

Qualitative and quantitative change of university masters and doctoral thesis in the fields of physical geography as a scientific, intellectual, geographical product for the departments of geography / University of Baghdad

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Abstract

The research aims to shed light on the natural geographical intellectual output of graduate students in the departments of geography / University of Baghdad, which can be measured and interpreted through the classification of theses and university theses according to the main fields of physical geography, and the research seeks to analyze and interpret the scientific paths of physical geography and form a clear picture about the output Geographical intellectual in physical geography, which contains major fields, which in turn included more accurate and detailed disciplines, so the research decided to delve into the midst of those delicate disciplines through the research sample, which amounted to (448 master and doctoral thesis) for the period (2021 A.D-1961 A.D). The research relied on the analytical method and used statistical methods, quantitative methods and the GIS program for mapping in order to reveal the size of that product and its qualitative and quantitative change during the period (1961-2021) to know the future scientific trends of the natural geographic branches in those geographical sections. The research reached scientific results, including that the product developed quantitatively and qualitatively during three-time stages gradually, and the climate field had the largest proportion in most of the stages, after which the field of land surface shapes, then the field of water resources, then the field of soil.

Keywords: Geography, GIS program, doctoral thesis.

INTRODUCTION

A university thesis is defined as a scientific work (a scientific study) that the student undertakes during a period of time in order to obtain a higher degree, to research a new topic that has not been addressed by previous researchers, and the thesis adds scientific knowledge to science. Innovative science and the ability to add, interpret and apply modern knowledge to add essential knowledge in the field of specialization. Therefore, university theses were at the level of a precise specialization, as it made geography a prosperous future in the scientific and applied

field (Abd, 2017: p. 344). The dissertations and university theses completed by the geography departments in the faculties of the University of Baghdad, represented by (College of Arts, College of Education IbnRushd for Human Sciences, and College of Education for Girls), were surveyed according to three periods of time: the first (1961-1980) and the second (1981-2000) and the third (2001-2021). In order to analyze the natural geographical intellectual product of the geography departments in order to reach knowledge of the size and type of that output, which in turn reflects the development of geography science

academically and in practice and the extent to which it adheres to its content, objectives and methods, and what are the modern and contemporary geographic methods and methods that were a reason for development and adding the scientific feature of geography after it was accused of being Mere knowledge and has nothing to do with science except intrusion into it, which leads the scholars to know the objective future trends of the topics presented by those departments for study and to investigate scientific facts about them.

The first topic: the theoretical framework for research

1) Research problem: The problem was represented by asking many questions, including (what are the most prominent trends for natural geographical studies according to the titles of the output of graduate students from scientific theses and theses during the study period? What is the impact of their numerical and relative distribution on the quantitative change of production and its quality, and thus its reflection on the development of curricula and the modern methods and techniques used in scientific research, and the extent of their impact on the orientations of the scientific department?)

2) Research hypothesis: To try to develop temporary scientific solutions to the problem or to the questions raised, the research adopted a hypothesis that (the directions of geographical topics have changed in relation to masters and doctoral thesis in the natural geographical specialization during the study period, which led to a development in research methods and methods used in writing that product to be geographical outputs expediency, and that there is an imbalance between the numerical and relative distribution during the specified study periods, whether in general or precise specializations)

3) Research objective: It aims to know the qualitative and quantitative developments of scientific theses and theses by working on tabulating them in tables and analyzing them statistically. And then revealing the extent of balance between the disciplines of physical

geography by knowing the objective trends of these scientific thesis and their temporal and spatial distributions according to sub-disciplines, to clarify the extent to which they are affected by the modern techniques used.

4) The importance of the research: Its importance stems from the great importance that scientific thesis acquires as an original source of human knowledge, as well as shedding light on the geographical issues that have been addressed, which may allow the scientific department and graduate students to avoid repetition and strive to reduce the gap between these outputs by guiding students To search in specializations that suffer from a scarcity of outputs.

