

Self-Efficacy Beliefs of Yemeni Graduate Students about themselves as Competent Researchers

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Received:
19/07/2023

Revised:
30/08/2023

Accepted:
18/09/2023

Published:
30/10/2023

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Citation: Al-Mekhlafi, M. A., & Al-Mekhlafi, O. M. (2023). Self-Efficacy Beliefs of Yemeni Graduate Students about themselves as Competent Researchers. *Journal of Humanities & Social Sciences*, 7(10), 144 – 158. <https://doi.org/10.26389/AJSRP.K190723>

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Abstract: The current research study aimed at exploring the self-efficacy beliefs of Yemeni graduate students about themselves as competent researchers. The data of this study were collected via survey questionnaires that were created electronically using Google Forms and the link was sent to the graduate students in the Yemeni universities using the social media such as Facebook and WhatsApp. (113) questionnaires were returned. The sample consisted of 57 (50.44) Master's program students and 56 (49.56) doctoral (Ph D) program students who are enrolled in the Yemeni universities. Similarly, the sample also consisted of 55 (48.7%) male graduate students and 58 (51.3%) female graduate students. The results indicated that the highest mean average among the six components of self efficacy beliefs was the subscale of Research Procedures (M= 4.26), followed by the domain of the nature of References (M= 4.25) and the subscale of the Topic Selection and Introduction (M= 4.18). Then, in the fourth and fifth places came the subscales of Results Presentation and Literature Review with the means of (4.17) and (4.07) respectively. The domain with the lowest mean was the domain of the Supervisor's Role (M= 3.88). This research article reported statistically significant differences among the doctoral and MA students on the self efficacy beliefs in favor of the doctoral program students. On the other hand, gender differences were not found statistically significant. The study ends with some pedagogical implications and future research directions.

Keywords: Self-efficacy Beliefs, Research Competence, Yemeni Graduate Students, Gender.

التصورات الذاتية لطلبة الدراسات العليا اليمنيين لأنفسهم كباحثين أكفاء

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المستخلص: هدفت هذه الدراسة إلى استكشاف التصورات الذاتية لطلبة الدراسات العليا اليمنيين لأنفسهم كباحثين أكفاء. وقد تمت عملية تجميع البيانات عبر استبيانات الكترونية تم بناؤها باستخدام جوجل فورم وتم إرسال الرابط الإلكتروني عبر وسائل التواصل الاجتماعي كالفيسبوك والواتساب إلى طلبة الدراسات العليا اليمنيين. حيث بلغ عدد الطلبة المستجيبين 113 طالب وطالبة منهم 57 أي (50.44%) من طلبة برامج الماجستير أما طلبة الدكتوراه المستجيبين فقد بلغ عددهم 56 أي (49.56%). كما تكونت عينة الدراسة من 55 أي (48.7%) من الطلبة الذكور وعدد 58 أي (51.3%) من طالبات الدراسات العليا في الجامعات اليمنية. تشير نتائج الدراسة بأن مجال إجراءات البحث جاء في المرتبة الأولى بين مجالات الدراسة الستة وبمتوسط حسابي (4.26) يليه مجال المراجع وبمتوسط حسابي بلغ (4.25) وفي المرتبة الثالثة جاء مجال اختيار موضوع البحث وبمتوسط حسابي بلغ (4.18) وفي المرتبتين الرابعة والخامسة جاء مجال عرض النتائج ومناقشتها ثم مجال مراجعة الأدبيات وذلك بمتوسط حسابي (4.17) و (4.07) على التوالي. أما المجال الأخير فقد كان دور المشرف الأكاديمي وحصل على متوسط حسابي هو (3.88). كما تشير النتائج إلى وجود فروق ذات دلالة إحصائية عند مستوى الدلالة (0.05) يعزى لمتغير البرنامج الدراسي (ماجستير & دكتوراه) ولصالح طلبة الدكتوراه. كما تشير النتائج إلى عدم وجود فروق ذات دلالة إحصائية بين متغير الجنسين (ذكور & إناث). ويختتم البحث بمجموعة من التوصيات التربوية وموضوعات البحوث المستقبلية. الكلمات المفتاحية: التصورات الذاتية، الكفاءة البحثية، طلبة الدراسات العليا في اليمن، النوع.

1. Introduction: The Context of the Study

The graduate (Master's and Ph D) programs in the Yemeni universities aim at qualifying the graduate students to be able to apply the theoretical aspects of their specializations and to show familiarity with the branches of knowledge in their fields of study. They are provided with the essential research skills and competencies that equip them to write a thesis on a topic of interest in their field of study that meets the international standards. They are expected to show knowledge and understanding of modern research tools and methods, including the employment of technology. Furthermore, they are expected to practice continuous learning by attending seminars, conferences and workshops in their field of study. The PhD research scholars are required to publish at least two research articles in referred research journals.

