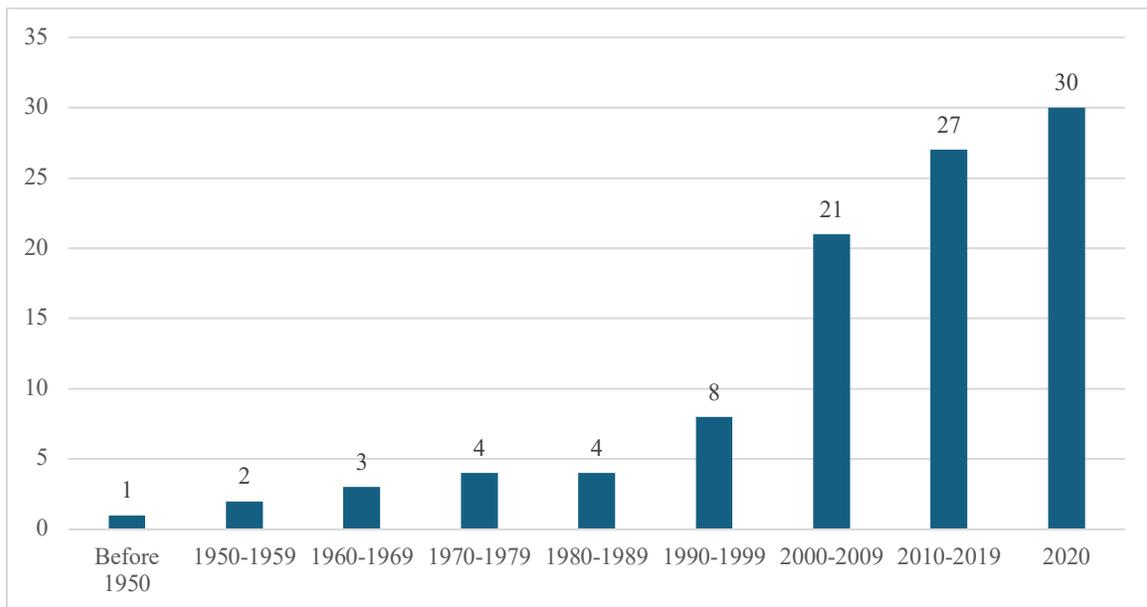
academic year, Ghana had 30 universities that either had Departments of Economics or that offered courses in economics, usually in the business schools.

1.2.1. Types of Institutions

Universities in Ghana may be classified into three categories: public, chartered private, and private. The public universities are state-owned. The private universities are privately owned but affiliated to a public university and the chartered private universities are privately and independently owned and are not affiliated to a public university

Private universities (18) outnumber public universities (12). Seven of the 22 universities established in the period 2000 to 2020 that offer economics programs or courses are public. Fifteen of the private universities were established after 1999 and are responsible for the surge in the number of universities established during that period. However, enrolment in private universities is much lower than in public universities. For example, in 2019 enrolment in the Arts and Social Sciences stood at 47,424 in public universities and was 9,420 in private universities. Enrolment in business studies in private universities (27,883), remains lower than in public universities (50,743), but is much higher than in the Arts and Social Sciences. Thus, private universities are less likely than public universities to have Departments of Economics. However, they do offer courses in economics in their business schools and employ faculty with postgraduate degrees in economics.

Figure 1: Number of Universities that Offer Economics Courses by Year of Establishment



Source: GTEC database

2. Data and Methods

Given that our objective is to analyze women's representation in economics across the different tiers of the discipline, multiple data sources are utilized. Therefore, this section describes how the data for both the student and faculty were gathered for the analysis carried out in this study.

2.1. Student level

All student level analyses rely on administrative data, sourced primarily from the Ghana Tertiary Education Commission (GTEC) database and from some universities. GTEC is a state agency established in 2020 under the Education Regulatory Bodies Act (Act 1023), with a mandate that includes *inter alia* coordination, regulation and accreditation of tertiary education in Ghana.²

The GTEC database has some gaps. Even though the data received from GTEC span from 2012/2013 to 2022/2023 academic years, no data was provided for the 2013/14 and 2014/15

² GTEC was created out of the merging of the National Council for Tertiary Education and the National Accreditation Board

academic years. A second shortcoming is the inconsistent representation of universities in the database. Enrolment data for an economics program or course in a university is sometimes not provided for each year. The missing observations could be because the course is not offered in that year or because the university did not provide the information. A third difficulty with the data is that some institutions in some years provided GTEC with data aggregated at the faculty or college-level. It is therefore impossible to extract department-level data. In one instance, the researchers requested and obtained the department-level data directly from the university. A fourth limitation is the absence of consistent data on the number of graduates from a program. The study therefore analyses enrolment data only.

To minimise the effect that inconsistent representation of universities and their courses can have on the analysis of enrolment numbers, the analysis was conducted using two samples. The first is a sample comprising four public universities (Kwame Nkrumah University of Science and Technology, University of Cape Coast, University for Development Studies and University of Ghana) and two private universities (Central University and Presbyterian University, Ghana) that have fairly consistent representation in the GTEC database for the period 2012/2013 to 2022/2023. The universities excluded from this sample have less than five years of data in the GTEC database. Despite the omission of some universities, the analyses conducted using this first sample still provide a fair representation and we do not believe the inclusion of those universities will change the pattern of the findings significantly. For instance, enrolment in undergraduate economics in the six selected universities comprised 65 percent of the total enrolment in the 2022/2023 academic year. In addition, this sample also included the three largest and oldest universities (University of Ghana; Kwame Nkrumah University of Science and Technology; and University of Cape Coast) that also have the largest economics-related department/school (both in terms of student and faculty numbers) and dominate the top 25% institutions and economists in Ghana rankings by RePEc³. The second sample comprises 27 of the 30 universities that offer courses or programs in economics for which the analysis will be conducted for the period 2019/2020 to 2022/2023. Of the 27 universities, 13 are public, 10 are private and the remaining 4 are chartered private⁴. Private universities are re-classified into one category for analysis.

³ <https://ideas.repec.org/top/top.ghana.html> Accessed on June 9, 2025.

⁴ The private universities are privately owned but affiliated to a public university; and the chartered private universities are privately and independently owned and are not affiliated to a public university.

We define economics students as students in departments of economics and students studying sub-themes in economics such as agricultural economics, development economics, mathematical economics, energy economics etc. that are housed in other departments or schools. Development Studies and Land Economy are chosen for comparison with economics because some of their content contains economics topics. Regarding the STEM subjects, we were guided by the International Standard Classification of Education (UNESCO, 2015), which is used by GTEC to collate data for three STEM programs – namely, Natural Sciences, Mathematics and Statistics; Information and Communication Technologies; and Engineering, Manufacturing and Construction. We compare enrolment in economics with total enrolment in the STEM subjects because data for some universities is aggregated at faculty-level or college-level. The different universities run a variety of programs in economics which have been listed in the Appendix.

2.2. Faculty level

We relied on multiple sources to provide insightful analysis about the journey and activities of women economists in academia.

First, we used data from GTEC to show women's representation in the discipline. Although the information obtained was limited in terms of the number of observations and institutions, we considered this as a starting point in our analysis. Second, we gathered sex disaggregated information on publications and related activities from the Research Papers in Economics (RePEc) platform. Third, we gathered information regarding faculties' research activities from the Google Scholar platform. Finally, based on the compiled faculty list and their contact information, we sent out emails requesting CVs of faculty across several universities (including the three oldest and largest universities).⁵ This was useful in gathering relevant background information (education, rank, leadership roles in university, etc.) to be able to provide some more insightful analysis about women economists in academia. We complemented the information obtained from the CVs with information from profiles published on the websites of the respective universities.

⁵ These are the Kwame Nkrumah University of Science and Technology, the University of Cape Coast and the University of Ghana.

2.3. Student level

The analyses carried out are descriptive. They involve comparisons of women's representation in economics across all tiers of the discipline to that of their male counterparts. Specifically, with the student-level analysis, we compare female's representation in both undergraduate and graduate (master's and PhD) programs in economics to their male counterparts. A second strand of the analysis involves a comparison of female student representation in economics with female representation in STEM subjects and allied (i.e. development studies and land economy) subjects. This comparison is conducted to determine whether the patterns in economics are peculiar to the discipline.

With the faculty level analysis, we analyze both women's representation, research and publication activities, and their research impact. In addition, we analyze women's leadership activities and services to their respective universities. Again, all these are carried out in comparison to men in the discipline.

3. Findings

3.1. Enrolment in Undergraduate Programs and Courses

3.1.1. Evidence for the Period 2012/2013-2022/2023

Enrolment in Economics

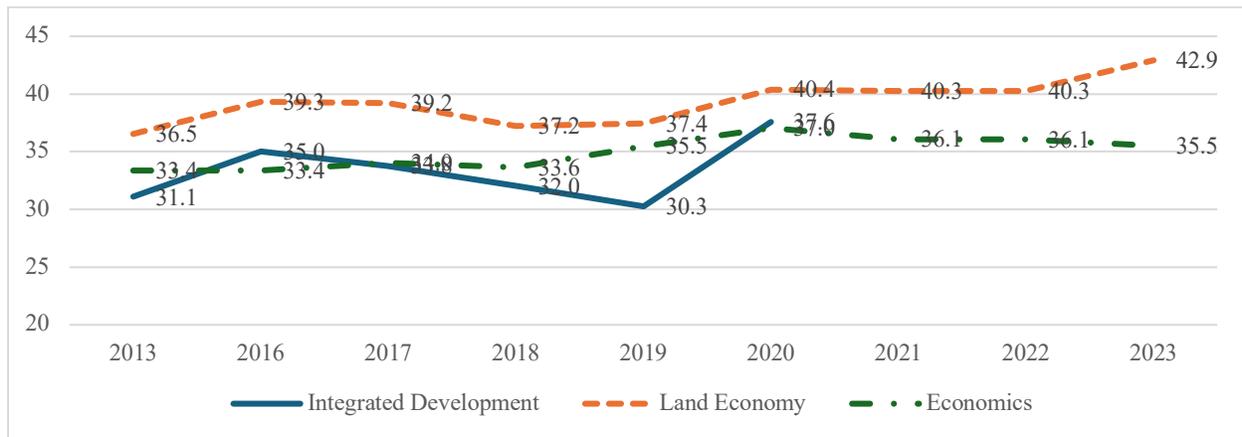
Enrolment of women in undergraduate economics in the six universities increased by about 31 percent between 2012/2013 and 2022/2023. Enrolment numbers for both women and men increased, declined and then increased during the intervening years (Table 1). The female share of enrolment in economics also fluctuated during this period. It increased from 33.4 percent after 2012/2013 peaking in the 2019/2020 academic year at 37 percent and then declining to 35.5 percent in 2022/2023 (Figure 2). There was a 2.1 percentage point increase in women's share of enrolment in 2022/23 compared to 2012/2013.

