

Factors Associated to Research Phobia Among Faculty Members at the Hashemite University in Jordan

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Abstract

The purpose of this study was to determine phobia factors and its association with research productivity of faculty members at the Hashemite University in Jordan. Educational preparation of faculty members, professional environment, and selected personal demographic characteristics were researched to determine the extent to which these factors contribute to research phobia. The results indicated that faculty members at the Hashemite University suffered, in average, high moderate of research phobia. Furthermore, there were no significant differences among faculty members in perceiving factors of research phobia that are attributed to their gender, mentoring relationship, academic rank, and age. Moreover, it was discovered that there was a positive, moderate, and significant relationship between research phobia and professional environment. However, the relationship between research phobia and educational preparation was found to be insignificant. Finally, results of the study indicated that professional environment, educational preparation, and selected demographic variables explained 21 percent of research phobia. Professional environment, which was the best predictor of research phobia, explained 14 percent of the variance, reflecting a positive, modest, and significant effect.

العوامل المرتبطة بفوبيا البحث لدى أعضاء هيئة التدريس في الجامعة الهاشمية في الأردن

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الملخص

سعت هذه الدراسة إلى تعرف العوامل المرتبطة بفوبيا الإنتاج البحثي لدى أعضاء هيئة التدريس في الجامعة الهاشمية في الأردن ودراسة تأثيراتها. وقد تم انتقاء البيئة المهنية لعضو هيئة التدريس، وإعداده التربوي، ومتغيرات ديمغرافية مختارة لدراستها. توصلت نتائج الدراسة إلى أن أعضاء هيئة التدريس في الجامعة الهاشمية يعانون بشكل عام الدرجة المتوسطة العليا من فوبيا البحث، إضافة إلى عدم وجود فروقات دالة بينهم في فوبيا البحث قد تعزى إلى المتغيرات الديمغرافية المختارة. كما أشارت نتائج الدراسة إلى وجود علاقة متوسطة وإيجابية ودالة إحصائياً بين فوبيا البحث لدى أعضاء هيئة التدريس والبيئة المهنية، فيما انتفت العلاقة الدالة بين فوبيا البحث والإعداد التربوي. وأخيراً، فقد أشارت نتائج الدراسة إلى التأثير الإيجابي الدال لكل من البيئة المهنية لعضو هيئة التدريس، وإعداده التربوي، والمتغيرات الديمغرافية المقترحة لأعضاء هيئة التدريس مجتمعة على فوبيا البحث لدى أعضاء هيئة التدريس، وقد تميزت البيئة المهنية عن غيرها من المتغيرات المدروسة بوصفها العامل التنبؤي الأكثر تأثيراً.

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Introduction

For many years, higher education institutions are expecting their faculty members to be productive researchers in addition to teaching. Research productivity has been recognized as a key variable related to faculty promotion, salary increase, and both university and faculty reputation (Hotard, Tanner, & Totaro, 2003). University faculty members have to deal with the pressure of handling multiple responsibilities of being researchers and instructors (Miller, 1994), which may have impacted their confidence to produce and publish research in respectful national and international journals. This lack of confidence, anxiety, or phobia related to research productivity can impede faculty efforts toward professional development.

Phobia and anxiety have been used interchangeably in the literature to imply the same concept. Phobia can be defined as danger and misfortune that is related to lack of confidence in one's ability to produce publishable research, thus hindering promotion and salary increase (Higgins, 2001). The fact that emphasis has been given to research in higher education has resulted in increased sense of phobia of faculty members (Bentley & Blackburn, 1990). Phobia has been regarded as one of the primary psychological variables in the field of education and has widely influenced higher education settings (Sax, Astin, Korn, & Gilmartin, 1999).