Conducting research studies is one of the main functions of universities around the world. Thus, they are expected to focus on conducting research studies by both their faculty members and graduate students. In fact, there has been a growing interest in the role that the universities play in enriching the society with academic research studies conducted by the faculty members or the theses that are written by graduate students which address the social and academic problems and issues. One of the important roles that the universities play is the preparation of novice researchers who are well trained and able to address the society's problems and issues so as to achieve prosperity, aspirations and success (Khataybah and Jubran, 2019; Al-Alem and Badarneh, 2021).

According to Marin et al., (2017) developing the research skills and knowledge of graduate students is considered one of the parameters of success of higher educational institutions worldwide .

As Marushkevych, et al. (2022) noted, one of the most fundamental outcomes of the higher education programs is the preparation and practice of research activities by postgraduate students and their supervisors, and to create a new generation of researchers. They add that the research skills are firmly established including processing and analyzing data and presenting them in an academic form. They reported that the research skills and competencies are among the features that characterize an educated person.

Some researchers such as Al Furaikh et al. (2017), Fuentes (2017), Muthuswamy et al. (2017), Prosekov et al. (2020), Amirova et al. (2020), Castillo-Martínez & Ramirez-Montoya (2021), Karlibaeva (2021), Al-Alem and Badarneh (2021), and Marushkevych (2022) have argued that the research scholars of the graduate programs are expected to be fully competent and well trained in conducting research studies in their chosen field of study. This requires hard work to refine the research competencies and skills of the graduate students which is considered the most important function of the graduate programs in any university. They are expected to show understanding and awareness of the different types of research methods as well as means of gathering data and information. They should be able to determine the most appropriate research method for investigating problems and issues in their field of expertise and gather the needed data by handling the most efficient data-gathering tools.

2. Research Self-efficacy Beliefs

Self-efficacy beliefs are people's common perceptions of their abilities in various fields such as research. For instance, the statement "I have the ability to do research in my field of study" suggests the researcher's perception that they have the right capability to do research activities (Al-Mekhlafi, 2011). He argues that the early-shaped self-efficacy beliefs tend to resist any change and they become powerful in influencing individual's behavior in later life. Research self-efficacy beliefs are affected by a number of variables, among which their research training experience is the most commonly cited.

Bandura (1997: as cited in Al-Mekhlafi and Taher, 2011) defines the term of self-efficacy as an individual's perceptions of his or her ability to perform a particular behavior. He argues that self-efficacy beliefs indicate how people think, feel, and motivate themselves. He adds that self-efficacy beliefs are more concerned with expectancy beliefs and judgments of one's perceived capabilities to perform certain tasks such as research skills in a specific context. Researchers in the field such as Bandura revealed that self-efficacy can impact the individual's life including psychological states, behavior and motivation (Cherry, 2023).

2.1 Previous Studies within the Framework of Research Skills

In Malaysia, Ismail & Meerah (2011) conducted a study to investigate the research competencies of doctoral students in Malaysia and abroad. They collected their data via questionnaires. They reported that both the graduate students who studied in local universities and those who studied abroad showed very high research skills. Moreover, there were no statistically significant differences

among the research skills possessed by those who graduated locally or abroad. They concluded that the local institutions were the same in acquiring the doctoral students the necessary research skills.

In Jordan, Khataybah and Jubran (2019) studied the role of the Jordanian universities in developing the research skills of postgraduate students. They collected their data via questionnaires that were distributed to 450 graduate students. They found that the role of the universities in building the research skills of the students was moderate. They concluded that the private universities are better than the state universities in building the research skills of their postgraduate students.

In the Russian Federation, Prosekov et al. (2020) conducted a case study in which they tried to develop the research skills and knowledge among Russian university students. Their sample comprised 74 first year students who were studying in the Institute of Education at Kemerovo State University in Russia. They collected the data of their study by means of a questionnaire. They divided the participants into experimental and control groups. In the post-test stage, the students of the experimental group who received research activities outperformed their counterparts in the control group.

In Palestine, Al-Alem and Badarneh (2021) studied the level of scientific research skills among graduate students in the Faculties of Education at Palestinian Universities as perceived by faculty members who supervise graduate students in writing their theses. They collected their data via 54 questionnaires distributed to faculty members. They reported that there were high research skills among the postgraduate students in the Faculties of Education as perceived by their supervisors. Furthermore, they found no statistically significant differences attributed to gender and years of experience of the faculty members.

In the Philippines, Magnaye and Malabarbas (2022) assessed the graduate student's research competencies. The sample consisted of 136 graduate students enrolled in the College of Education during the academic year 2018 – 2019. A questionnaire was the research tool through which they collected their data. The participants reported that they are "competent" in the research competencies with a mean score of 3.89 out of 5. They concluded that they have acquired the necessary research skills to carry out research studies by themselves.

In Ukraine, Marushkevych et al. (2022) assessed the levels of research competence among the postgraduate students of the Humanities. The sample was 158 graduate students studying in four institutions of higher education. They divided the graduate students into experimental and control groups. The study ran from 2019 to 2021. Their results showed that the students of the experimental group who were subjected to training in research activities outperformed the students of the control group.