Table 1: Enrolment in Undergraduate Economics and Allied Subjects in Six Selected Universities

Economics				Development Studies			Land Economy		
Year	Men	Women	Female	Men	Women	Female	Men	Women	Female
			Share (%)			Share (%)			Share (%)
2012/2013	3235	1622	33.4	2633	1188	31.1	455	262	36.5
2015/2016	2338	1171	33.4	1329	716	35.0	417	270	39.3
2016/2017	2016	1040	34.0	1482	755	33.8	445	287	39.2
2017/2018	3314	1679	33.6	900	424	32.0	501	297	37.2
2018/2019	2549	1402	35.5	371	161	30.3	495	296	37.4
2019/2020	2795	1645	37.0	897	540	37.6	586	397	40.4
2020/2021	3542	1999	36.1				589	397	40.3
2021/2022	3578	2017	36.1				589	397	40.3
2022/2023	3854	2121	35.5				399	300	42.9

Source: GTEC

Figure 2: Female Share (%) of Enrolment in Undergraduate Economics and Allied Subjects, 2012/2013-2022/2023



Source: GTEC

Comparing Enrolment in Economics to Allied Subjects and STEM Subjects

Enrolment in Development Studies and Land Economy is lower than in economics (Table 1). This is largely because economics courses are offered across several universities whilst Development

Studies and Land Economy are not. Although the numbers enrolled in Land Economy are much lower than in economics, women’s share of the total enrolled students in the subject is consistently higher than in economics. The female share of enrolment in Development Studies on the other hand has tended to be lower than the female share of enrolment in economics (Figure 2).

In addition to comparing women’s representation in economics to allied subjects, a comparison is made between women’s representation in economics and the STEM subjects. The comparison with enrolment in STEM subjects is restricted to public universities because of the limited information on STEM enrolment in the two private universities in this sample. Enrolment of women in STEM subjects was more than three times higher in 2022/2023 compared to 2012/2013 (Table 2). This trend compares favorably with an almost doubling of male enrolment. Women’s enrolment shares in economics are higher than their shares in the STEM subjects in all the years of available data (Table 2). However, the gap in the difference in the enrolment rates has narrowed because of the more rapid increase in the female share of enrolment in STEM subjects.

Table 2: Comparing Enrolment in STEM subjects to Economics in Public Universities

	Numbers Enrolled		Female Share (%)	
	Men	Women	STEM	Economics
2013	9720	2238	18.7	33.4
2016	8124	1665	17.0	33.4
2017	10815	3133	22.5	34.0
2023	19009	6900	26.2	35.5

Source: GTEC

Enrolment in Public and Private Universities

There are more students enrolled in economics in public universities than there are in private universities (Table 3). There has been a decline in the numbers enrolled in economics courses in private universities since 2012/2013, thus reducing their share of total enrolment. Female enrolment shares in private universities exceeded those of public universities between 2015/2016 and 2017/2018 academic years. However, the rate of decline in enrolment in economics courses in

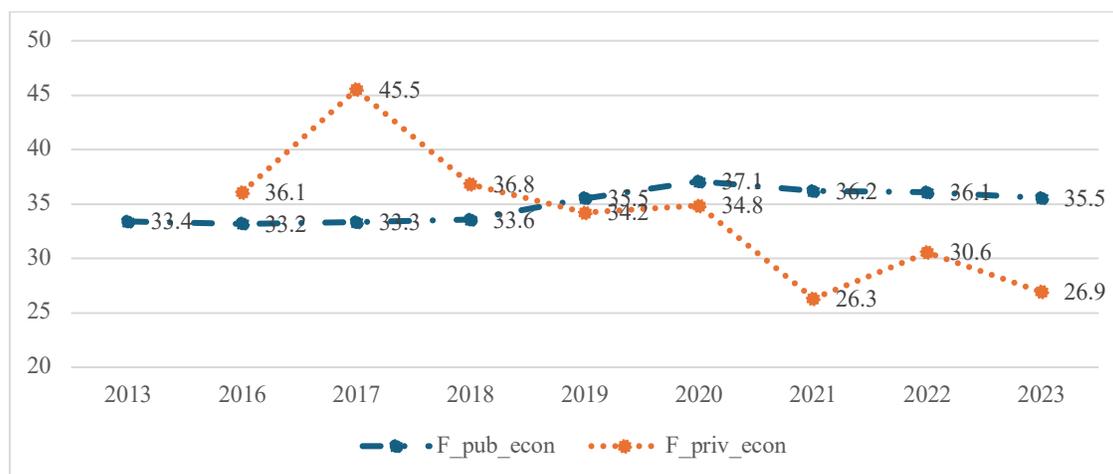
private universities has been faster for women than men since 2019/2020 academic so that female enrolment shares in private universities fell below those of public universities.

Table 3: Enrolment in Economics in Public and Private Universities, 2012/2013 – 2022/2023

Year	Public			Private		
	Men	Women	Female Share (%)	Men	Women	Female Share (%)
2012/2013	3235	1622	33.4			
2015/2016	2182	1083	33.2	156	88	36.1
2016/2017	1919	959	33.3	97	81	45.5
2017/2018	3247	1640	33.6	67	39	36.8
2018/2019	2499	1376	35.5	50	26	34.2
2019/2020	2752	1622	37.1	43	23	34.8
2020/2021	3500	1984	36.2	42	15	26.3
2021/2022	3553	2006	36.1	25	11	30.6
2022/2023	3835	2114	35.5	19	7	26.9

Source: GTEC

Figure 3: Female Share (%) of Undergraduate Enrolment in Economics by Type of Institution



Source: GTEC

3.1.2. Evidence for the Period 2019/2020 – 2022/2023

Enrolment in Economics

In this section evidence is presented on trends in enrolment for the period 2019/2020 and 2022/2023 using data from 27 universities. Total enrolment in economics increased from 5,893 in 2019/2020 to 8,727 in 2022/2023 because of rising numbers of female and male enrolment (Table 4). The share of women in total enrolment was between 33 percent and 34 percent over the period (Figure 4).

Comparing Enrolment in Economics to Allied Subjects and STEM Subjects

The female share of enrolment in economics is lower than the shares in both integrated development studies and land economy (Table 4). The data for integrated development studies does not include University for Development Studies after 2019/2020 academic year. The female share rises to 55.5 percent when the University for Development Studies is excluded which is still higher than the female shares in economics. It is, however, higher than the average female enrolment shares in the STEM subjects.

Table 4: Enrolment and Female Share of Enrolment in Economics, Allied and STEM Subjects, 2019/2020-2022/2023

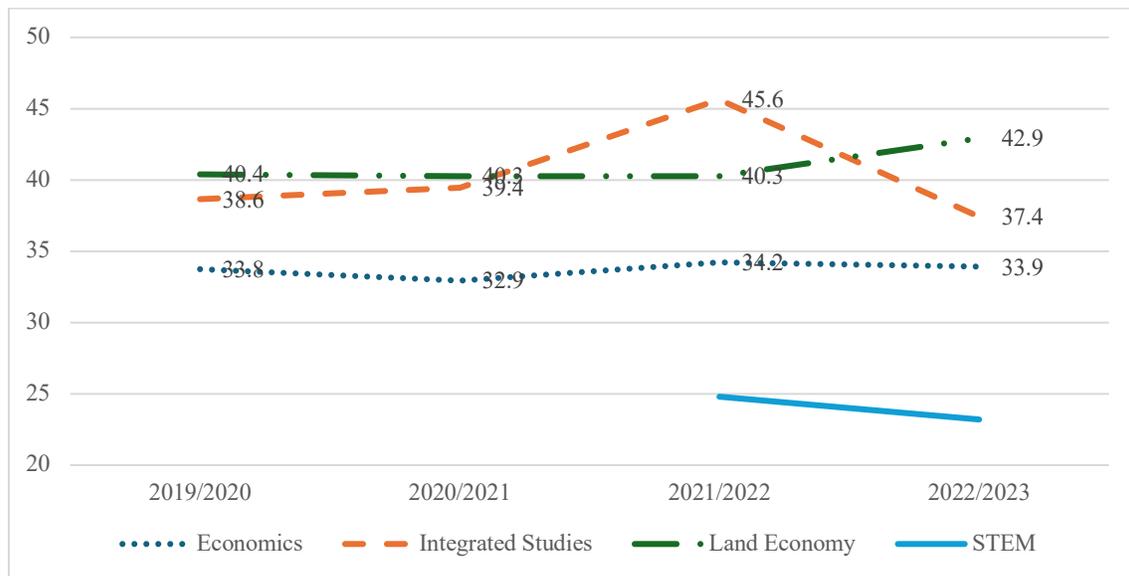
Economics	Men	Women	Female Share (%)
2019/2020	3904	1989	33.8
2020/2021	5176	2542	32.9
2021/2022	5192	2701	34.2
2022/2023	5865	3009	33.9
Integrated Development Studies ¹			
2019/2020	937	590	38.6
2020/2021	43	28	39.4
2021/2022	81	68	45.6
2022/2023	97	58	37.4

Land Economy			
2019/2020	586	397	40.4
2020/2021	589	397	40.3
2021/2022	589	397	40.3
2022/2023	399	300	42.9
STEM			
2019/2020	42462	14832	25.9
2021/2022	50469	16671	24.8
2022/2023	43450	13100	23.2

Notes: Data for subsequent years does not include University for Development Studies

Source: GTEC

Figure 4: Female Shares (%) in Enrolment in Undergraduate Economics, Allied and STEM subjects, 2019/2020 – 2022/2023



Source: GTEC

Enrolment in Economics in Public and Private Universities

Enrolment in economics in private universities is less than 10 percent of total enrolment (Table 4). It was as low as 2.5 percent in 2021/2022. The increase in female and male enrolment in public universities is not played out in private universities (Table 5).

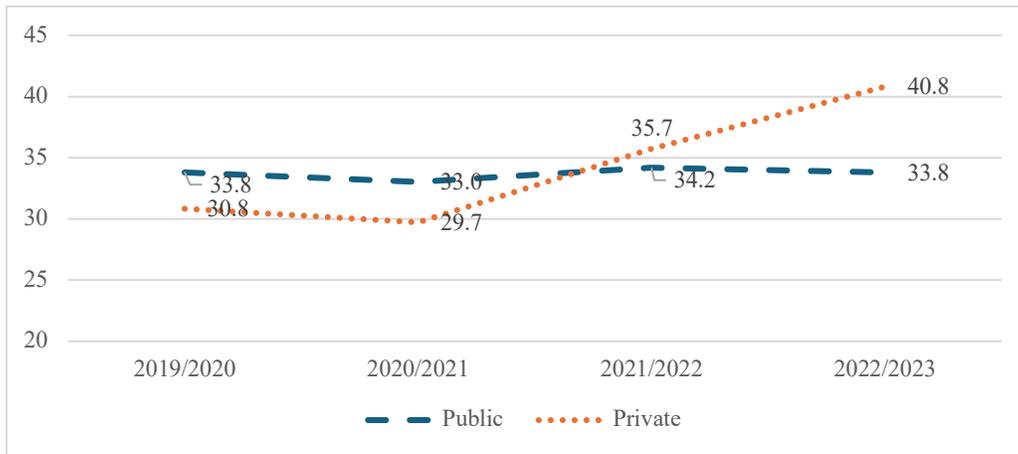
The share of women in total enrolment in public universities was stable over the four-year period (Figure 5). This contrasts with the trend in private universities where the share declined in the 2020/2021 academic year and rose in the subsequent years. Despite the lower enrolment numbers in private universities, the female share of students was higher than the share in public universities in 2021/2022 and 2022/2023 (Figure 5).