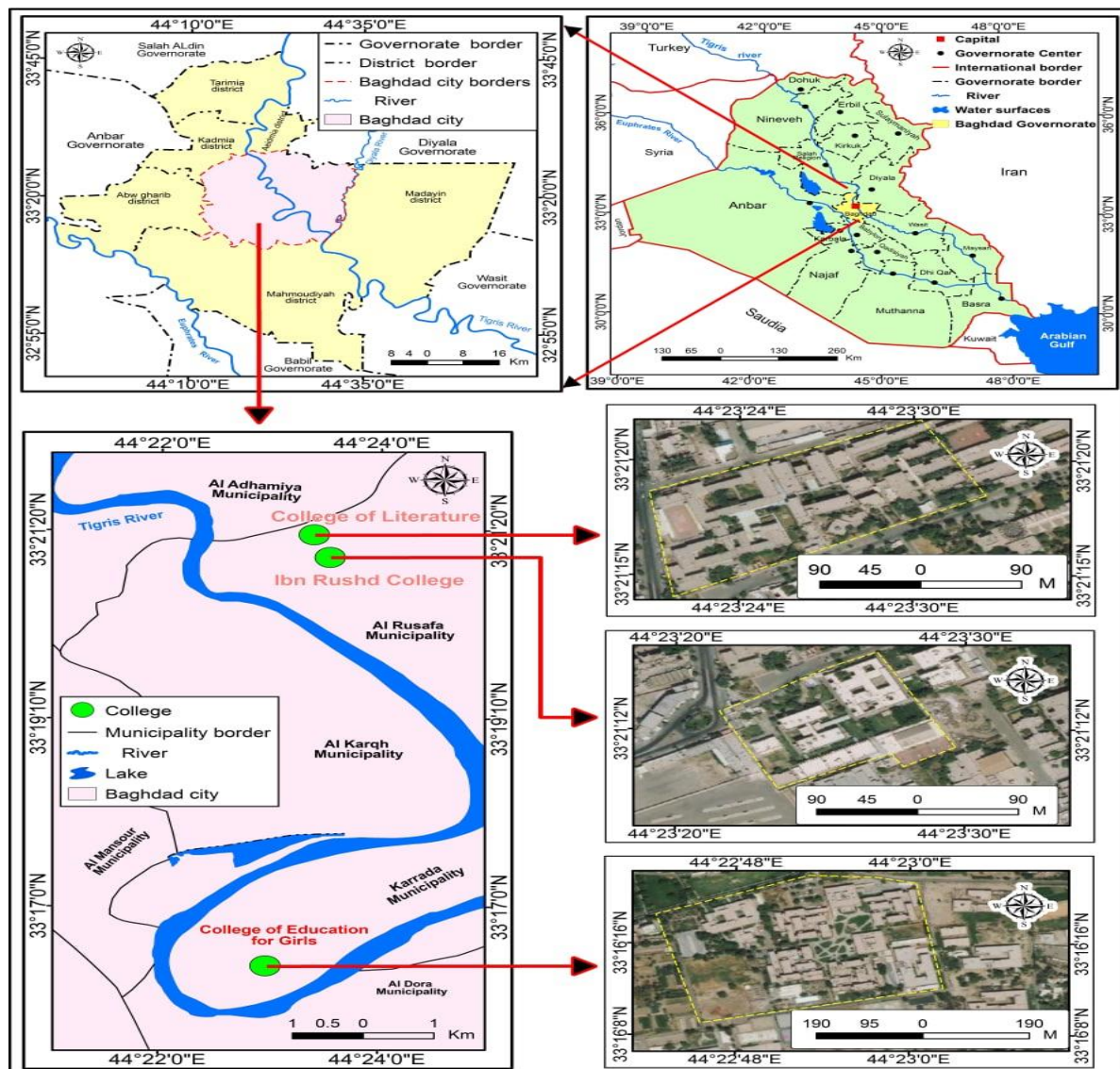
5) Research method and style : In order to reach the goal of the research, the regional approach was adopted in determining the region of the University of Baghdad to study the products of its geographical departments and the most important topics that interest to delve into them, for the purpose of revealing the similarities and differences between geographical intellectual trends, clarifying them, and then evaluating and evaluating them whenever the need arises, as is revealed On the correlations between them and highlighting the advanced and backward cases with a mention of the reasons behind this, whether positive or negative, depending on the general approach of geography, which is the approach of analysis, linkage and distribution, as supported by the historical method in determining the three time periods that showed the stages of development of the selection of geographical topics and specialization in them. To show geographical ideas and their change over time by reviewing the topics of his graduate students. As for the method and methods of work, it was on two sides, the theoretical side, which is the collection of information related to the research, as well as books and periodicals related to the subject under study. As for the practical side, it is represented in the classification of master's theses and doctoral theses that dealt with the branches of physical geography at the University of Baghdad, in order to know the trends of those studies through the use of both the deductive and

descriptive method based on statistical methods in data collection and analysis that include an accurate description of what the theses and theses that are Collect and categorize them into tables. This was done by collecting a research sample consisting of (448 master and doctoral thesis) completed in the departments of geography from the University of Baghdad, distributed as follows (220 master and doctoral thesis) completed by graduate students in the Department of Geography, College of Education Ibn Rushd and (168 masters and doctoral thesis) Completed by graduate students in the Department of Geography, College of Arts, and (60 thesis) completed by graduate students in the Geography Department, College of Education for Girls. In collecting this sample, it was based on the following: (Grade cards for graduate students available in the Graduate Studies Registration Unit It was issued by the geography departments in the colleges covered by the study, their libraries index as well, the Directory of the College of Education for Girls, University of Baghdad 2012-2013, and the Theses Directory of the

Central Library of the College of Education for Women, University of Baghdad, and the Theses Directory of the Central Library of the University of Baghdad).

6) Boundaries of the research: The objective limits were represented by the subject of the study represented by the scientific outputs of the postgraduate students from thesis and scientific thesis in the specialization of natural geography and completed in the departments of geography at the University of Baghdad. As for the spatial boundaries of the research, they were represented at the borders of the University of Baghdad, which is located in two places in the governorate, Baghdad, the capital of Iraq, the first area of Bab al-Moadham. For girls, it is the latest to be established, as work began in 1963 (Sabri, 2021: pg. 43) and was opened in the early eighties of the twentieth century, map N.O(1).

Map N.O (1) The geographical location of the University of Baghdad within the limits of the capital



Source: Based on: N.O (1) the Republic of Iraq, the Ministry of Water Resources, the General Authority for Survey, the Department of Maps, drawing scale: 100000:1 for the year 2016, N.O (2) the Republic of Iraq, the administrative map of Iraq, the basic design map of the city of Baghdad in 2019, N.O (3) The satellite visual (Word View) with an accuracy of (1.50) meters 2021, using the program Arc GIS 10.8.1

The University of Baghdad is the oldest Iraqi university in which the first department to teach geography was born in the College of Education Ibn Rushd after what was called the High Teachers House in the forties of the twentieth century. Geography about history in 1958, then its departments joined with the College of Arts after the abolition of the first College of Education, which was reopened in the name of the College of Education Ibn Rushd in 1974 and the opening of the admission channel for postgraduate studies in

it, and then the Geography Department was opened in the College of Arts in 1949, and the channel for graduate studies was opened for the Masters in 1961, the Department of Geography at the College of Education for Girls was opened in 1985.