In Nigeria, Afolabi et al. (2022) explored the research skills of postgraduate students in library schools. Their sample consisted of 161 postgraduate students in library schools in Nigeria. They collected their data via questionnaires. They found that the postgraduate students possessed high research competence. They reported that the Nigerian students were able to define a specific research problem and showed knowledge in forming relevant research questions, hypotheses and objectives.

In Romania, Iovu and Barbuta (2022) evaluated the research competencies of graduate students at the Romanian institutions. Their sample consisted of 242 Romanian students who were enrolled in the bachelor program at five universities. They collected their data online using questionnaires. They reported that the participants had moderate views about their own research competencies and knowledge. They concluded that there were no statistically significant differences in the variable of gender. However, the research competencies of the senior students were higher than that of the freshmen and sophomore students.

However, it seems there is a relative lack of research studies (that the researcher knew of, at least) that involve the research competencies and knowledge of Yemeni graduate students. Therefore, the current survey study will hopefully contribute to a better understanding of the self efficacy beliefs of Yemeni graduate students about themselves as competent researchers.

2.2 Previous Studies within the Framework of Gender Differences

The previous research work on gender differences claim that gender can have an important role and impact on the type of research skills and knowledge of male and female students. For example, Khataybah and Jubran (2019) reported gender differences in favor of males in regard to two domains, namely: academic courses and the university environment.

On the other hand, Al-Alem and Badarneh (2021) found no gender differences in the research skills and knowledge between the male and female participants in the Palestinian universities. Similarly, Iovu and Barbuta (2022) reported no differences existed in the research competencies of Romanian male and female students.

2.3 Terms Definitions:

This section intends to define the main concepts and terms that are used in the current research paper.

2.3.1 Self-efficacy beliefs:

Cherry (2023) defines this concept as a person's belief in their ability to complete a task or achieve a goal. They are individuals' general perceptions of their capabilities in different areas such as research skills and knowledge (Al-Mekhlafi, 2011).

2.3.2 Research Skills:

Marushkevych et al. (2022) define this concept as the students' ability to perform research. They add that the research skills also refer to the abilities and necessary skills to select suitable materials, critically evaluate information, draw relevant research conclusions, find innovative solutions to research problems as well as organizational and critical thinking.

2.3.3 Research Procedures:

Meerah et al. (2012: 632) define the research procedures as "understanding the limitations and scope of research design (for example, sample sizes and data type)".

2.3.4 Graduate students:

The researcher operationally defines the concept "graduate students" as Yemeni nationals who are enrolled in higher educational institutions doing either Master's or doctoral degrees in Yemen or abroad during the first semester of the academic year 2023- 2024.

3. The Current Study

In the Yemeni context, such studies are scarce. To the best knowledge of the researcher, there is no single study that has addressed the research skills of graduate students in the Yemeni universities. Thus, the researcher of the current study aims to explore the self-efficacy beliefs of Yemeni graduate students about themselves as competent researchers.

3.1 Significance of the Current Study

This research study will hopefully contribute to a better understanding of the self-efficacy beliefs of Yemeni graduate students about themselves as competent researchers. Thus, defining the research skills and knowledge may assist the Yemeni higher education institutions in areas such as graduate students development, research guides recruitment, reviewing the graduate studies programs and introducing innovative research practices. Furthermore, to effectively create change, the Yemeni policy makers, the leaders of the higher educational institutions and the research guides (supervisors) must understand the existing self efficacy beliefs of the Yemeni graduate students.

3.2 Objectives and Questions of the Study

The main objectives of this study are as follows:

- 1- To explore the self-efficacy beliefs of the graduate students at the Yemeni universities about themselves as competent researchers.
- 2- To ascertain if there are statistically significant differences between the self-efficacy beliefs of the graduate students based on the degree of study, i.e., the Master's degree vs. the PhD degree.
- 3- To ascertain if there are statistically significant differences between the self-efficacy beliefs based on gender.

This research study seeks to find answers to the following research questions:

- 1- What are the self-efficacy beliefs of the graduate students at the Yemeni universities about themselves as competent researchers?
- 2- Are there any statistically significant differences at the level of 0.05 between the self-efficacy beliefs of the graduate students based on their degree of study, i.e., the Master's degree vs. the Ph. D. degree?

- 3- Are there any statistically significant differences at the level of 0.05 between the self-efficacy beliefs of the male and female graduate students?

3.3 Limitations

In what follows, we present the limitations of the current research article. It is limited to examine the self efficacy beliefs of Yemeni graduate students who are enrolled in the Master's programs and the doctoral programs in the Yemeni universities during the first semester of the academic year 2023- 2024. Furthermore, it is limited to investigate the beliefs of the participants as expressed in response to the 74 statements of the questionnaire which is distributed on six domains. Another limitation is that the graduate students were not selected randomly, and thus caution should be taken in generalizing the results of this paper to other contexts.