Table 5: Enrolment in Undergraduate Economics in Public and Private Universities, 2019/2020-2022/2023

Year	Public			Private		
	Women	Men	Female Share (%)	Women	Men	Female Share (%)
2019/2020	1944	3803	33.8	45	101	30.8
2020/2021	2479	5027	33.0	63	149	29.7
2021/2022	2646	5093	34.2	55	99	35.7
2022/2023	2949	5778	33.8	60	87	40.8

Source: GTEC

Figure 5: Female Shares (%) in Undergraduate Economics in Public and Private Universities



Source: GTEC

3.2. Enrolment in Master’s Programs

3.2.1. Evidence for the Period 2012/2013-2022/2023

Enrolment in Economics

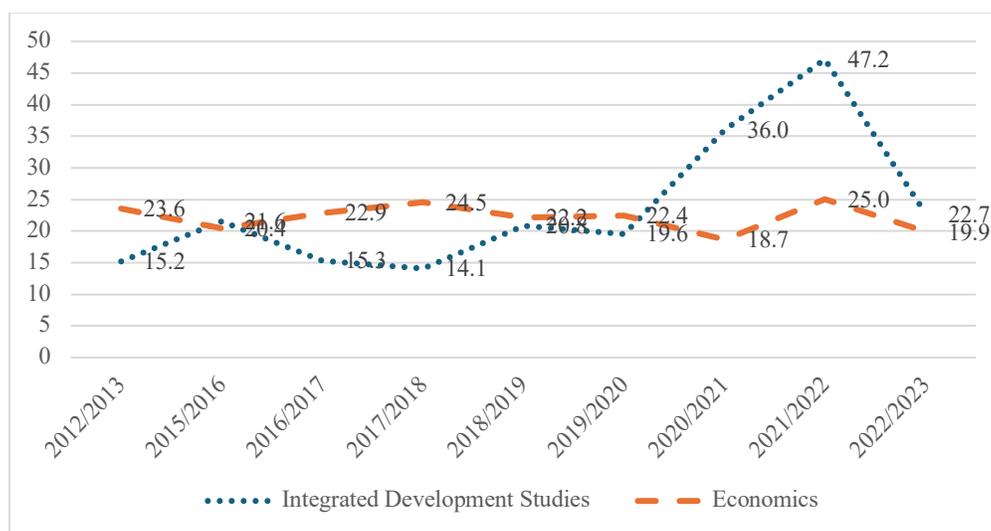
Enrolment numbers of both female and male students in economics are much lower at the master’s level compared to the undergraduate level. One reason for this is the much lower number of universities that offer master’s programs in economics. Although larger in 2022/2023 than in 2012/2013, there has been considerable variation in enrolment at the master’s level for both women and men (Table 6). The share of women in master’s programs ranged between about 19 percent and 25% between 2012/2013 and 2022/2023, declining to about 4 percentage points below the 2012/2013 share in 2022/2023.

Table 6: Enrolment in Master's Programs in Economics and Integrated Development Studies, 2012/2013 – 2022/2023

Year	Economics			Integrated Development Studies		
	Men	Women	Female Share (%)	Men	Women	Female Share (%)
2012/2013	211	65	23.6	106	19	15.2
2015/2016	288	74	20.4	120	33	21.6
2016/2017	246	73	22.9	94	17	15.3
2017/2018	317	103	24.5	61	10	14.1
2018/2019	207	59	22.2	19	5	20.8
2019/2020	273	79	22.4	37	9	19.6
2020/2021	257	59	18.7	16	9	36.0
2021/2022	383	128	25.0	28	25	47.2
2022/2023	330	82	19.9	17	5	22.7

Source: GTEC

Figure 6: Female Share (%) of Enrolment in Economics and Integrated Development Studies



Source: GTEC

Comparing Enrolment in Economics to Allied Subjects and STEM Subjects

The female share of enrolment in master's programs in economics fluctuated considerably during the period. Whereas there is a slight downward trend in female share of enrolment in economics, there is a distinct upward trend in the female share of enrolment in Development Studies (Figure 6). The female share of enrolment in the allied subject (Development Studies) has exceeded the share in economics since 2020/2021 (Figure 6).

The discussion on STEM enrolment is based on data of the public universities because there is no data on enrolment in master's programs in STEM in the two private universities in the sample. Except for 2022/2023, female enrolment shares in economics are higher than shares in STEM subjects. An examination of the trends over time reveals a different perspective. In the four years for which there is data on STEM enrolment, there was an increase in the female share of enrolment in the STEM subjects (Table 7). This contrasts with the female share in economics which was 3.7 percentage points lower in 2022/2023 compared to 2012/2013.

Table 7: Master's Enrolment in STEM subjects and Economics in Public Universities 2012/2013 – 2022/2023

	STEM Enrolment		Female Share (%)	
	Men	Women	STEM	Economics
2012/2013	522	81	13.4	23.6
2015/2016	384	74	16.2	20.4
2016/2017	419	95	18.5	22.9
2022/2023	449	119	21.0	19.9

Source: GTEC

Enrolment in Public and Private Universities

Private universities do not tend to run postgraduate programs. In 2019 out of the 27,628 students enrolled in postgraduate programs in the country, only 11.1 percent were enrolled in private tertiary institutions (National Accreditation Board, 2020). They do not tend to run postgraduate programs

in economics. There is only information on postgraduate enrolment in economics in the two private universities in this sample for the period 2020/2021 to 2022/2023 academic years.

In the three years for which there is comparable data, enrolment in economics programs in public universities exceeded that in private universities. In 2020/2021, no women were enrolled in the master's programs in the private universities and only one woman was enrolled in each of the subsequent years. The number of women enrolled in public universities more than doubled between 2020/2021 and 2021/2022 and then fell by 36 percent in 2022/2023 (Table 7). Female shares in public universities exceed those in private universities (Table 82). The female share of private university enrolment increased in the three-year period, largely because of the fall in the number of male enrolments in 2022/2023.

Table 8: Enrolment in Master's Programs Economics in Public and Private Universities, 2012/2013-2022/2023

Year	Public Universities			Private Universities		
	Men	Women	Female Share (%)	Men	Women	Female Share (%)
2012/2013	211	65	23.6			
2015/2016	288	74	20.4			
2016/2017	246	73	22.9			
2017/2018	317	103	24.5			
2018/2019	207	59	22.2			
2019/2020	273	79	22.4			
2020/2021	254	59	18.8	3	0	0.0
2021/2022	374	127	25.3	9	1	10.0
2022/2023	323	81	20.0	7	1	12.5

Source: GTEC

3.2.2. Evidence for the Period 2019/2020 – 2022/2023

In this section the discussion is based on the larger data set comprising 27 universities but covers a shorter time frame. Female shares in enrolment in the public universities fluctuated in the four-year period. They ranged between 17.5 percent and 25 percent (Table 9).

Although the numbers enrolled in the Development Studies program is lower than those in economics, there is greater representation of women (Table 9).

Table 9: Enrolment in Master’s Programs in Economics and Integrated Development Studies, 2019/2020 – 2022/2023

Year	Economics			Integrated Development Studies		
	Men	Women	Female Share (%)	Men	Women	Female Share
2019/2020	262	79	22.8	37	9	19.6
2020/2021	297	63	17.5	16	9	36.0
2021/2022	442	147	25.0	28	25	47.2
2022/2023	301	83	21.6	17	5	22.7

Source: GTEC

Almost all the students enrolled in master’s programs in this larger sample are in public universities. Expanding the sample to include more universities does not significantly increase the share of women enrolled in economics programs in public universities (Table 9). It does, however, capture the additional private universities that run master’s programs in economics. However, the enrolment numbers remain small. The share of women enrolled in private universities exceeded female shares in public universities in 2019/2020 and 2020/2021. However, only three women were enrolled in each year and the number declined to one in the following years (Table 10).

Table 10: Enrolment in Master’s Programs in Public and Private Universities, 2019/2020 – 2022/2023

Year	Public			Private		
	Men	Women	Female Share (%)	Men	Women	Female Share (%)
2019/2020	260	76	22.6	2	3	60.0
2020/2021	289	60	17.2	8	3	27.3
2021/2022	442	146	24.8	9	1	10.0
2022/2023	294	82	21.8	7	1	12.5

Source: GTEC

3.3. Enrolment in PhD programs

3.3.1. Evidence for the Period 2012/2013-2022/2023⁶

The number of women and men enrolled in PhD programs in economics has increased over time (Table 11). As expected, the numbers enrolled in PhD programs are smaller than those enrolled in master’s programs in economics. This is because fewer universities offer PhD programs in economics compared to master’s and undergraduate programs. None of the two private universities in the sample run PhD programs in economics, STEM and the allied subjects.

Women’s share of enrolment in economics over the period ranged between 8.3 percent and 28.1 percent. There has been a fluctuating downward trend since 2017 when the female share peaked at 28.1 percent (Figure 7). This is largely because the increase in the number of women enrolled in economics stalled after 2019 whilst male enrolment increased.

The absolute number of women enrolled in PhD economics programs is higher than the numbers enrolled in Development Studies and in Land Economy (Table 11). However, women’s enrolment in economics stalled after 2019/2020 whilst it increased strongly after 2019/2020 in Development Studies. The increase in female enrolment in Development Studies was much larger than the

⁶ There is no analysis of patterns using the larger sample because the universities that run PhD programs in the GTEC database are captured in the smaller sample.

increase in male enrolment in this later period. These trends in female enrolment in both subjects explain why the female share of enrolment in economics was higher than the shares in Development Studies prior to 2018 and has fallen behind since 2020/2021.

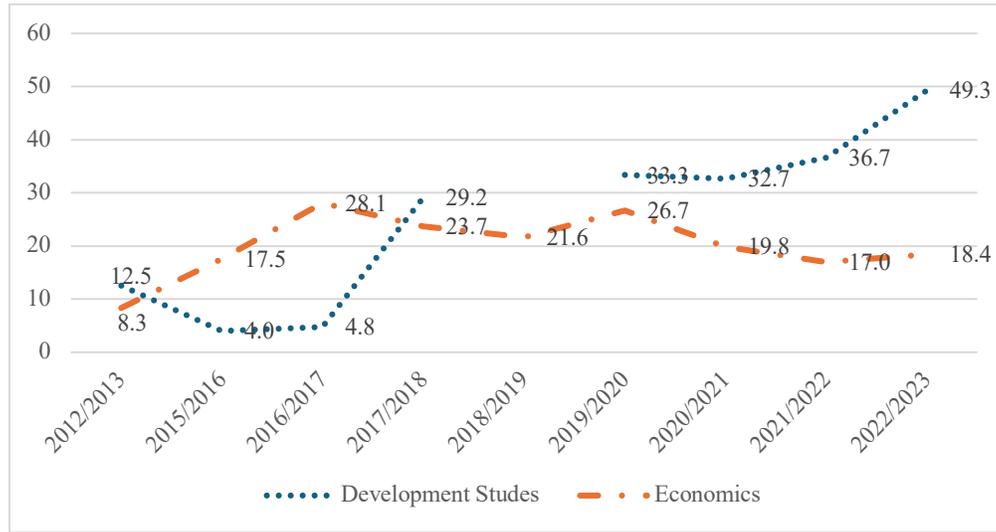
The female share of students in PhD economics has tended to be quite similar to their share in the STEM subjects (Table 12).