As for the temporal limits of the research, the duration of the study was determined between the years (1961-2021), as the first year represented the beginning of the inauguration of postgraduate studies at the University of

Baghdad in the College of Arts. In 1969, in it, entitled (Irrigation System on the Diwaniyah and Dagharah Rivers and Its Impact on Agriculture), followed by the first master's thesis at Ibn Rushd College of Education under the title (The Impact of Climate in Determining Fruit Production in the Tigris River Basin) in 1988, then a completed Master's thesis at the College of Education for Girls in 1999 entitled (Wadi Al-Arjawi Basin: A Morphometric Study, Mansheya and Land Uses). To achieve the objective of the study, the research period was divided into three phases as follows:

1. First stage (1961-1981)

This time period was determined on the basis of the commencement of postgraduate studies in the Department of Geography, Faculty of Arts, where the admission channel was opened in 1961 for the availability of teaching staff from geographical professors holding the title of Professor (Professor) to enable graduate students to obtain the study materials they need in the preparatory phase and the research writing phase. The number of students was few and increased later, and the specialization of human geography had a greater impact than physical geography, in which a dissertation or thesis was not completed until 1969. This stage remained characterized by low production because it relied on one department in graduate studies and the effect of the scientific background of the geography professors from the first generation, who are Graduates of prestigious international universities on the natural geographical intellectual output.

2. The second stage (1982-2000)

The number of specialists in the natural geographical field increased, which encouraged the opening of other admission channels for postgraduate studies in the Geography Department of the College of Education IbnRushd. 1988 was the first year to complete a graduation project to obtain a master's degree in natural geography in it, while the Geography Department in the College of Education for Girls opened the University of Baghdad in 1985, to attract the outputs of the faculties of education, Ibn Rushd and Arts, to form second-

generation teaching cadres for Iraqi geographers.

3. The third stage (2001-2021)

This stage began with an increase in the number of geographers, especially in the natural geographical specialization, which enabled them to supervise the theses and theses in this specialization and its subtle branches as well, as they had a great impact in increasing production. As the visions and geographical philosophy differed because the third generation of Iraqi geographers at this stage were affected by the ideas of the first and second generations, influenced by contemporary geographical philosophy, as well as the impact of projects for writing letters and theses by modern means and technologies in geography, including remote sensing programs and geographic information systems, which opened a private laboratory in the College of Arts and the name of the Department of Geography was officially changed to (Department of Geography and Geographic Information Systems) in the academic year (2010-2011) to keep pace with the development in geography, where the certificate of competency of information systems was approved as a mandatory requirement for applicants for postgraduate studies since the academic year (2019-2020). (Field study, dated 5/18/2022), as well as increasing the central admission plan for graduate studies on the public and private channels, the martyrs' channel, and the state employees' channel in most of those geographical departments, and then following the expansion system in academic seats. All this led to an increase in the number of studies students in geography in general and in physical geography in particular.

The second topic: the qualitative and quantitative change of scientific thesis in the fields of physical geography for the departments of geography at the University of Baghdad

Physical geography is defined as a branch of geography that studies natural phenomena on the surface of the earth in terms of topography, surface shapes, distribution of land, water, and

natural coverings, which man did not intervene in (Al-Haddad, 2017: p. The nature of the earth's surface (Al-Shami, 1987: p. 42). It is the first branch from which geography began, because man, since the beginning of his inhabitation on earth, has been interested in knowing the natural manifestations around him. But the researcher who is a natural geographer, in order to have an effective role, must be trained appropriately to enable him to seriously examine natural phenomena. (Al-Muzaffar, 2005: p. 143)

It is evident from Table (1), Figure N.O (1) and Map N.O(2) that the total intellectual output of the University of Baghdad for master and doctoral thesis in the field of natural geography for the period from 1961 A.D to 2021 A.D is (448 Master and doctoral thesis), which were for the College of Education Ibn

Rushd For the humanities, for the humanities, the largest share of this intellectual output is nearly half, as the percentage amounted to (49%) and the number of (220 master and doctoral thesis) out of the total of scientific theses and university theses in the natural geographical specialization, and the percentage of the Faculty of Arts came in second place, which amounted to (38%). From the intellectual product of physical geography at the university, with a number of (168 masters and doctoral thesis), followed by the College of Education for Girls, whose percentage of this scientific output was (13%) and with a number of (60 master and doctoral theses), which is the lowest percentage and this is due to its being a young college in relation to the College of Education Ibn Rushd for Human Sciences. for Human Sciences and the Faculty of Arts.

Table N.O (1) Qualitative and quantitative change of scientific thesis for the fields of physical geography at the University of Baghdad

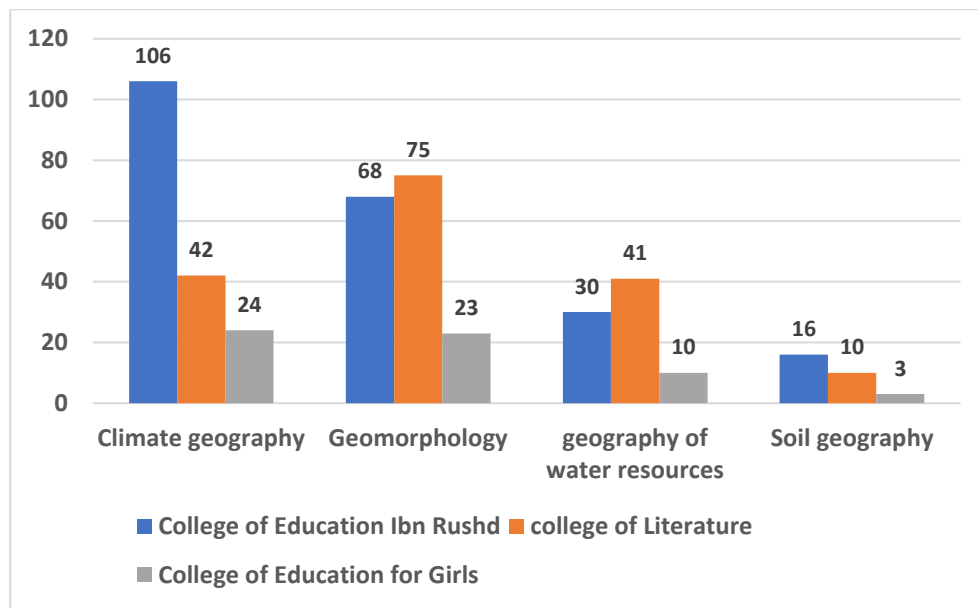
Percentage	Total	College of Education for Girls	college of Literature	College of Education IbnRushd	Geographical field
%38.39	172	24	42	106	Climate geography
	%100	%14	%24	%62	Percentage
%37.05	166	23	75	68	Geomorphology
	%100	%14	%45	%41	Percentage
%18.08	81	10	41	30	geography of water resources
	%100	%12	%51	%37	Percentage
%6.47	29	3	10	16	Soil geography
	%100	%10	%34	%55	Percentage
%100	448	60	168	220	Total
	%100	%13	%38	%49	Ratio

Source: Prepared by the researcher based on the field study and survey of scientific thesis completed in the faculties covered by the study at the University of Baghdad.