Phobia can come from a variety of sources, and can be grouped into three different categories as suggested by previous research (Higgins, 2001). The first category is educational preparation of faculties during their

graduate work. Students in graduate programs are expected to develop solid background and confidence in research skills, statistical analysis, and computer technology and library competency. These competencies can be determinants for future success (Wilson, 1999) and can increase the amount of research produced (Yang, Mohamed, & Beyerbach, 1999).

The second category is related to the professional work environment of the faculty member which may include pressure to publish, options of collaboration with other researchers, mentoring relationships, financial support of research efforts, teaching load, and performance (presentations, submissions) (Levine, 1997). Taking into account the great emphasis on research productivity as well as on teaching, time barrier become a factor in the amount of research produced. This notion was emphasized by Levine (1997) who found that faculties were facing difficulty in coping with research demands due to time constraints imposed by their role as good teachers. Not to mention other duties associated with their jobs such as meetings, seminars, and students' guidance. Their duties also proceed to include presenting and publishing their research studies at recognized journals and conferences (Wilson, 1999).

These entire process causes phobia to faculties especially when such conferences or journals are well respected and chances to publish is minimal. Moreover, unclear departmental expectations (Kelly & Warmbrod, 1986) and limited financial support (Olson, 1994) were also reported in the literature as possible factors leading to phobia and hindering research productivity efforts. Finally, mentoring and collaboration are important for new faculty members. Mentoring can impact career success and may aid in research productivity (Garofolo & Hansman-Ferguson, 1994).

The third category is related to selected personal and demographic characteristics of faculty members. A few studies were located that speaks about the differences in research phobia with regard to demographic variables. For example, gender was a factor in determining research phobia levels among male and female faculty members of higher education (Smith, Anderson, & Lovrich, 1995). Furthermore, King and Cooley (1995) noted that female faculty members experienced higher phobia when it comes to research productivity because they set high expectations for themselves. One study related to rank and age reported that the higher level of research

phobia experienced by the lower ranks, whereas some factors of research phobia do not decline with age (Gmelch, Lovrich,, & Wilke, 1984).

These sources of phobia may impact job satisfaction, relationship with students, self-confidence, performance, and may lead to problems in private life (Austin & Pilat, 1990; Richard & Krieshok, 1989). Therefore, for effective research productivity to take place, faculty members in institutions of higher education must understand more about research phobia and how to manage it appropriately.

Statement of the Problem

Faculties of higher education have been facing increased pressure to produce scholarly research. This type of pressure has caused phobia and anxiety among faculty members which may influence all aspects of professional and personal life. An investigation of the factors leading to phobia associated with research may be influential in increasing research productivity and minimizing research phobia among faculty members.

Purpose of the Study

The purpose of this study were to determine factors contributing to research phobia among faculty members at the Hashemite University, and to determine the significant differences among faculty members in perceiving factors of research phobia that are attributed to their gender, age, academic rank, and mentoring relationship.

Research Questions

To achieve the purpose of the study, the following research questions were formulated:

1. What are levels of research phobia as perceived by faculty members working at the Hashemite University?
2. Are there significant differences among faculty members working at the Hashemite University in perceiving factors of research phobia that are attributed to their gender, age, academic rank, and mentoring relationship?
3. What is the magnitude of relationship between research phobia and each

of educational preparation and professional environment?

4. What is the degree to which educational preparation, professional environment, and selected demographic characteristics contribute to research phobia among faculty members at the Hashemite University?

Importance of the Study

In the present time, a major emphasis has been placed on the importance of scientific research by many organizations including higher education institutions. Research productivity has many obvious benefits to an organization and is considered one of the most efficient methods in solving problems, improving performance, and creating opportunities. In higher education institutions, the pressure placed on scholarly research productivity has caused risen phobia levels among faculty members (Presley & Engelbride, 1998).

The study of determinants of research phobia among faculties of higher education has both practical and theoretical implications. From the practical standpoint, anxiety is considered one of the key factors that in a direct way influence the quality of the educational process and the performance of institutions. Moreover, educational research plays a role in the progress and development of those institutions (Dekkers & Treagust, 1983).