Table 11: Enrolment in PhD Programs in Public Universities, 2012/2013-2022/2023

Year	Economics		Female share (%)	Land Economy		Female share (%)	Development Studies		Female share (%)
	Men	Women		Men	Women		Men	Women	
2012/2013	22	2	8.3	1	1	50.0	7	1	12.5
2015/2016	47	10	17.5	3	0	0.0	24	1	4.0
2016/2017	41	16	28.1	2	0	0.0	20	1	4.8
2017/2018	58	18	23.7				17	7	29.2
2018/2019	76	21	21.6						
2019/2020	66	24	26.7				14	7	33.3
2020/2021	97	24	19.8	2	0	0.0	33	16	32.7
2021/2022	122	25	17.0	2	0	0.0	38	22	36.7
2022/2023	93	21	18.4	2	0	0.0	36	35	49.3

Source: GTEC

Figure 7: Female Share (%) of PhD Students, 2012/2013-2022/2023



Source: GTEC

Table 12: Female shares (%) in PhD Economics and STEM subjects

Year	Economics		Female share (%)	STEM Subjects		Female share (%)
	Men	Women		Men	Women	
2012/2013	22	2	8.3	114	13	10.2
2015/2016	47	10	17.5	148	31	17.3
2016/2017	41	16	28.1	168	37	18.0
2022/2023	93	21	18.4	167	38	18.5

Source: GTEC

3.4. A Comparative Perspective

The discussion in this section will rely on data from the sample of six universities for the period 2012/2013 to 2022/2023. This is because the patterns and trends in the female share of enrolment in economics, allied subjects and STEM subjects are not significantly from the patterns that emerge

from the larger sample of universities but over the shorter time period. One exception, however, is the trends in private universities. The difference between the two samples is largely because the larger sample contains more private universities. We note that the female shares that have been calculated will have a margin of error because even among the five universities, enrolment data was not consistently provided for each programme in each year. We are confident, however, that we have captured the trends.

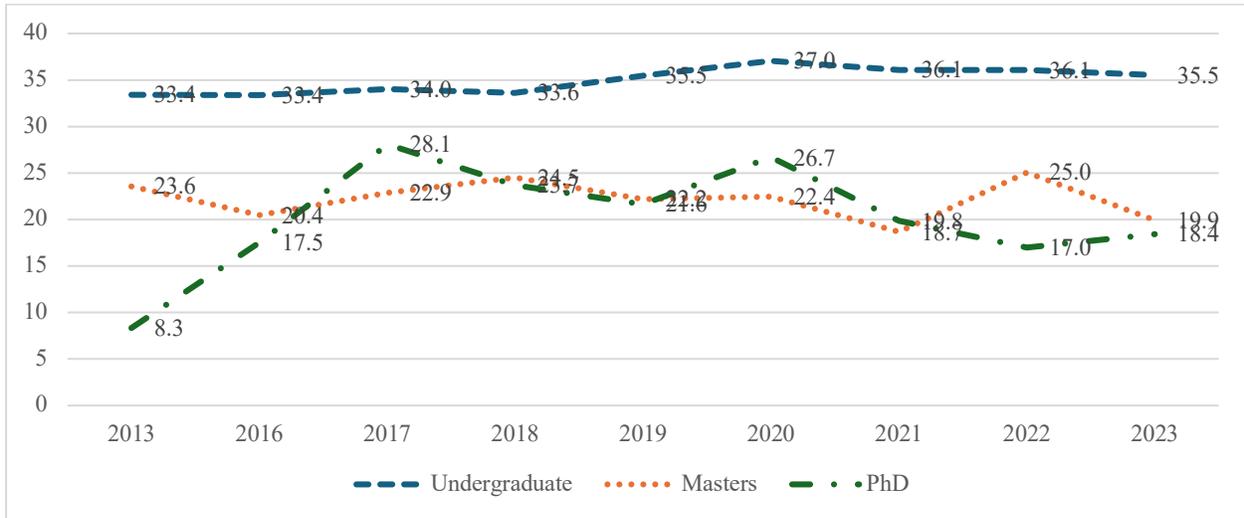
The number of women enrolled in undergraduate and graduate economics courses and programs increased over the ten-year period to 2022/2023. Progress has not been linear because declines and increases in enrolment have been registered in the intervening years.

Female enrolment numbers in economics are lower at the master's level compared to the undergraduate level and are lower at the PhD level compared to the master's level. This is largely because a small number of universities offer postgraduate programs compared to undergraduate programs. Despite this, there is a larger proportionate increase in women's enrolment in PhD programs, despite the lower absolute enrolment numbers, compared to enrolments in undergraduate and master's programs. The number of women enrolled in PhD programs in 2022/2023 was 10 times larger than in 2012/2013. Increases in enrolments at the master's and undergraduate levels are 30 percent and 26 percent respectively.

The female share of enrolment in undergraduate economics is consistently higher than at the graduate levels and has a positive trend (Figure 8). At the undergraduate level, the female share of enrolment was 3.2 percentage point higher in 2012/2013 compared to 2022/2023. The trend in the female share of enrolment at the master's level is negative. In 2022/2023 it was 3.6 percentage points lower compared to 2012/2013. In contrast the female share of PhD enrolment has trended upwards increasing by 5.9 percentage points in the ten-year period. There has been a lot of churning in the intervening years at the different levels with female shares rising in some years and declining in others. No clear picture emerges in the comparison of female enrolment shares at

the master’s and PhD level (Figure 8). In 2022/2023, for example, the female share at the master’s level was higher than at the PhD level. However, in 2021 it was the reverse.

Figure 8: Female Enrolment Shares at the Undergraduate, Master’s and PhD Levels



Source: Compiled from GTEC data

A comparison of undergraduate female enrolment shares in economics with the shares in Land Economy finds that the latter was continually higher than shares in economics and exceeded 40 percent after 2019/2020 academic year. Undergraduate female enrolment shares in economics remained below 40 percent in the period under review. The female share of enrolments in STEM at both the undergraduate and master’s levels are lower than in economics.

At both the master’s and PhD levels even though female enrolment shares in Development Studies were lower than the shares in economics in 2012/2013, they soon overtook economics, crossing the 40 percent mark in some years. However, the female share of enrolment in economics is higher than the shares in STEM subjects at the undergraduate and master’s levels and is almost at par in all but one year for which comparable data is available at the PhD level.

3.5. Faculty: Women Economists in Academia in Ghana

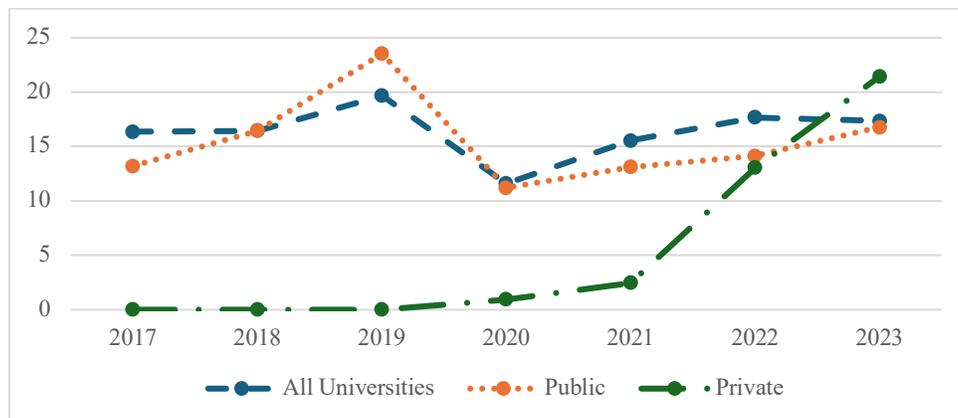
In this section, we analyze female economists in academia in terms of their representation, key background characteristics (highest education obtained and current rank), research and publication activities, and their leadership or service to their universities. These are compared to their male counterparts. Given the multiple data sources explored for this analysis, the presentation of the findings is based on the source of data.

3.5.1. Women’s representation and rank over time: evidence from GTEC database

Using the sample of six universities from the GTEC database revealed that on average, only about 16 percent of faculty in economics-related programs are women. The trend for all universities was positive with a one-percentage point increase between 2017 and 2018. The years 2019 and 2020 departed from this trend with shares rising to 20 percent in 2019 and declining to 12 percent in 2020 before rising back to 16 percent in 2021.

The disaggregation by the type of university showed different trends for public and private institutions. That is, while the trend in public universities mirrors that of all universities, for private universities, we notice a consistent rise in the share of female faculty between 2020 and 2023 – see Figure 9 (Appendix 2 provides the number of observations).

Figure 9: The share of women faculty in Economics-related programs (%)



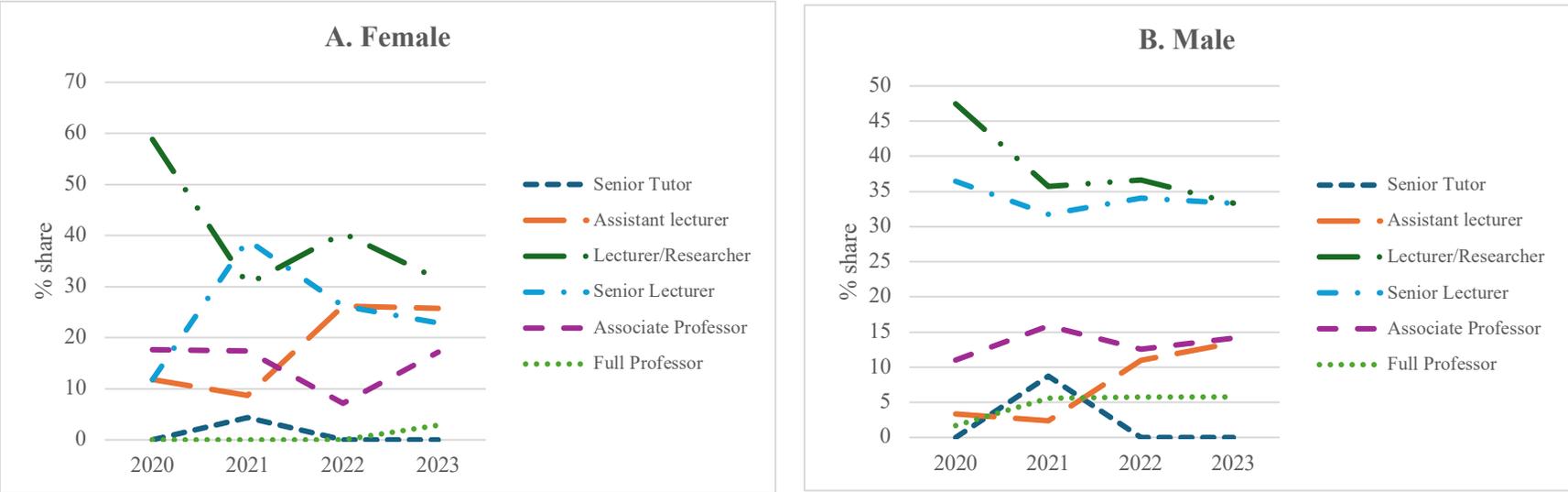
Source: GTEC, 2017–2023

In Figure 10 (panel A and B) we present the trend in faculty rank for women and men respectively for the period 2020 to 2023. While we acknowledge the relatively short period (due to data constraints), there are a few observations worth noting. First, the decline in the share of women in the lecturer position suggests that women are climbing the rank ladder. Some have attained the professorial level in the period under review. This is a good sign for women's advancement in the discipline. For instance, prior to 2023, the data showed no female full professor. But in 2023, there was one full female full professor. Also, even though the share of women at the rank of associate professor declined (marginally) from 17.6% (2020) to 17.1% (2023) (Figure 10, panel A), the absolute numbers show a rise from 3 to 6 within the referenced period (see Appendix 3). Obviously, the decline in the percentage share is attributable to the higher number of women faculty in 2023 (i.e., from 17 (2020) to 35 (2023)). Second, from Figure 10 (panel A), there is a general rising trend in women in the rank of assistant lecturers. Perusing the data further indicated this was mostly driven by the private institutions. Arguably, this trend was most likely driven by new in-take of faculty in those institutions given that unlike the public institutions whose entry qualification is a doctoral degree, the private institutions accept master's degree which is typically associated with a starting rank of an assistant lecturer. In the rare instance where faculty are hired as assistant lecturers in public universities, they are required to obtain a doctorate within a contractually determined period. Again, we see the rising trend in assistant lecturer position as a positive sign given that women (who are most likely without a doctoral degree) have the opportunity to consider developing a career in the discipline. Finally, the trend in female faculty ranked as senior lecturers/researchers rather shows a more declining (both in absolute numbers and percentage shares) behavior under the reviewed period. Several reasons may account for this – e.g., progression (to the associate professorial rank), exit from academia (e.g., to a new job), or even retirement. Since the data did not come with unique identifiers, we are unable to track the movement of these faculty members to provide an exact explanation for this trend.