(*) Environmental studies have been excluded because they belong to common disciplines. They study the natural environment, the urban environment, and how one affects the other, as well as allowing researchers to study it in the future.

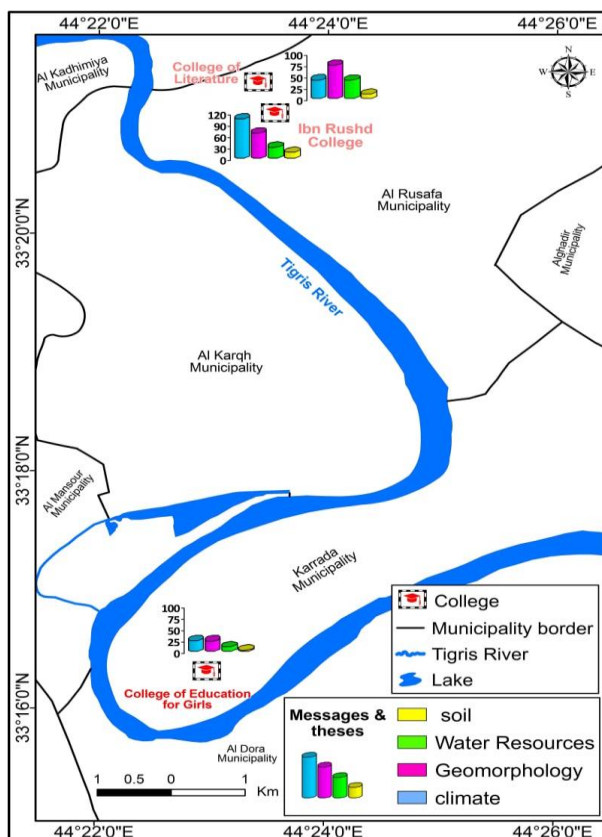
Figure (1) Qualitative and quantitative change of scientific thesis in geography fields

Figure N.O (1) The qualitative and quantitative change of scientific thesis in the fields of physical geography at the University of Baghdad



Source: based on data from Table N.O (1).

Map N.O (2) the qualitative and quantitative change of thesis in the fields of physical geography at the University of Baghdad



Source: data table N.O(1).

Those scientific thesis completed by graduate students in the geography departments in the faculties of the University of Baghdad for the period (2021-1961 A.D), according to the three mentioned time periods and according to the main sub-fields of natural geography, which is the field of climatic geography, which aims to determine the general pattern of weather conditions and its interpretation and exploitation in the interest of man, for this reason he pays great attention to the scientific applications of studying the atmosphere. (Malik, Al-Hamidawi, 2010: p.). The need has become urgent in the contemporary time to pay attention to climatic geography because of the climatic changes that occur on the surface of the earth and its gaseous atmosphere, such as global warming or the so-called greenhouse phenomenon. (Al-Maamouri, 2011: p. 7) As well as due to the economic conditions suffered by many countries of the world and the increase in agricultural production that many countries in the world seek, including Iraq, (Al-Hamidawi, 2018, p. 39), which led to an increase in interest in the fields of climatology and meteorology And the use of means of communication and information exchange, which helped him in the areas of weather forecasting, the use of aircraft, satellites and radar devices, which contributed to the study of some weather phenomena and hurricanes, and

finally, electronic computers and information are used in various climatic studies (Abu Zakhem, et al., 2012: p. 15).

The diversity of intellectual output in the study of climate geography between the study of the climate of Iraq, the characteristics of the climate, the climate and its relationship to agriculture and the analysis of climate data, as the applied climate is defined as the scientific use of climate information and its application to a specific problem within a specific topic, and it deals with the relationship between climate, and what is on the surface of the earth. From natural and human phenomena, the importance of studying applied climatology emerges from two aspects. His health and comfort, or anything related to his construction, the engineering of his cities, his economic and military affairs, and others. (Zahran, 2020: p. 44)

As for the second field, it is the geography of the shapes of the Earth's surface (geomorphology), and it is defined as a science of modern geography that shows its curricula and trends since the late nineteenth century. Geomorphology in the past was descriptive and attached to the core of geographical studies at times and referred to by geological studies at other times. It had no theory or rules and laws governing the ideas of this science before the past three centuries and with the development of science and the tendency to specialize, geomorphology began to take its independent character among geographical studies, whether these studies were (Descriptive - applied) until it became specialists and scholars who focused their interest in this science (Al-Turkmani, 2011: p. 7). While the third geographical field is the geography of water resources, which in its content is concerned with the study of the distribution of water on the surface of the earth and its sources, movements, quality, and the problems that water suffers from. (Abu Samour and al-Khatib, 2006: p. 12).