3.4 Research Method and Procedures

The analytical descriptive approach is utilized in this research study because it fits well the nature and the objectives of the study. The quantitative research method is used to analyze the data of the study that were collected via closed questionnaires to collect relevant data from the participants.

3.4.1 Population and Sample

The population of this research study consisted of all the Master's and PhD students who are enrolled in the graduate programs at the Yemeni universities during the first semester of the academic year 2023-2024. The link of the online questionnaire was sent to the graduate students via the social media platforms such as Facebook and WhatsApp. (113) returned questionnaires were complete and suitable for analysis which indicates that the sample of the study was (113) graduate students enrolled at the graduate studies in the Yemeni universities. Table (1) below shows the demographic features of the sample of the study.

Table (1): Demographic Features of the Sample of the Study

Variable	Type	Frequency	Percentage
Program	MA students	57	50.44 %
	Ph D students	56	49.56 %
Gender	Male	55	48.7. %
	Female	58	51.3 %
University	Sana'a University	57	50.4 %
	Dhamar University	11	9.7 %
	Ibb University	9	7.96 %
	Aden University	7	6.2 %
	Taiz University	7	6.2 %
	Al-Andalos University	5	4.42 %
	Other	17	15.04 %
Age	20 – 25	8	7.1 %
	26 – 30	23	20.4 %
	31- 35	30	26.5%
	36 – 40	29	25.7 %
	41 – More	24	21.2 %
Major	English Education	44	38.9 %
	Linguistics	34	30.1%
	Translation	20	17.7 %
	Literature	6	5.3 %
	Other	9	8 %
Published an article	Yes	30	26.5 %
	No	78	73.5 %
Total		113	100%

Table (1) above shows the characteristics of the sample of the study. Of the (113) graduate students who participated in this study (57) or (50.44%) were Master's students and (56) or (49.56%) were doctoral students in the Yemeni universities. Furthermore, (55) or (48.7%) were male graduate students and (58) or (51.3%) were females. It is worth noting that almost half of the participants (57) or (50.4%) are graduate students at Sana'a University, while the rest come from other universities in Yemen. Most of the participants were in the (31 to 35) age range while the least group was (20 to 25) age group. The participants were asked to indicate whether they have published a research article in a journal or not. (30) or (26.5 %) of them have published a research article in a journal while the remaining (83) or (73.5 %) have not yet published any research articles.

3.4.2 Instrument

This research article is based on data that were collected by means of a closed ended questionnaire intended to elicit the self-efficacy beliefs of the Yemeni graduate students about themselves as competent researchers as well as their perceptions and views regarding the role of their research guides (supervisors). The researcher adapted the research instrument depending on the related body of literature with specific reference to Al-Mekhlafi (2011), Meerah et al. (2012), Al-Alem and Badameh (2021), and Marushkevych (2022). The survey questionnaire was created electronically using Google Forms and it was sent to the sample via Facebook and WhatsApp. The questionnaire consisted of three main sections. The first one collected demographic data of the sample. The second one consisted of (54) statements about the self-efficacy beliefs of themselves as competent researchers. The response scale for this section was the five point Likert-type scale: (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly disagree. The third section consisted of (20) statements that aimed to collect data about how the Yemeni graduate students perceive the role of their research guides. The response scale for this section was as follows: (1) very low, (2) low, (3) medium, (4) high, and (5) very high.

3.4.2.1 Validity and Reliability of the Questionnaire

Middleton (2023) defines the terms validity and reliability by stating that validity is "the extent to which the results really measure what they are supposed to measure". While reliability is the "extent to which the results can be reproduced when the research is repeated under the same conditions". She differentiates between the two terms by stating that a reliable tool is not necessarily valid because the results of the study might be reproducible, but they are not correct. On the other hand, a valid tool is reliable.

To check the validity of the questionnaire, the researcher translated the Arabic version of the questionnaire into English and then translated the English version back into Arabic and made the necessary changes. After that, it was sent to five faculty members in the Faculty of Education at Sana'a University to validate the survey questionnaire. They were requested to check the suitability and clarity of the statements of each domain. Their comments and suggestions were taken into consideration in refining the final version of the questionnaire which consists of six domains that contain (74) statements.

The reliability of the questionnaire and its domains were checked using Cronbach's Alpha. Alpha scores of the six domains and the whole instrument are shown in Table (2) below.

Table (2): Cronbach's Alpha Scores of the Domains of the Questionnaire

Domain	Example	No of Items	Cronbach's Alpha
Topic Selection & Introduction	I am able to formulate my research topic properly.	10	0.86
Literature Review	I have knowledge of the most important journals in my field.	16	0.82
Study Procedures	I follow appropriate criteria when selecting my research sample.	12	0.87
Results Presentation & Discussion	I am able to present the results of my study appropriately.	9	0.85
References	I know how to differentiate between a book, a journal, or a thesis in the list of References	7	0.66
Supervisor's Role	Selecting the appropriate title of the thesis	20	0.95
Total		74	0.95

Table (2) above shows that the reliability score of the whole measurement is (0.95) which indicates high reliability. That is we will get the same results when the measurement of the research study is repeated under the same conditions.