Meanwhile, panel B of Figure 10 (i.e., for men) shows progression among male faculty, although at a more general rising trend for nearly all the ranks. For instance, there is a rising trend of male faculty at the professorial (both associate and full) and senior lecturer/researcher (except a marginal decline in 2023) ranks. There is also a rising trend of male assistant lecturers (which

appears rising faster than their female counterparts) – likely driven by the same reason (i.e., intake in private universities) stated for their female counterparts.

Figure 10: Rank of Faculty by gender over time

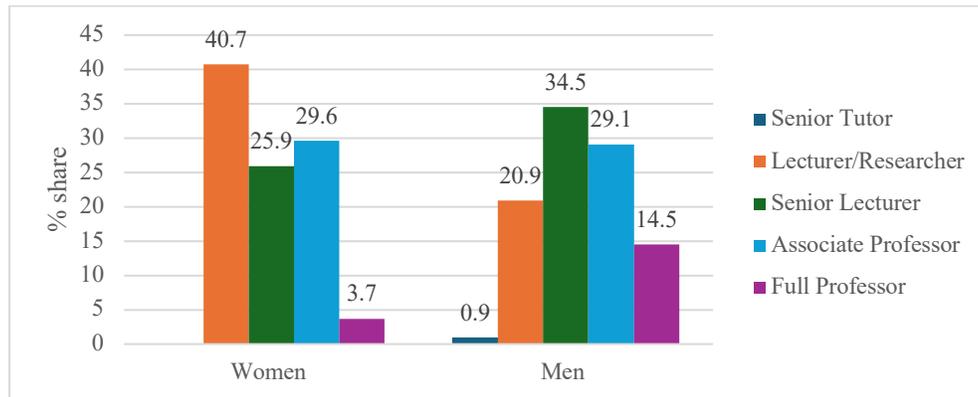


Source: GTEC, 2020–2023

3.5.2. Women’s current rank (in 2023) and highest level of education: evidence from institutions’ websites and CVs

We used information from institutions’ websites and the CVs that we solicited from faculty to obtain information on the current (as of 2023) rank of 137 faculty members made up of 27 women and 110 men across 21 relevant economics-related departments/schools in eight universities. As expected, the male faculty dominated all ranks (see Appendix 4 for absolute figures). Most female faculty (40.7%) were ranked in lecturer/researcher positions, while their male counterparts were mostly senior lecturers/researchers (34.5%) (Figure 11). The share of female faculty generally declined along the rank ladder (except the associate professorial level). Consistent with the GTEC database, there was only one female full professor (representing 3.7%) in economics compared to the 16 (14.5%) recorded for the male faculty (Figure 11).

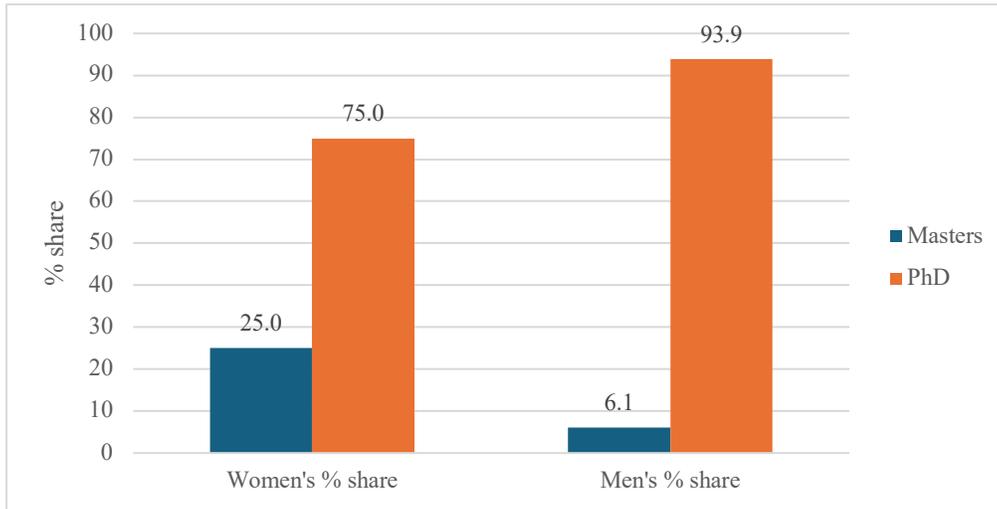
Figure 11: Current rank of Faculty in Economics-related programs (%)



Source: Authors’ compilation from institutions’ websites and faculties’ CVs

About 75 percent of female faculty have a doctoral (or PhD) degree, whilst almost all male faculty (94%), have one. The remaining 25 percent of female faculty in economics-related programs have master’s degree (see Figure 12 and Appendix 5 for absolute numbers). The high incidence of doctoral degree holders among faculty can be partly explained by the policy reform that required public universities to employ only PhD degree holders into the lecturer/researcher position which the Ministry of Education required universities to enforce post-2017.

Figure 12: Highest education of faculty in Economics-related programs



Source: Authors' compilation from institutions' websites and faculties' CVs

3.5.3. Women's Research and Publication Activities: evidence from Research Papers in Economics (RePEc)

Given the importance of RePEc with regard to bibliographic services for the economics and related disciplines (Zimmermann, 2013), our first analysis of women's research and publication activities relied on data from RePEc. We, however, precede the research and publication analysis with women's representation and author rankings.

Women's representation and ranking

In all, we obtained data on 89 faculty members across fourteen departments/schools in eight universities from RePEc's database. Of this, there were 11 women, representing 12.4 percent and 78 (87.6%) men. The representation of women was skewed given that they are from seven (out of the fourteen) departments/schools in four (out of the eight) universities. Indeed, even in terms of universities, 7 out of the 11 women are from one university. This is indicative of the skewness of female economics-related faculty in Ghana. RePEc ranks the top 25 percent authors considering all publication years and then publication in the last ten years separately. RePEc ranks each registered individual in its Author Service with works listed in the profile using several indicators

(e.g., number of works authored, citations counts, journal page counts, popularity on reporting RePEc services, co-authorship networks), and an adjusted⁷ harmonic mean of the rank is computed from the 31 different ranking outputs which show how differently authors perform (see Zimmermann, 2013 for detailed information about the methodology). The top 25 percent authors in Ghana, across all publication years consisted of 35 authors. Of this, only 2 women (5.71%) made it to the list. With regard to the top 25 percent authors relative to the last decade, there are 3 women. Interestingly, all the women in both rankings are from the same institution. Even though only authors registered with RePEc are counted and only works listed on RePEc and claimed by registered authors as theirs are counted and used in the rankings⁸, women's representation is poor. However, considering that the ranking relative to the last decade shows an improvement (albeit marginal) in women's representation, we are cautiously optimistic and see it as a positive signal for a potentially increased female presence at the high level. While we are hopeful, we also acknowledge the need for strategic interventions to improve women's presence in the field.

Women's research productivity

Publications

In universities in Ghana, research publications are key for promotion and renewal of appointment of teaching staff, although there are differences across institutions in terms of the number of publications needed to move to the next level of the academic/professional rankings. Aside from that, having more women's research and publications on the one hand brings to the forefront women's work in the discipline and on the other hand contributes to broadening and deepening theoretical and analytical frameworks.

We obtained publication information for 74 authors on RePEc, of whom 7 (9.45%) were women. The total publications for all women are 118 while that of men are 1,356. Therefore, the average total number of publications (made up of journal articles, book chapters, edited books and working/discussion papers) for women is about 17 compared to 20 for men. Even though

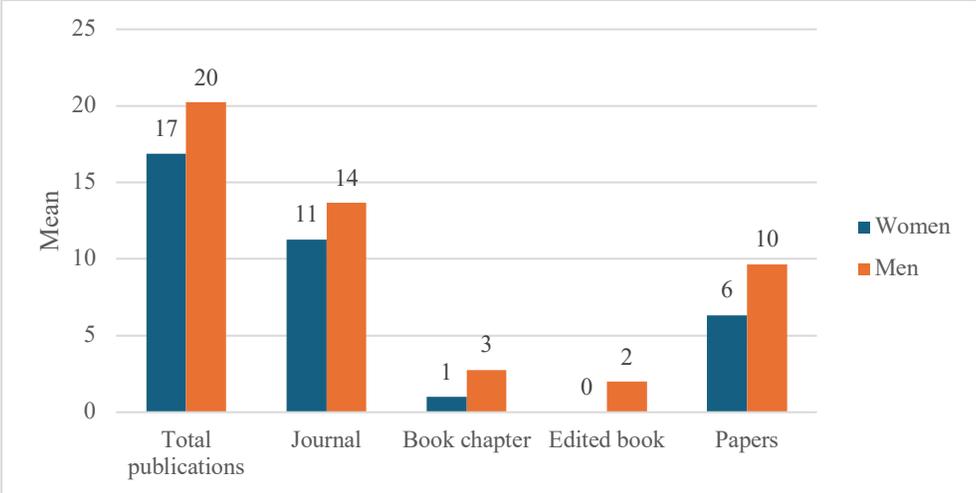
⁷ Done by adding a constant of one to each rank

⁸ <https://ideas.repec.org/top/top.ghana.html#authors>

comparing the absolute number of publications indicated a wider gender gap; by adjusting for the number of authors, there is a relatively smaller gender gap.

Next, we looked at the types of publications across gender and found that most publications of both women and men are journal articles. Again, the gender gaps across the different types of publications are generally small (except in the case of edited books where no woman had authored a book based on RePEc’s database) – see Figure 13.