Water geography is one of the modern fields in the department of geography in terms of treatment method and trends, as there have been many sporadic geographical studies related to water, whether as a resource, as a

commodity or as a service (water provision) for a long time, as some studies since the fifties of the twentieth century have been concerned with water as one of the resources. The natural environment that must be preserved and developed by making good use of it for various purposes. These studies were initiated by specialists in hydrology and enriched by geographers for their great capabilities by virtue of the geographical treatment method and the role it poses in the areas of development. (Al-Zawka, 1998: p. 8)

The last field in the classification includes soil geography, which represents one of the fields of modern physical geography that is concerned with the study of soil as a natural resource on the surface of the earth, including soil formation, classification and mapping, and knowledge of physical, chemical, biological and soil fertility characteristics, and these characteristics in relation to the use and management of soil (Jackson, 1977: p.9), and a distinction must be made between soil science and soil geography. Soil science studies soil as a natural phenomenon on the surface of the earth and deals with the study of its origin, development, formation and physical and chemical properties (Al-Shalash, 1981: p. 11). As for soil geography, the contents of its study include two directions. The first is concerned with studying the general geography of soil, and its content includes the study of soil formation factors and its geographical distribution. The second direction: It means studying the geography of the soil and is concerned with studying certain places in the world and placing them in a cartographic framework. (Saad, 2016: p. 87)

It is clear from Table N.O(1), Figure N.O (1) and Map N.O (2) that the intellectual output of the University of Baghdad according to the natural geographical field, the highest percentage of the climate field came with a rate of (38.39%), which is close to the percentage obtained by the geomorphology field, which is (37.05%) and the number of (172 and 166) thesis for each of them, respectively, which are high rates compared to other fields, and the reason for this is due to technological development and the entry of computers into

the process of quantitative data analysis, in addition to the availability of accurate climate data provided by the General Authority for Meteorology and Seismic Monitoring in Baghdad, which is the main source For those data, in addition to the availability of measurement tools for geomorphology phenomena and the availability of satellite visuals for all geographic phenomena, a distribution and interconnection that serves geographical studies, in that the availability of GIS programs in all its delicate disciplines, including natural geography, which created a scientific revolution in which the science of geography was transferred to the ranks of other sciences to increase applied studies and expediency in it, in addition to the fact that the increase in specialists in these two fields of geography led to an increase in students wishing to study and research in They are supervision and its availability has a major role in determining the scientific direction of the department, the student and the topic of research.

As for the percentage of intellectual production in the field of water resources and soil, it amounted to (18.08%) and (6.47%) for each of them, respectively, with a number of (81, 29) theses and theses, which are low or few compared to the previous two fields. The reason for this is attributed to the costly material costs that need These studies have modeling and analysis in laboratories, which forces the researcher to resort to the laboratories of the faculties of science and the environment and other sample analysis centers to conduct the laboratory analyzes required by the study, in addition to the lack or lack of precise specializations in these two fields due to their modernity, so supervision is difficult for the student, especially if required The matter is external supervision, and this undoubtedly affects and is affected by the policy of the scientific departments that are often willing to develop specializations in them in line with the development of geography.

As for the geographical distribution of the natural geographical scientific output at the level of the faculties included in the study, according to the geographical saying, the first

place went to the Faculty of Education Ibn Rushd, with the number of letters and theses amounting to (106), and he scored a percentage of (62%), while the Faculty of Arts came in second place with a number of (42 thesis).) to constitute a female (24%), while the College of Education for Girls came in third place in climatic studies, as it recorded (14%) for a number of (24 thesis).

In the field of geography of Earth's surface forms, the Faculty of Arts ranked first with a percentage of (45%) and a number of (75 thesis), while the Faculty of Education Ibn Rushd came in second place with a percentage (41%) and a number of (68 thesis), while the last place was From the share of the College of Education for Girls with a percentage of (14%) with a number of (23 thesis), and in the field of geography of water resources, the Faculty of Arts also won the first place with the number of thesis amounted to (41) to form the largest percentage of (51%), while the Faculty of Education Ibn Rushd and the College of Education for Girls ranked second and third with the number of thesis (30 and 10), to form the lowest percentage (37% and 12%) of the total percentages of theses in the field of water resources geography.

The natural geographical output in the field of soil geography is generally low due to the novelty of its content and the lack of supervision over it. Therefore, its intellectual output at the level of colleges was few and varied. The first place of the College of Education was Ibn Rushd with (16 thesis) only and at a rate of (55%), which is more than Half, while the share of the College of Arts ranked second with a percentage of (34%) and a number of (10 thesis) only, while the College of Education for Girls came in last place with a percentage of (10%) and a number of (3 thesis only).

The third topic: the change in the academic specialization of scientific thesis in the fields of natural geography until 2021

Academic specialization is the acquisition of more experience in a branch of knowledge or science, and the individuals concerned with

academic specializations are referred to as experts or specialists. The educational institutions originally used the term "specialization" to index and archive the new and seasonal collection of information produced by the academic community. (History of Education, 1977: P. 337) And that the main purpose of completing studies and obtaining higher university degrees recognized in the local and international scientific community is to specialize in a branch or field of knowledge and various sciences. The specialization is one of the most important advantages offered by universities to students of masters and doctorate in them, where the focus and intensive research in any field or scientific branch and continuation in it leads to new discoveries and theories. This is the main purpose of the emergence of academic specialization. In this topic, the two researchers seek to count and count the number of researchers who changed their field of specialization in physical geography at the doctoral stage during the period (1961 - 2021) from those who completed their master's and doctoral studies within the University of

Baghdad according to the natural geographical fields.