3.4.3 Data Analysis

After collecting the data electronically via Google Forms, the responses were computer-coded using the Statistical Package for Social Sciences (SPSS) program. The collected data were first analyzed to yield descriptive statistics, including frequencies and percentages on the sample's characteristics such as gender, age, name of the university where they study, the degree of study, and if they have published a research article in a journal or not. Second, the means, standard deviations as well as the t-test were used to measure the self-efficacy beliefs of the Yemeni graduate students about their competencies in the research skills as well as the perceived role of the research guide (supervisor). The significance level in this research was set at $P < 0.05$. The researcher used the following criteria for interpreting the results of the study. They appear in Table (3) below.

Table (3): The Criteria Used for Interpreting the Means of the Study

5 – 4.21	4.20 – 3.41	3.40 – 2.61	2.60 – 1.81	1.80 – 1.00
Very Competent	Competent	Neutral	Incompetent	Very Incompetent

4. Results and Discussion

To answer the first research question which states: "What are the self-efficacy beliefs of the graduate students at the Yemeni universities about themselves as competent researchers?", the means and standard deviations were computed. The results are displayed in Table (4) below.

Table (4): Means and Standard Deviations of the Self-efficacy Beliefs as Perceived by Yemeni Graduate Students in a Descending Order

Domain	N	Mean	Std. Deviation	Degree of Competence
Research Procedures	113	4.26	0.45	Very competent
References	113	4.25	0.49	Very competent
Topic Selection & Introduction	113	4.18	0.51	Competent
Results Presentation & Discussion	113	4.17	0.50	Competent
Literature Review	113	4.07	0.43	Competent
Supervisor's Role	113	3.88	0.66	Competent
Total	113	4.14	0.51	Competent

The results displayed in Table (4) above indicate that the total mean of the survey questionnaire was 4.14 with a standard deviation of 0.51. The Table also shows that the domain of the Research Procedures came first with a mean score of 4.26 with a standard deviation of 0.45. In the second place came the domain of References with a mean of 4.25 and a standard deviation of 0.49. In the third place came the domain of Topic Selection and Introduction with a mean score of 4.18 and a standard deviation of 0.51. Then came the domain of Results Presentation with a mean of 4.17 and a standard deviation of 0.50. After that, the domain of Literature Review came next with a mean score of 4.07 and a standard deviation of 0.43. In the last place came the domain of Supervisor's Role with a mean of 3.88 and a standard deviation of 0.66. What follows is an analysis of the Yemeni self efficacy beliefs about themselves as competent researchers in regard to each subscale.

4.1 The Research Procedures Subscale

The graduate students were requested to respond to twelve statements relating to their self efficacy beliefs about the Research Procedures subscale. The statements of the subscale and the mean scores are displayed in a descending order in Table (5) below.

Table (5) : Means and Items of the Research Procedures Domain

N	Statement	Mean	Degree of Competence
1	I consult my supervisor and then the validators about the validity and appropriateness of my research tools.	4.63	Very competent
2	When distributing my tools to the sample, I obtain the approval of my supervisor and the relevant authorities.	4.47	Very competent
3	I seek objectivity and honesty when selecting the sample.	4.44	Very competent
4	I follow appropriate criteria when selecting my research sample.	4.36	Very competent
5	I seek accuracy and clarity when selecting the scale through which the responses of the participants are determined.	4.29	Very competent
6	When constructing my research tools, I document all the sources that helped me to do so.	4.28	Very competent
7	I have the ability to choose the appropriate research method for my thesis.	4.27	Very competent
8	I can easily distinguish between the qualitative and the quantitative approaches when presenting the results of my study.	4.16	Competent
9	I leave the door open to the members of my sample to participate or not and I avoid convincing them to do so.	4.16	Competent
10	I have excellent knowledge of the main research methods in my field.	4.06	Competent
11	When analyzing the results of my study, I can choose the appropriate statistical method.	4.00	Competent
12	I have the skill of finding the coefficient scores of reliability and validity of my research tools.	3.95	Competent
Total		4.26	Very competent

The results displayed in Table (5) above show that the mean of the Yemeni graduate students on the Research Procedures subscale was 4.26 (Very competent). They also indicate that the means for the twelve statements regarding the Research Procedures ranged between 4.63 and 3.95. The highest rating was given to the statement: "I consult my supervisor and then the validators about the validity and appropriateness of my research tools" with a mean score of 4.63. While, the statement: "I have the skill of finding the coefficient scores of reliability and validity of my research tools" came in the last rank with a mean score of 3.95 (Competent).

4.2 The References Domain

The calculation of the mean scores of the seven statements relating to the Yemeni graduate students' self efficacy beliefs on the References domain was performed. The statements of this domain and the graduate students' responses are displayed in Table (6), below. These statements appear in a descending order to reflect how competent the graduate students felt about each statement of this domain.