Figure 13: Average publications by gender and type of publication



Source: RePEc, January 2025

Women’s Research impact

Citation, h-index and i10-index

Three of the most informative metrics used for measuring the impact of research are the number of citations, Hirsch index (or h-index) and i10-index. The citation data for RePEc rankings are provided by the CitEc project, which runs on hardware provided by the Valencian Economic Research Institute Zimmermann (2013)⁹. It is important to note that while self-citations are not

⁹ For detailed information about the process see Zimmermann (2013).

counted, citations to other versions of an article are (Zimmermann, 2013). We obtained citations for 6 of the 7 female authors with records on publications (and similarly for 64 out of the 67 male authors). The average citation for women was about 142 compared to 178 for men.

The Hirsch index (h-index) is an aggregate measure of a researcher's productivity (number of publications) and impact (number of citations) so that "a scientist has an index h if h of his/her N_p papers have at least h citations each, and the other $(N_p - h)$ papers have no more than h citations each", and since the h-index index "puts more emphasis on an important body of work, instead of a few very highly cited papers, by giving higher score to those who have many cited papers" (Zimmermann, 2013; p260), it provides insights into authors' relevance in terms of publications and how widely (s)he is cited. We obtained the h-index values for 5 of the 7 female authors with records on publications (and similarly for 53 out of the 67 male authors). The average h-index for the female authors was 3.20 while that of their male counterparts was 5.17. This means that on average, among female authors, 3 publications had received at least 3 citations. The *i10-index*, also a widely used metric to provide additional information about a researcher's impact, shows the number of papers that have received at least 10 citations¹⁰. Our analysis revealed a rather more apparent gender gap, where the average i10-index for female authors was 0.8 compared to 3.91 for male authors, suggesting that on average, about 1 female-authored publication had been cited at least 10 times compared to about 4 male-authored publications.

While these provide a good basis for comparing women's research impact to that of their male counterparts, it is also important to make the point that since the registration to the RePEc platform is purely voluntary, and the number of registered authors is few, inferences about research productivity and impact need to be made with caution.

3.5.4. Women's Research and Publication Activities: evidence from Google Scholar

Google Scholar appears to be a more popular platform for not only economic-related researchers in Ghana but for most disciplines. Therefore, based on the list of economics-related faculty already created, we obtained similar information (as presented using RePEc) about more faculty members which arguably may be more representative for the Ghanaian case. Also, given the extensive

¹⁰ https://guides.library.umass.edu/Research_Impact/Author_Level_Metrics#s-lg-box-26550386

coverage, we were able to conduct more detailed analyses such as cohort analysis (which is explained later).

Women's representation

Information on 128 economic-related researchers was obtained from Google Scholar consisting of 21 (16.4%) women and 107 (83.3%) men. Clearly, women's representation on this platform almost doubled compared to what is recorded on the RePEc platform. Also, unlike the RePEc platform, the women here are more widely spread across (6 out of the 8) universities and departments/schools (11 out of 20) represented.

Women's research productivity

Publications¹¹

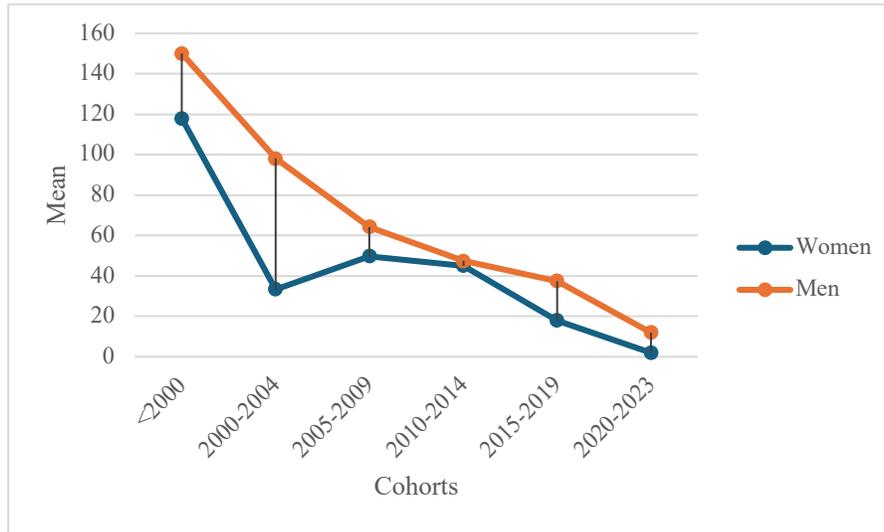
We obtained publication information for all 128 registered authors on Google Scholar. The total publication (journal articles, book chapters, edited books, working/discussion papers, and reports) for women is 763, which implies an average of about 36 publications per woman. The total publications for men on the other hand is 6,867. This means the average number of publications for a man is 64, representing almost twice that of a woman.

We also looked at research productivity by cohorts by defining cohorts based on the year of first publication. From the data, there were only 9 authors (1 woman and 8 men) whose first publication was before the year 2000. Therefore, the first cohort was made up of this group of authors (which we label as <2000). The rest of the cohorts were created for 5-year intervals (i.e., 2000–2004 (2 women and 17 men); 2005–2009 (4 women and 19 men); 2010–2014 (9 women and 47 men); 2015–2019 (5 women and 14 men); and 2020–2023¹² (1 woman and 2 men)). Even though we did not have the age of researchers to be able to compare productivity of young and old researchers by gender, the objective of creating these cohorts is to provide a similar analysis. Although this may not be the best approach, it nonetheless gives some insight into women's productivity over time, and how they compare to their male counterparts (Figure 14).

¹¹ Kindly note that we are still working to disaggregate publications

¹² The latest date for the year of first publication was 2023.

Figure 14: Average number of publications by gender and cohorts



Source: Authors' compilation from Google Scholar

From Figure 14, we observe a general declining trend in average total publications by cohort for both women and men but perhaps a point worth noting is the gender gap by cohort. Specifically, the gap is narrower for the cohorts since 2005 compared to the cohorts before 2005. This is another positive signal of women's advancement in economics-related research activities and publication.

Women's Research impact

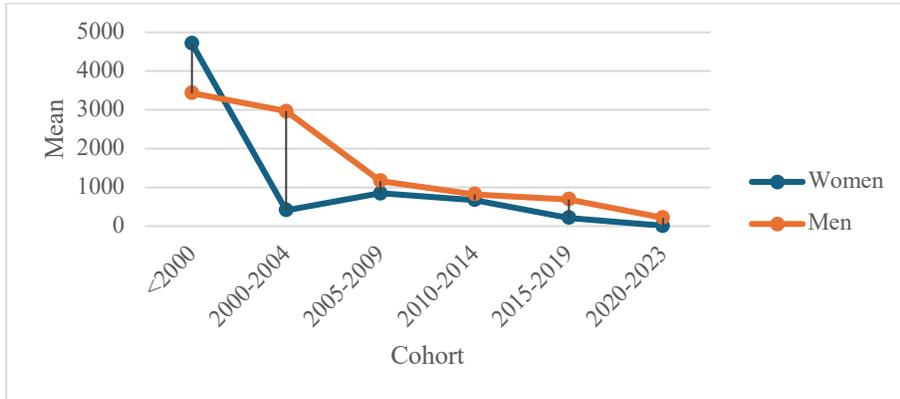
Citation, h-index and i10-index

Google Scholar provides a summary of research impact for all years and since 2020 separately. We took advantage of the annual data on citations provided by Google Scholar to further compare the annual research impact for women and men for the period 2020 to 2025¹³. This breakdown is particularly useful to provide insights into researchers' recent impact. The average citation for a woman (considering all years) was 541, and this was just about 39% of the average citation (1,393) for a man. The highest number of citations for a female researcher in economics-related research was 4,711, which was only about one-fourth that (17,559) for her male counterpart. The average number of citations for a woman (since 2020) was about 449, which was about 48% of what was

¹³2025 data are as of June 6, 2025.

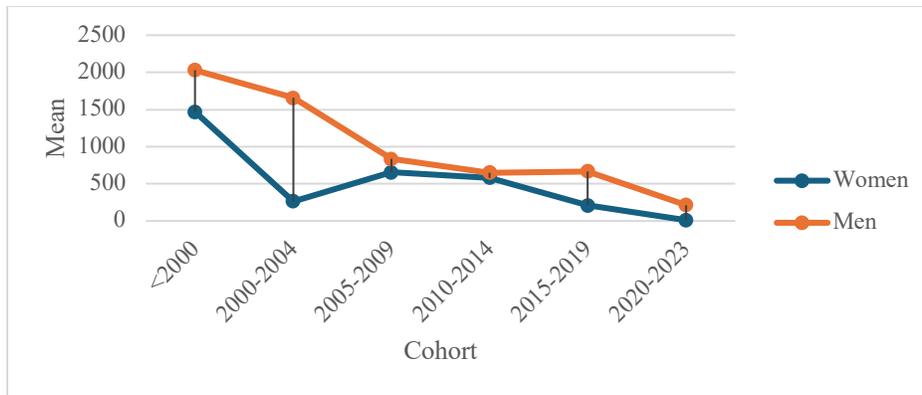
recorded (931) for a man. While simply comparing the citations across all women and men showed a big gender gap in research impact, comparing across cohorts provides a glimpse of hope given the declining trend in gender gap (Figures 15 and 16).

Figure 15: Average number of citations by gender and cohort (All years)



Source: Authors' compilation from Google Scholar

Figure 16: Average number of citations by gender and cohort (Since 2020)

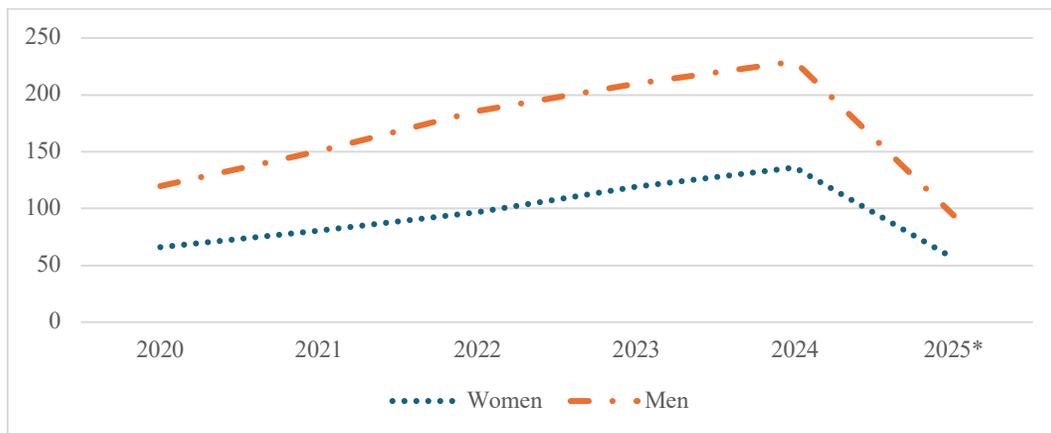


Source: Authors' compilation from Google Scholar

Focusing on the period 2020-2024 we find that for both women and men; there was a positive growth in the average number of citations (Figures 17). While male-authored studies recorded