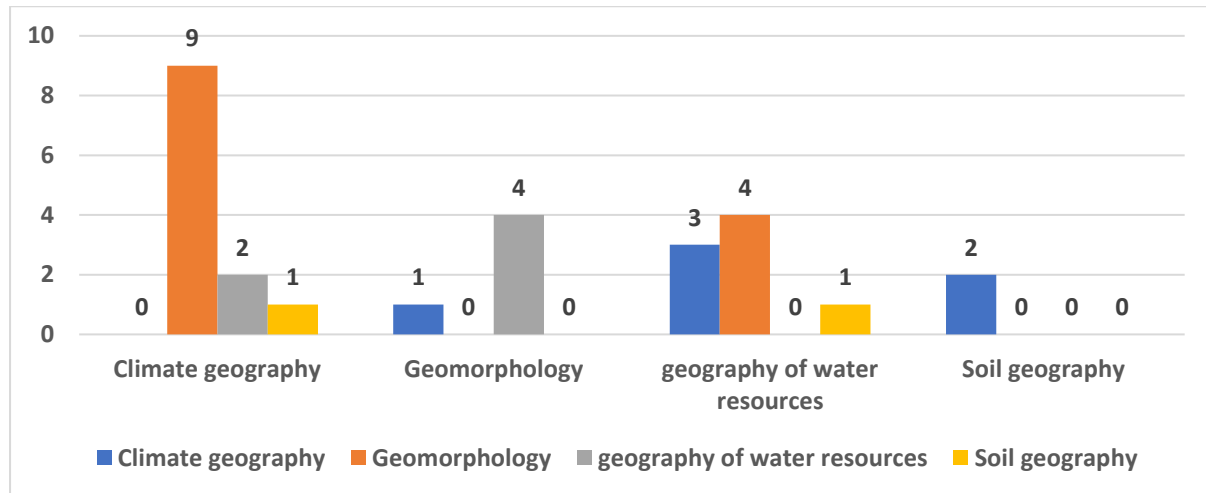
We note from Table (2 and 3) and Figure (2) that the number of those who changed their field of specialization after the master's degree (27 researchers), and the largest number of them was within the specialization of climatic geography, numbered (12 researchers) and at a rate of (44.44%) of the total who changed their field of specialization. The second rank was for researchers within the field of water resources geography with a number of (8 researchers) and a percentage of (29.63%) of the total who changed their specialization, followed by researchers in the field of geomorphology with a number of (5 theses and thesis) and a percentage of (18.52%) of the total. Those who changed their field of specialization, and the least number was within the field of specialization with a number (researchers only) and the lowest percentage (7.41%) of the total of those who changed their field of specialization.

Table N.O (2) The change in specialization of scientific thesis according to the natural geographic fields

Percentage	Total	Soil geography	geography of water resources	Geomorphology	Climate geography	The second specialty the first specialty
44.44%	12	1	2	9	0	Climate geography
18.52%	5	0	4	0	1	Geomorphology
29.63%	8	1	0	4	3	geography of water resources
7.41%	2	0	0	0	2	Soil geography
100.00%	27	Total				

Source: Prepared by the researcher based on the field and survey study of scientific thesis completed in the faculties covered by the study at the University of Baghdad

Figure N.O(2) *The change in specialization of scientific thesis according to the natural geographic fields*



Source: Data Table N.O (2)

Table N.O(4) Number and percentages of researchers who changed their exact specialization in physical geography to the PhD stage in the faculties of (Education - Ibn Rushd, Arts and Education for Girls/University of Baghdad) according to the study sample

Second major	First major	Name of researcher	T	Second major	First major	Name of researcher	T
G. Mor	G. Climate	Rajaakhalilahmed	15	G. More	G. Climate	Aisha abu Baker othman	1
G. Mor	G.climate	Deaaeldeeen abed al husain	16	G. Climate	G. Soil	Saad ojailmubarak	2
G. Water resources	G. More	Intetharmahdiothman	17	G. Soil	G. Climate	Suadabdulkhathemzuhairi	3
G. Mor	G.waterresources	Neraan Mahmoud suleiman	18	G. Mor	G. Climate	Nibraas Abbas yasir	4
G.mor	G. Water resources	Zainab damadhasan	19	G. Mor	G. Climate	Ali majeedyaseen	5
G. Soil	G. Water resources	Zainab salehshnaushel	20	G. Water resources	G. Climate	Reem abdulrazzakhassouni	6
G. Mor	G. Water resources	Talal maruosh sari	21	G. Mor	G. Climate	Basma Ali Abed al Hussein	7
G. Climate	G. Water resources	Rafah mhannamohammad	22	G. Mor	G. Climate	Saadia AkoulMonkhi	8
G. Mor	G. Water resources	Sana abed shahed al tamimi	23	G. Climate	G. Water resources	Hamsa Jamal Al Swidan	9
G. Water resources	G. Mor	Israaabelwahidali	24	G. Climate	G. Soil	Salar Ali Khudair	10
G. Mor	G. Climate	Shaimathamerjawad	25	G.	G. Water	Faten Khaled Abdel Baqi	11

				Climate	resources		
G. Mor	G. Climate	Iman shhabhasan	26	G. Water resources	G. Mor	Mohamed BahjatThamer	12
G. Climate	G. Mor	Wala kamilhaydari	27	G. Water resources	G. Mor	Fatima Najaf Hussein	13
				G. Water resources	G. Mor	Shaima Abdel Khalil Jamil	14

Source: Based on a field study and survey of scientific thesis completed in the faculties covered by the study at the University of Baghdad.

(*) Researchers from graduate students who have completed one of the two stages (Master's or PhD) in geographic departments not affiliated with the University of Baghdad are excluded.

In the field of climate geography (12 researchers) changed their specialization to another field (9 researchers) changed their specialization from climate geography in the master's degree to the specialization in geomorphology in the doctorate, and two researchers changed their specialization from climate geography in the master's degree to the geography of water resources in the doctorate, and a non-researcher His specialization is soil geography in his Ph.D. As for geomorphology, (5 researchers) changed their first specialization to another one, a researcher changed his specialization from geomorphology in the master's degree to climatic geography in the doctorate, (4 researchers) changed their field of specialization from geomorphology in to the geography of water resources in the doctorate), while the specialization of resource geography (8 researchers) changed their first field of specialization to another field of specialization (3 researchers) changed to climate geography

in their PhD, (4 researchers) changed to geomorphology in their PhD, and a researcher changed their field of specialization to soil geography in their PhD). Soil geography specialization Two researchers changed their field of specialization to climate geography in their Ph.D. And the total number of specialists who completed their postgraduate studies (Master's and PhD) at the University of Baghdad (86 researchers), and (68.60%) of them did not change their specialization to another specialty, and the number of (59 researchers) and (31.40%) changed their first specialization to another specialty with a number of (27 researchers), the change from the geography of climate to another specialty, such as (13.98%) of the total, which is the highest percentage, followed by the change from the geography of water resources with a percentage of (9.30%) of the total, then the change from geomorphology with a percentage of (5.81%) of the total, while the lowest percentage was the share of change from the specialization of soil geography by (2.33%) of the total. As for the time stages of the study period (1961-2021), the change in the exact specialization of those studies was as follows: Table (4) and Figure N.O (3)