Table (6): Mean and Items of the References Domain

N	Statement	Mean	Degree of Competence
1	I document all the references that occur inside the text of the thesis in the list of References.	4.58	Very competent
2	I avoid repeating the same reference in the list of References.	4.57	Very competent

N	Statement	Mean	Degree of Competence
3	I arrange the references of my study in an alphabetical order.	4.44	Very competent
4	I write down complete information of each reference according to APA style.	4.36	Very competent
5	I know how to differentiate between a book, a journal, or a thesis in the list of References.	4.23	Very competent
6	I know and adhere to the APA style of documentation.	4.14	Competent
7	I arrange the references in a chronological order	3.43	Competent
Total		4.25	Very competent

The mean scores shown in Table (6) above show that the overall mean of the graduate students on the References Domain was 4.25 (Very competent). The results also indicate that the participants believed that they were very competent in documenting all the references that occur inside the text of the thesis in the list of References with a mean of 4.58. They also believed that they were competent in arranging the references in a chronological order with a mean of 3.43.

4.3 The Topic Selection and Introduction Domain

The Yemeni graduate students were given ten statements to express their self efficacy beliefs about their competency in regard to the Topic Selection and Introduction subscale. Their responses are shown in Table (7) below.

Table (7): Mean and Items of the Topic Selection and Introduction Domain

N	Statement	Mean	Degree of Competence
1	I can write the objectives of my study correctly.	4.36	Very competent
2	When selecting my research topic, I take into consideration the problems and the issues of my field of study.	4.28	Very competent
3	I am able to formulate my research topic properly.	4.19	Competent
4	I have the ability to properly formulate my research questions or hypotheses.	4.19	Competent
5	I am able to formulate the abstract of the study correctly.	4.17	Competent
6	When selecting my topic, I am guided by the recommendations of the previous studies.	4.17	Competent
7	I am able to formulate the research limitations properly.	4.16	Competent
8	I am able to write down the significance of my study precisely.	4.13	Competent
9	I can define the new terms of the study very efficiently.	4.09	Competent
10	I can formulate the problem statement properly.	4.07	Competent
Total		4.18	Competent

This table shows that the overall mean of the whole domain was 4.18 (Competent). It also shows that the first statement "I can write the objectives of my study correctly" received the highest mean of 4.36 (Very competent). Whereas, the tenth statement of this domain (I can formulate the problem statement properly) came last with a mean of 4.07 (Competent).

4.4 Discussion of the Results

Referring to Table (8) below, the responses of the graduate students to the statements of the questionnaire expressed as a mean score to the nine statements of the subscale of Presentation and Discussion of the Results are presented. What follows is an analysis of the participants' self efficacy beliefs associated with this subscale.

Table (8): Mean and Items of the Domain of Presentation & Discussion of the Results

N	Statement	Mean	Degree of Competence
1	I am neutral and I avoid being bias when reporting the results of my study	4.53	Very competent

N	Statement	Mean	Degree of Competence
2	I am objective and I avoid directing the results to match my beliefs.	4.49	Very competent
3	I am able to present the results of my study appropriately.	4.28	Very competent
4	I can present the results of my study in tables according to the standards in my field.	4.24	Very competent
5	I am able to interpret the results of my study properly.	4.22	Very competent
6	I link the results of my own study with that of the previous studies in my field.	4.17	Competent
7	I can formulate appropriate recommendations.	4.15	Competent
8	I can analyze and discuss qualitative data properly.	3.78	Competent
9	I can analyze and discuss quantitative data properly.	3.70	Competent
Total		4.17	Competent

By looking at the results displayed in Table (8) above, it is clear that the overall mean of the subscale of the Presentation and Discussion of the Results was 4.17 (Competent). While the item: "I am neutral and I avoid being bias when reporting the results of my study" came first with a mean of 4.53 (Very competent). The statement which states that "I can analyze and discuss quantitative data properly" came in the last place with a mean of 3.70 (Competent).

4.5 The Literature Review Domain

The calculation of the means of the sixteen statements relating to the graduate students beliefs on the Literature Review domain were calculated. The statements, and the students' responses, are displayed in Table (9), below. The statements are ordered to reflect how competent the Yemeni students felt about each statement, in a descending order.