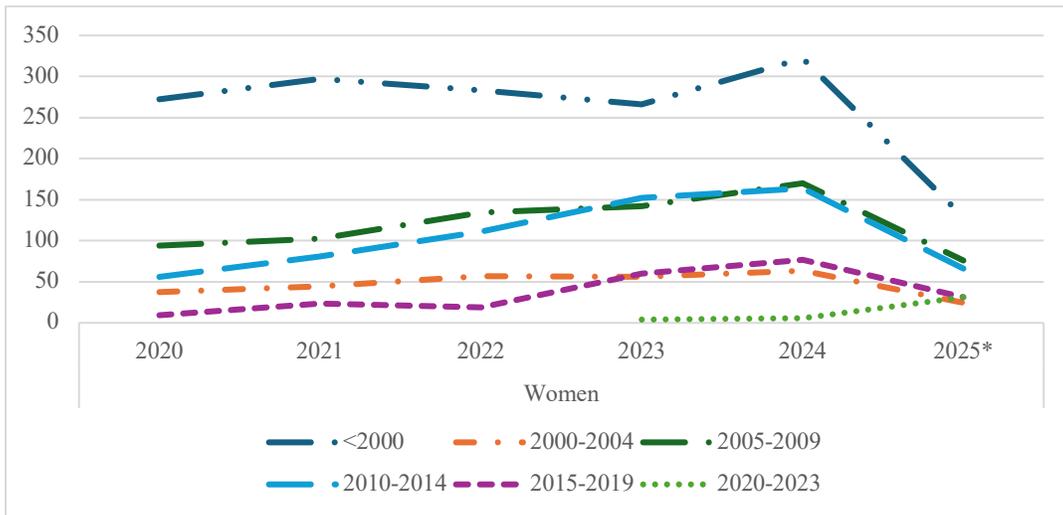
higher growth in citations between 2021 and 2022 (i.e., 26% and 24% respectively compared to 22% and 20% respectively for women), the opposite is observed between 2023 and 2024. That is, the citations for female-authored studies grew by 23% (2023) and 14% (2024) compared to the 13% and 9% respectively for their male counterparts. In terms of the annual citations by cohort, the trend is mixed among women. The oldest cohort (<2000) has the highest annual average number of citations for the reviewed period but in contrast to other cohorts, it only has one person. The 2005–2009 cohort has the second highest annual average number of citations in most years. But in general, among women, some of the younger cohorts have higher average annual number of citations than the older cohorts. For instance, the 2000–2004 cohort has lower annual average number of citations than do the 2005–2009 and 2015–2019 cohorts (Figure 18). However, among men, the general observation is that the average number of citations is highest among those who have spent more time as academics (relative to younger cohorts). The 2015-2019 cohort is an exception to this trend. The growth in its annual average number of citations is faster than that of the 2005–2009 and 2010–2014 cohorts such that in 2024 its average number of citations exceeded those of the previous two cohorts (Figure 19).

Figure 17: Annual average citation by gender



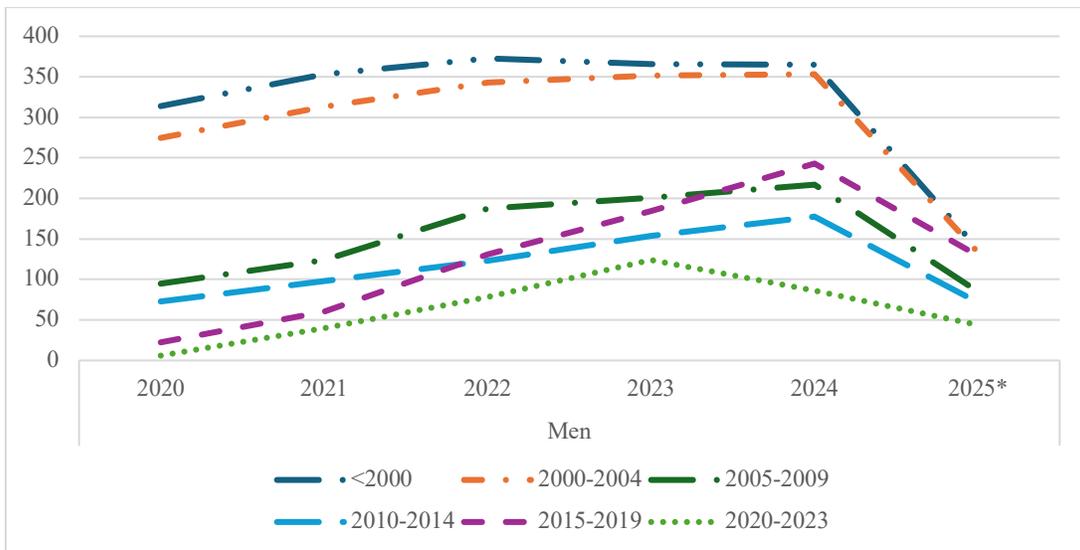
Source: Authors' compilation from Google Scholar

Figure 18: Annual average citations among women by cohort



Source: Authors' compilation from Google Scholar

Figure 19: Annual average citations among men by cohort

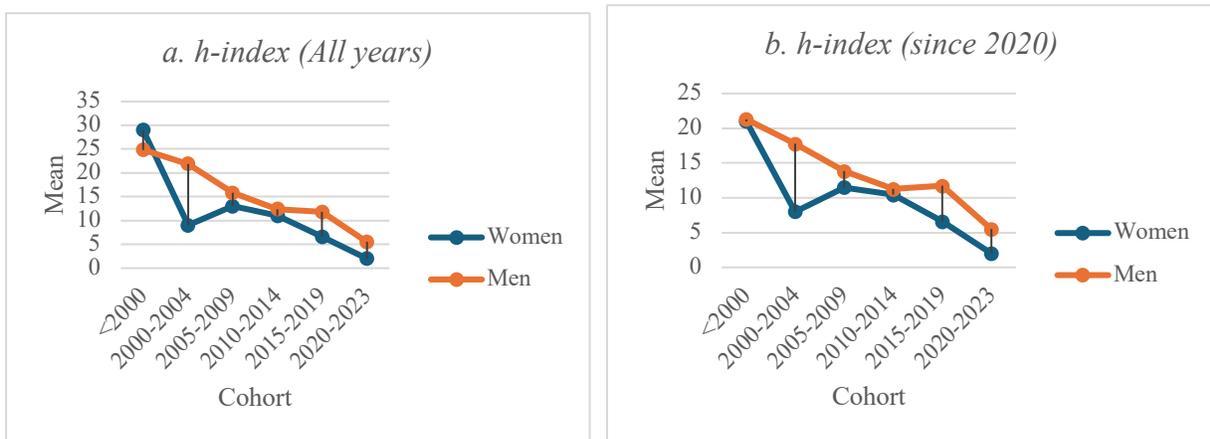


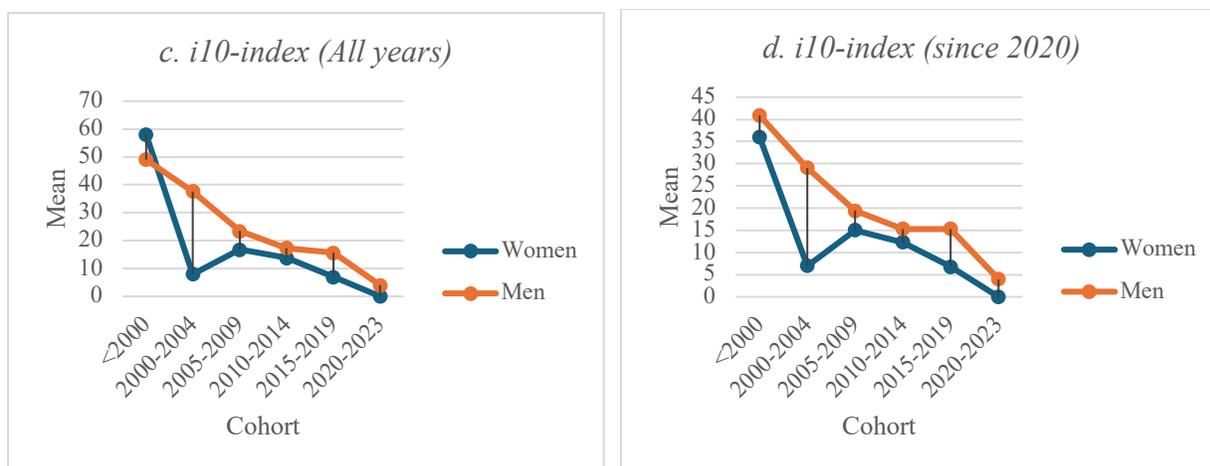
Source: Authors' compilation from Google Scholar

The average lifetime (i.e., considering all years) h-index for a female economics-related author registered on Google Scholar was 9.7; meaning, on average, about 10 female-authored publications

had each been cited at least 10 times. This was about 64 percent of the h-index of her male counterpart whose h-index was estimated at 15.1 on average. Using the i10-index revealed a relatively larger gender gap given that the average i10-index for a female author is 11.5 compared to 23.31 for a male author (across all years). Even though there were some marginal improvements in both indices since 2020, the general picture did not change significantly. The average h-index for a female author was 9.1, compared to 13.4 for a male author – i.e., about 68 percent of the average h-index for a male author. The average i10-index for a female author was 10.4, which was about 53 percent of her male counterpart (19.7). Once again, there is a glimpse of hope in the cohort analyses for both indices whether considering all years or focusing on developments since 2020. Our hope stems from the declining gender gap in the i10-index by cohort analysis which arguably suggests that women are catching up with men in terms their research impact. These are shown in panels *a* to *d* of Figure 20.

Figure 20: Research impact by gender and cohorts (All years and since 2020)





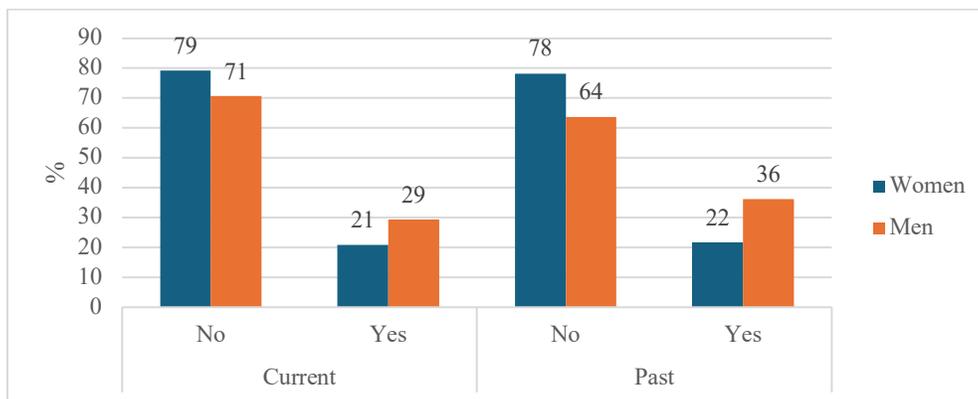
Source: Authors' compilation from Google Scholar

3.5.5. Women's leadership roles and service to their university: evidence from institutions' websites and CVs

Women economists in leadership positions (such as head of department/school) within universities have important implications for the advancement of the economics discipline both in terms of shaping policies that can benefit women faculty, and as a source of inspiration for female students in economics. In the case of the former, younger female faculty could easily tap into networks created by women economists in leadership positions for collaborative research projects and exposure to both domestic and international communities, which they can leverage upon to develop themselves in the economics profession. In addition, policies could be shaped or redefined in ways that could help women combine their academic/professional work efficiently with their domestic and care responsibilities at home (e.g., working remotely when the need arises). For students, seeing women who have navigated through a discipline that is quantitative (and “masculine”) and occupying leadership roles could be an inspiration and encourage female students to pursue the subject to the highest level, and perhaps take up a profession in the discipline. We relied on information from faculty profiles on their respective universities' websites and their CVs. The following leadership portfolios were considered: head of department (HoD), dean of a school, director of a center/institute, provost of a college, and chair or membership of university-wide committee/board (e.g., academic board or disciplinary committee). We looked at current and past leadership positions held separately. In all, we obtained the relevant data for 99

faculty members, made up of 24 women (24%) and 75 men (76%) and Figure 20 presents our findings.