Table N.O (4) The change in specialization for thesis according to the natural geographic fields and the time stage

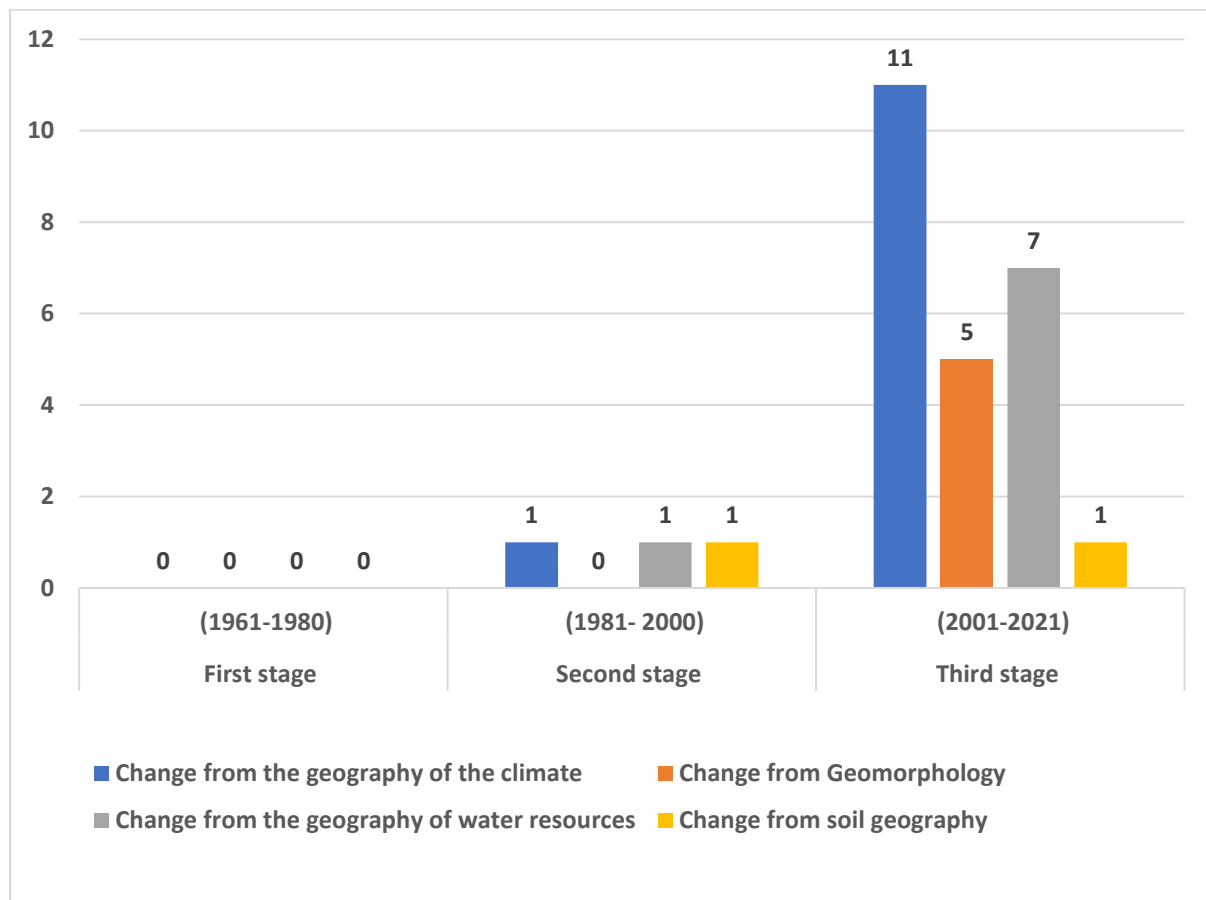
Percentage	Total	Third stage	Second stage	First stage	Change in major
		(2021-2001)	(2000 -1981)	(1980-1961)	
12.95%	12	11	1	0	Change from the geography of the climate
5.81%	5	5	0	0	Change from Geomorphology
9.30%	8	7	1	0	Change from the geography of water resources
2.33%	2	1	1	0	Change from soil geography

31.40%	27	24	3	0	Total
	31.40%	32.00%	27.27%	0.00%	Percentage
68.60%	59	51	8	0	No changes in major
	68.60%	89.47%	72.73%	0.00%	Percentage
100.000%	86	75	11	0	total summation

Source: Based on a field study and survey of scientific thesis completed in the faculties covered by the study at the University of Baghdad.

(*) Researchers from graduate students who have completed one of the two stages (Master's or PhD) in geographic departments not affiliated with the University of Baghdad are excluded.

Table N.O (3) The change in the specialization of scientific thesis according to the natural geographic fields and the time stage



Source: data table N.O (4)

□ The first stage (1961-1980): there was no number or percentage to change, which is evidence that there are no postgraduate students in the doctoral stage of the departments of geography at the University of Baghdad in order to complete their postgraduate studies (PhD) in other universities or for scholarships outside Iraq.

□ The second stage (1981-2000): The number of those who obtained a master's

degree and a doctorate from the departments of geography at the University of Baghdad reached (11 researchers). This stage witnessed the emergence of a change from the first specialization to a second specialization, as their percentage reached (27.27%) with a number of (3) researchers), while the percentage of those who did not change their specialization was (72.73%) with (8 researchers).