Table (9): Mean and Items of the Literature Review Domain

N	Statement	Mean	Degree of Competence
1	I am keen to avoid plagiarism and document all the sources in my thesis.	4.58	Very competent
2	I adhere to the diversity of my sources such as journals, books and theses.	4.46	Very competent
3	When documenting inside the body of my thesis, I make sure that the sources are correct.	4.38	Very competent
4	I have the necessary skills to evaluate and select the related previous studies.	4.32	Very competent
5	I stay away as much as possible from copying and pasting.	4.25	Very competent
6	When reviewing the previous studies, I indicate the position of my study.	4.23	Very competent
7	I observe and abide by the international standards that determine the percentage of citation.	4.20	Competent
8	I have the necessary ability and skills to determine the extent to which I have benefited from the previous studies.	4.11	Competent
9	I adhere to the standards of documentation within the text according to APA Style.	4.11	Competent
10	I have the necessary skills to show the basic elements of my thesis.	4.07	Competent
11	I analyze and criticize the sources that I use in my thesis.	4.00	Competent
12	When using quotations in my thesis, I differentiate between short quotations and the long ones.	3.98	Competent
13	When reviewing the literature, I use original sources and avoid the secondary ones.	3.92	Competent

N	Statement	Mean	Degree of Competence
14	When choosing a quotation, I use it as it appears in the source without addition or deletion.	3.89	Competent
15	I have knowledge of the most important journals in my field.	3.46	Competent
16	I find it difficult to write my thesis in accordance with academic writing standards.	3.11	Neutral
Total		4.07	Competent

Based on the results shown in Table (9) above, it is clear that the overall mean of the domain of the Literature Review was 4.07 (Competent). In the first place came the statement which states; "I am keen to avoid plagiarism and document all the sources in my thesis" whereas, the statement "I find it difficult to write my thesis in accordance with academic writing standards" came in the last place with a mean score of 3.11 (Neutral).

4.6 The Supervisor's Role Domain

The graduate students were asked to express their perceptions about their supervisor's role. They were given 20 statements that show the behavioral practices of their supervisors. The calculation of the mean scores of the Research Guide's Role subscale are presented in Table (10) below.

Table (10): Mean and Items of the Supervisor's Role Domain

N	Statement	Mean	Degree of Competence
1	Following the Academic Writing standards	4.20	Competent
2	Ensuring the validity and integrity of the study procedures	4.20	Competent
3	Reviewing the thesis before the viva voce examination	4.16	Competent
4	Choosing the appropriate research method	4.15	Competent
5	Documenting the references properly	4.11	Competent
6	Selecting the sample of the study	4.02	Competent
7	Being objective and not bias in reporting the results of the study	4.00	Competent
8	Choosing the suitable research tools.	3.97	Competent
9	Reviewing the chapters of the thesis	3.92	Competent
10	Following the standards of the APA style of documenting references	3.86	Competent
11	Analyzing the results of the study	3.81	Competent
12	Selecting the appropriate title of the thesis	3.80	Competent
13	Writing down the Literature Review and Previous Studies	3.77	Competent
14	Selecting the appropriate statistical tests and techniques	3.77	Competent
15	Diversity of the information sources	3.76	Competent
16	Formulating appropriate recommendations	3.76	Competent
17	Preparing the proposal of the study	3.69	Competent
18	Developing critical thinking skills	3.65	Competent
19	Developing selective reading skills	3.62	Competent
20	Selecting the suitable references	3.45	Competent
Total		3.88	Competent

Based on the mean scores that are shown in Table (10) above, the total average mean of the participants on the role of the supervisor was 3.88 (Competent). The results displayed in the table indicate that the means for the twenty statements regarding the supervisor's role ranged between 4.20 (Competent) and 3.45 (Competent). The highest rating was given to the statement: "The supervisor helps me follow the Academic Writing standards" with a mean score of 4.20 (Competent) and the item: "The supervisor helps me develop selective reading skills" came last with a mean of 3.45 (Competent).

4.7 Program of Study Differences

The second question of this research paper was to determine whether the Yemeni graduate students' self efficacy beliefs about themselves as competent researchers differ according to their degree of study. That is the Master's degree (MA) program versus the doctoral (Ph D) program. The researcher used the Independent Samples t Test to answer this question. The results are displayed in Table (11) below:

Table (11): Independent Samples t Test for Program Differences

	Program	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Procedures	Ph D	56	4.37	0.42	2.791	106	0.006
	MA	57	4.13	0.34			
References	Ph D	56	4.45	0.24	5.075	106	0.000
	MA	57	4.02	0.46			
Topic	Ph D	56	4.34	0.49	3.480	106	0.001
	MA	57	4.01	0.47			
Results	Ph D	56	4.33	0.47	3.360	106	0.001
	MA	57	4.01	0.49			
Literature	Ph D	56	4.16	0.44	2.310	106	0.023
	MA	57	3.97	0.41			
Supervisor	Ph D	56	3.91	0.73	0.445	106	0.657
	MA	57	3.85	0.59			
Total	Ph D	56	4.20	0.39	2.91	106	0.004
	MA	57	3.98	0.38			

Based on the results displayed in Table (11) above, the overall mean of the doctoral (Ph D.) students on their self efficacy beliefs about themselves as competent researchers was 4.20 while the mean score of their MA counterparts was 3.98. The means of the two groups were compared using an Independent Sample t- Test. This process resulted in a t- score of (2.92) ($P < 0.004$). It means that the difference between the two groups was statistically significant at $P < 0.05$. The results in the table show clearly that the doctoral students outperformed their MA counterparts in five out of six domains. The exception came in the Supervisor's Role subscale in which the doctoral students' self efficacy beliefs about the role of the supervisor were the same as that of the MA students. In other words, both the doctoral students and the MA students demonstrated the same self efficacy beliefs towards the role of the supervisor. The difference between their means was not statistically significant at $P < 0.05$. This finding supports the findings of Al-Mekhlafi (2020) who found differences in the perceptions of the graduate students in the Yemeni universities and the perceptions of the undergraduate student. He concluded that the higher the level of study the more positive attitude will be.