Figure 21: Past and current leadership position held by faculty by gender (%)



Source: Authors' compilation from institutions' websites and faculties' CVs

From Figure 21, the proportion of women in leadership positions (both current and in the past) has generally remained constant (see Appendix 6 for absolute numbers). As expected, there is a gender gap regarding leadership positions held currently and in the past. For instance, only 2 in every 10 women (21%) currently hold a leadership position, and a similar proportion (22%) was observed for those who had held a leadership position in the past. For men, this was slightly higher – i.e., 29 percent are currently in leadership position; and 36 percent previously held a leadership position. Another observation made is that the most common leadership portfolio among women is membership of academic boards, which one becomes a member of by virtue of being at the professorial level. Only 3 women had at least ever (i.e., either currently or in the past) headed a department/school/centre/institute. The positions held by men on the other hand spread across a wider range (HoD, dean/director of a school/centre/institute, and membership of boards/committees).

4. Discussion and Conclusion

The discussion on the findings on women's enrolment will be based on the sample used to track women's participation in economics since 2012/2013. This is because trends in the patterns in the larger sample of countries over the shorter period do not yield significantly different results.

The number of women enrolled in economics in universities at the undergraduate and graduate levels was higher in 2022/2023 than was the case 10 years earlier. The progress has not been linear because declines and increases in total enrolment have been registered in the intervening years. The growth in women's enrolment numbers has occurred within the context of rising enrollment numbers. The changes in total enrolment numbers may sometimes be because universities may want to control the growth in student numbers. At the postgraduate level, courses may not be offered if the number of applications does not reach a critical minimum. Challenges with accreditation may result in a program not being mounted until such time as accreditation has been restored.

Enrolment of women (and men) in economics is lower at the master's level compared to the undergraduate level and is lower at the PhD level compared to the master's level. This may be explained on the one hand by supply-side factors, such as the capacity of universities to offer postgraduate programs and by demand-side factors on the other. Focusing on the supply side, not all universities offer master's programs and the number that offer PhD programs is even smaller.

Four observations can be made from the trends and patterns in female shares in enrolment in economics. The first is that there has not been a sustained increase in female enrolment shares. The shares tend to hover within a narrow band particularly at the undergraduate and master's levels. Second, the female share of enrolment in economics is higher at the undergraduate level than at the postgraduate levels. This is also evident in the Development Studies and STEM subjects but to a smaller extent than in economics. Third, female shares in subjects that have content that overlaps with economics are higher and have registered more significant increases over the period than has economics. Finally, women's representation in economics tends to be higher than in the STEM subjects at the undergraduate and master's levels.

If representation of female students in economics is to reach the 50 percent mark, then it is necessary to understand why women choose to study economics at the undergraduate level. The analysis of female representation in the first year of undergraduate study provides some insights into this. Estimates of female share of first year enrolment in a few universities finds that it hovers

around 35 percent and, in some instances, can be as low as 16 percent or as high as 44 percent. The numbers enrolled in the first year are the outcome of the number of women who applied to study undergraduate economics and any selection criteria that departments of economics may have. An analysis of selectivity criteria is important because some criteria, such as having offered and passed elective mathematics at the Senior Secondary Certificate Examination may inadvertently discriminate against women. Another important issue is whether women are more likely than men to drop out of the economics program. Evidence from two public and one private university suggests not. The ratio of numbers enrolled in the final year to numbers enrolled in the first year was calculated for the universities and it was found that in some years the ratio was higher for women than it was for men. Women were not more likely to drop out of the economics program than men. This preliminary evidence suggests that policies to increase the female share of enrolment in economics must include making the study of economics attractive to girls at the pre-tertiary level so that they choose to study economics at the university. Once enrolled onto the economics program they may not be more likely than their male colleagues to drop the subject. Enrolment onto a master's program is in most cases determined by having a first degree in economics so that understanding what determines activity in the undergraduate pipeline is critical. Social norms and expectations, such as pressures on women to get married and have children become increasingly important for women when making the decision whether to pursue postgraduate study. However, women in other disciplines also face similar social pressures so that this cannot explain the differences in the trends in female enrolment shares across disciplines.

Women's representation at the faculty level is even lower than their representation among students. Evidence from GTEC's database for the six universities with fairly consistent data shows an average share of about 16% for all universities. Even though women's share in private universities is lower than this average, we noticed some progress (between 2020 and 2023). This may be partly explained by the relatively lower entry requirement for faculty in private universities. That is, unlike the public universities, the private universities are not bound by the PhD degree entry requirement.

We observed that women are generally in lower ranks (typically as lecturers/researchers) compared to men (who mostly occupy senior lecturer/researcher positions). This did not come as a surprise because men have typically been in this space for relatively longer periods and so it is more likely that they would have obtained the requirements for promotion than women. It was however impressive to see an increase in women at the professorial rank (specifically associate professors) from 3 (2020) to 6 (2023). with the first woman full professor in economics recorded in 2023. Even though this progress has not been linear, because of a decline in 2022, it is an indication of women's determination to break barriers in this male-dominated environment which could be an inspiration not only to younger women faculty but also to female economics students.

Regarding women economists' research activities and impact, we focus on the findings from Google Scholar given that there were more female authors registered on the platform in Ghana, thereby providing a more representative sample of women economists in academia in Ghana.

The average number of publications by women (research productivity) is about half that of their male counterparts, which may suggest that women are less productive than men. However, this does not control for how long women have been in academia. In terms of research impact, the average citation for a woman is less than that half that of the figure for a man and the h-index and i10-index for a female author are on average between 53–68 percent of their male counterpart. However, the cohort analysis provided some hope, particularly for research productivity where we noticed a declining gender gap (although this progress was not linear). Specifically, the research productivity of relatively younger cohorts of women (specifically those whose first publication was in 2005–2009; and 2010–2014 periods) was relatively higher than that of some older cohorts (i.e., the <2000; and 2000–2004 cohorts). What is rather worrying is the relatively wider gender gap in research productivity for much younger cohorts (i.e., 2015–2019 and 2020–2023 groups) (see Figures 16 and 17). This is an issue that requires further investigation because a similar observation was made for the research impact (h-index and i10-index). In other words, for a sustained decline in gender gaps in research productivity and impact to be achieved, there is the need for further investigations into the relatively wider research productivity gender gap among the younger (i.e., 2015–2019 and 2020–2023) cohorts that can lead to effective policy interventions.

Finally, while it was good to see women take up leadership roles in their institutions, the wide gender gaps observed means more needs to be done to increase women's representation in these roles. There are several reasons for their under-representation in these roles. For instance, at the university level, positions that require a professorial rank implies that most women would not qualify. We propose that where the position/role is purely administrative, certain criteria (e.g., experience, competence, etc.) could be prioritized so that qualified women (who may not necessarily be professors) may apply and go through a fair selection process. The policies or measures should not be limited to actions taken by university administration. Beyond the university-wide policies, we recommend increased investment in social services infrastructure to help minimize the burden of unpaid care and domestic work on women given that combining academic work, social reproduction responsibilities and leadership/administrative roles is burdensome. Some women even though interested in a position and having the requisite qualifications may not apply for leadership roles because of the triple burden. Women's participation in leadership positions is important to influence policies to reshape teaching and research in university education in general, and economics in particular.

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Appendix

Appendix 1: Economics-related programmes run by the institutions

Economics programmes

Economics education

Agricultural Economics

Economics and Statistics

School of Business and Economics

Development Economics

International Economics

Mathematics and Economics

Economics and Finance

Economics and Social Studies Education

Quantity surveying and Construction economics

Economic Policy

Economics and Management

Energy Economics/Resource Economics

Environmental Economic Policy

Financial economics

Health Policy, Management and Economics

Appendix 2: Number of Faculty in Economics-related programs by gender, 2017 – 2023

Academic yr.	<i>Women</i>		<i>Men</i>		TOTAL
	No. of obs.	Women's % share	No. of obs.	Men's % share	
2017	9	16.36	46	83.64	55
2018	12	16.44	61	83.56	73
2019	12	19.67	49	80.33	61
2020	16	11.59	122	88.41	138
2021	23	15.54	125	84.46	148
2022	41	17.67	191	82.33	232
2023	34	17.35	162	82.65	196

Source: GTEC, 2017–2023

Appendix 3: Rank of faculty over time

	Rank	<i>No. of obs.</i>				<i>% shares</i>			
		2020	2021	2022	2023	2020	2021	2022	2023
Women	Senior Tutor	0	1	0	0	0.0	4.3	0.0	0.0
	Assistant lecturer	2	2	11	9	11.8	8.7	26.2	25.7
	Lecturer/Researcher	10	7	17	11	58.8	30.4	40.5	31.4
	Senior Lecturer	2	9	11	8	11.8	39.1	26.2	22.9
	Associate Professor	3	4	3	6	17.6	17.4	7.1	17.1
	Full Professor	0	0	0	1	0.0	0.0	0.0	2.9
	TOTAL	17	23	42	35	100.0	100.0	100.0	100.0
Men	Senior Tutor	0	11	0	0	0.0	8.7	0.0	0.0
	Assistant lecturer	4	3	21	21	3.4	2.4	11.0	13.5
	Lecturer/Researcher	56	45	70	52	47.5	35.7	36.6	33.3
	Senior Lecturer	43	40	65	52	36.4	31.7	34.0	33.3
	Associate Professor	13	20	24	22	11.0	15.9	12.6	14.1
	Full Professor	2	7	11	9	1.7	5.6	5.8	5.8
	TOTAL	118	126	191	156	100.0	100.0	100.0	100.0

Source: GTEC, 2020–2023

Appendix 4: Current rank of faculty

	<i>Women</i>		<i>Men</i>	
	No. of Obs.	% share	No. of Obs.	% share
Senior Tutor			1	0.9
Lecturer/Researcher	11	40.7	23	20.9
Senior Lecturer	7	25.9	38	34.5
Associate Professor	8	29.6	32	29.1
Full Professor	1	3.7	16	14.5
Total Obs.	27	100.0	110	100.0

Source: Authors' compilation from institutions' website, and faculties' CVs

Appendix 5: Highest level of education of faculty by gender

Highest level of education	<i>Women</i>		<i>Men</i>	
	No. of Obs.	Women's % share	No. of Obs.	Men's % share
Masters	6	25.0	6	6.1
PhD	18	75.0	92	93.9
Total Obs.	24	100.0	98	100.0

Source: Authors' compilation from institutions' website and faculties' CVs

Appendix 6: Current and Past leadership position held by gender

Leadership position		Women	Men
Current	No	79	71
	Yes	21	29
Past	No	78	64
	Yes	22	36

Source: Authors' compilation from institutions' website and faculties' CVs