□ The third stage (2001-2021): the number of those who obtained a master's

degree and a doctorate from the departments of geography at the University of Baghdad reached (75 researchers). During this stage, the percentage of geographers who changed their first major to a second one increased, amounting to (32.00%) with the number of (24 researchers). As for the percentage of the rest on their first specialty, it reached (89.47%) and the number of (51 researchers).

Many researchers try not to change their general specialization from natural geography to human or vice versa for various reasons, including deepening the specialization and studying it from all sides, as well as providing most of the theoretical library resources about the specialization, so that he does not have the desire to change, and the difficulty of study, investigation and analysis and this reason may be one of the most important. The reasons are the difficulty that the researcher faces in studying a new scientific subject in which he did not have a good scientific background that would help him in carrying out the research, especially the transition from human geography to natural geography whose subject and content are close to pure sciences and not social sciences. While the transition between the fields of this same specialization (natural geography) is more flexible and smooth, so we note that the change in specialization among natural geographers researchers from one field to another is the most obvious among the researchers of the study sample. But it does not happen arbitrarily, but rather gradually and programmed. The policy of the scientific department may have a role in this, or the need for certain specializations, or because of the desire of the geographical researcher himself not to change the scientific supervision.

There were many reasons that led to the change in specialization and the movement from one natural geographical field to another among geographical researchers. They have a long experience in teaching at the postgraduate levels in those departments, so they identified some scientific and logical reasons that can be summarized as follows: (Field study: dated 27-28/4 and 15/5/2022)

1) The desire of the geographical researcher to specialize in the exact specialization in the master's stage is tainted by some turbidity and lack of knowledge, while in the doctoral stage the desire is clear and its objectives are known to the student and supervisor, as well as the incompatibility of the scientific background of the doctoral student after completing the master's stage.

2) There is no opposition from the scientific committee within the department, especially for unappointed researchers whose specialization is controlled by the need for it by their affiliated institutions, on the basis of which a study leave is granted to facilitate the task of study and scientific research.

3) The difficulty of the field study, especially among female researchers, may be one of the reasons that lead to changing the exact specialization, in addition to the lack of library resources, which forces the student to rely on the field study to take samples for examination and analysis in laboratories or to record phenomena by observation, observation and repetition of observation.

4) The policy of the scientific department, which seeks to strike a balance with the different geographical disciplines available to them, to include the teaching of all scientific subjects in the primary and higher studies, and the absence of the need to attract professors from other departments or universities.

5) The lack of scientific supervision for a specific specialization in the geographical department, which forces the researcher to change his specialization according to the available specialization of professors in graduate studies who wish to write under their supervision. This depends on the extent of understanding and harmony between the supervisor and the researcher on the one hand, and between the supervisor and the department's management on the other hand. .

6) The desire to be hired or find a job is one of the big motives for changing the exact specialization of the researcher, especially as it has been precisely determined by governmental and private institutions and bodies in recent

times, as the holders of higher degrees are many of the unemployed, and trying to find a job opportunity pushes them to address the desired specialties .

7) The change of specialization is due to the material cost incurred by the researcher in natural studies, such as analysis of water and soil samples or the use of expensive climatic devices to calculate dust or any climatic phenomenon or sampling devices.

Research results

1) The number of scientific theses and theses that were approved by the geography departments during the study period between (1961-2021) (448 thesis) distributed over the fields of physical geography. As it was distributed between (287 master's thesis) and (161 doctoral theses), the share of the College of Education Ibn Rushd for Human Sciences was (137 thesis) and (83 theses), with a total of (220 thesis), while the College of Arts (104 thesis) and (64 thesis)) with a total of (168 thesis), while the College of Education for Girls has (146 thesis) and (14 thesis) with a total of (60 thesis).

2) The study showed that the highest percentage of natural geographical studies was in the field of climatic geography with a percentage of (38.19%), followed by studies in the field of geography of surface shapes with a percentage of (37.05%), and then the geography of water resources by (18.08%) and the lowest percentage was for geography Soil by (6.47%).

3) It turns out that the lowest percentage in the studies is within the geography of the soil and the reason is due to the novelty of this geographical field on the one hand and the difficulty of researching it.

4) It is evident from the relative distribution of theses and dissertations in physical geography, the first stage of the period (1961-1980) characterized by the lack of production in it, due to the Faculty of Arts only because of the opening of a channel for admission to graduate studies in it.

5) The number of those who changed their field of specialization after the master's degree (27 researchers), and the largest number of them was within the specialization of climatic geography (12 researchers) with a rate of (44.44%), and the second place was for researchers within the specialization of water resources geography (8 researchers) with a percentage of (29.63%), followed by researchers in the field of geomorphology (5 researchers) at a rate of (18.52%), and the least number was in the field of soil (researchers only) and the lowest percentage (7.41%) of the total who changed their field of specialization.

6) The study identified many reasons for the change in the exact specialization within the branch of physical geography by conducting a field study, including the student's desire to change the specialization, others on the lack of a supervisor in a specific specialization, and others attributed to the department's scientific plan and the need for a job in specialization as well as personal motives from the material cost or the speed of completion of the search.

Research proposals

□ Increasing interest in the topics that are presented for study and developing them to benefit from, because they are an important source for transmitting modern information that benefit seekers of knowledge on the one hand, and on the other hand, it has a major role in delivering valuable scientific information to decision-makers in the country to determine their decisions through studying problems and giving proposals To solve it or advance a specific area.

□ Develop curricula in geography departments and clarify general and specific concepts and terms for each major or minor geographic field, especially in the field of physical geography. And reconsidering the curricula of the departments of geography at the University of Baghdad and others to show the revival of natural studies and direct them in the right direction in the right path, which serves geographical thought and works on developing geographical curricula.

□ Encouraging the trend towards precise specializations in physical geography, especially in the fields of geography of water resources and geography of soil. Finally, providing all the tools, means, and laboratories that serve the graduate students to motivate them to take an interest in the branch of physical geography, with a focus on developing studies in the fields of biogeography and soil geography.

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