4.8 Gender Differences

To answer the third research question which states: " Are there any statistically significant differences at the level of 0.05 between the self-efficacy beliefs of the male and female graduate students ?", the researcher used the Independent Samples t Test. The results are displayed in Table (12) below.

Table (12): Independent Samples t Test for Gender Differences

	Program	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Procedures	Male	55	4.32	0.46	1.54	106	0.126
	Female	58	4.19	0.44			
References	Male	55	4.28	0.55	0.67	106	0.503
	Female	58	4.22	0.43			
Topic	Male	55	4.31	0.48	2.85	106	0.005
	Female	58	4.05	0.49			

	Program	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Results	Male	55	4.22	0.47	0.92	106	0.362
	Female	58	4.13	0.53			
Literature	Male	55	4.09	0.45	0.52	106	0.601
	Female	58	4.05	0.42			
Supervisor	Male	55	3.95	0.60	1.07	106	0.286
	Female	58	3.82	0.73			
Total	Male	55	4.16	0.38	1.58	106	0.115
	Female	58	4.03				

The results displayed in Table (12) above indicate that the overall mean score of the male graduate students on their self efficacy beliefs about themselves as competent researchers was 4.16 while the mean of their female counterparts was 4.03. The researcher compared the means of the males and the females using a T- test. The table shows that the T- score of the Independent Sample Test was (1.58) ($P < 0.115$). It clearly indicates that the difference between the males and the females was not statistically significant at $P < 0.05$. The results of all the domains show clearly that the male graduate students' self efficacy beliefs were the same as that of their female counterparts.

This finding supports the findings of Al-Alem and Badarneh (2021) who found no gender differences in the research skills and knowledge between the male and female participants in the Palestinian universities. Moreover, it lends support to the finding of Iovu and Barbuta (2022) who concluded that no differences existed in the research competencies of Romanian male and female students.

However, this finding contradicts that of Khataybah and Jubran (2019) who reported gender differences in favor of males in regard to two domains, namely: academic courses and the university environment.

5. Conclusion

The primary objective of this research paper was to explore the self efficacy beliefs of Yemeni graduate students about themselves as competent researchers. The second objective was to investigate any statistically significant differences among the graduate students of the doctoral program and the MA program in relation to their self efficacy beliefs about themselves as competent researchers. The third objective was to examine any differences related to gender. The data of this study were collected by means of an online questionnaire consisting of demographic information about the participants as well as 74 statements distributed over six domains of the self efficacy beliefs. 113 graduate students who were doing their MA and doctoral degrees in the Yemeni universities participated in the study. The results of this research paper show that the total mean of the whole questionnaire was 4.14 (Competent). They also indicate that the domain of the Research Procedures came first with a mean score of 4.26 (Very Competent) followed by the subscale of References with a mean of 4.25 (Very Competent). In the third and fourth place came the subscales of Topic Selection and Results Presentation with a mean of 4.18 (Competent) and 4.17 (Competent) respectively. Finally came the Literature Review $M. = 4.07$ (Competent) and the Supervisor's Role $M. = 3.88$ (Competent). This study reported statistically significant differences among the doctoral and MA students in favor of the doctoral program students. However, gender differences were not found statistically significant.

6. Recommendations

Based on the results of this research paper, the researcher suggests some pedagogical implications as follows:

1. The Yemeni higher education institutions' authorities should develop the graduate students' research competency through conducting specialized conferences, workshops and seminars.
2. The research supervisors should enhance their role in developing the research skills and knowledge of the graduate students.
3. The faculty members in the Yemeni higher education institutions specially those who teach Research Methods should conduct training sessions in which they build the research skills and knowledge of the graduate students.

4. The Higher Studies department in the Yemeni universities should train the graduate students on the components of a thesis or dissertation.
5. The Higher Studies department in the Yemeni universities should also conduct training sessions on using the SPSS program in analyzing research data.

The results reported in this research article suggest some future research directions as follows:

1. It would be a great idea to explore the research-related problems that the Yemeni graduate students face while conducting their theses.
2. Future research studies should compare the research skills and knowledge among the graduate students in the Yemeni universities and their counterparts who study abroad.
3. The future research studies should investigate how often the Yemeni graduate students spend time on research activities such as the preparation of term papers and research projects as well as participating in conferences, seminars and workshops.
4. Future research should study the research skills of the undergraduate students in the Yemeni universities.

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