In this regard, findings of this study can help institutions remove obstacles to research productivity. From the theoretical standpoint, there is a lack of research in this area (Higgins, 2001) and further research efforts would shed more light on factors that can play a role in predicting phobia-related issues in relation to research productivity.

Definition of Terms

Phobia: A feeling of anger, fear, and anxiety expressed by people in certain situations (Wilson, 1999).

Research Phobia: Phobia associated with doing research by a faculty member (Higgins, 2001).

Limitations of the Study

1. Results of the study can only be generalized to faculty members at the Hashemite University.

2. Data were collected using a survey model.
3. Other factors may have interfered to influence the results of the study.

Methodology

Population and Sample

The population of the study included all faculty members at the Hashemite University who hold a rank of assistant professor or higher during the academic year 2004/2005. A list of faculty members was obtained from the registrar office to determine the population frame for the study. According to the list, the target population was 295. A simple random sample of 150 faculties was drawn from the established population frame.

Instrumentation

The instrument used to collect data in this study composed of four sections. The first three sections of the instrument were rated using a Likert-type scale ranged as follow: 1 “Strongly Disagree”, 2 “Disagree”, 3 “Neutral”, 4 “Agree”, 5 “Strongly Agree”. The first section of the instrument contained the Research Anxiety Inventory (RAI) and included 11 items. This section measures perceptions of faculty members regarding their confidence in designing, conducting, and publishing research. Section two contained the Professional Environment Inventory (PEI) and included 11 items. These items measure the work environment of faculty members as it relates to pressure to publish research and the support received from faculty, peers, and administration. The third section of the instrument contained the Education Preparation Inventory (EPI) with 11 items. This section measures how effective the graduate program of the faculty member in conducting research with sound statistical analysis. The final section included questions regarding demographic characteristics of the faculty members. All sections of the instrument were adapted from Higgins’ instrument (Higgins, 2001) and partially modified to fit the purpose of the study.

Validity and Reliability of the Original Version of the Instrument

With regard to validity issues, the original English version of the instrument went through the process of validation by a panel of experts from higher education settings. The validation process included face

validity, content validity, and construct validity. Moreover, the instrument was pilot tested with a group of 100 faculty members and used with 172 faculty members from higher education institutions in the United States. As far as reliability is concerned, the main scale of the study (the research anxiety scale) was factor analyzed and resulted in an overall alpha level of .78 (Higgins, 2001).

Instrument Translation Process

To ensure equivalence of meaning of the items and constructs between the Arabic and English versions of the instrument, a rigorous translation process was used that included forward and backward translation, subjective evaluations of the translated items, and pilot testing. The goal of the translation process was to produce Arabic versions of the instrument with items that were equivalent in meaning to the original English version (Sperber, Devellis, & Boehlecke, 1994). Two translators (faculty members) bilingual in English and Arabic translated the English version of the instruments into Arabic (forward translation). Translators were instructed to retain both the form (language) and the meaning of the items as close to the original as possible but to give priority to meaning equivalence. When the Arabic translation was finalized, the instrument was then back-translated (from Arabic to English) by two other faculty members, bilingual in English and Arabic.

The back-translated items were then evaluated by a group of three faculties to ensure that the item meanings were equivalent in both the original English version and the back-translated version. If differences in meaning were found between items, those items were put through the forward and back-translation process again until the faculties were satisfied there was substantial meaning equivalence. The Arabic version of the instrument was then pilot tested with a group of 10 faculties to collect feedback about instrument content and usage. The feedback from the faculties emphasized that the instrument has both face and content validity.

Instrument Standardization

The instrument was pilot tested with a group of 36 faculties to determine its reliability. These faculties' were excluded from the main sample of the

study. Changes recommended by the validation panel and those identified as needed during the pilot test were incorporated into the instrument. These changes occurred in the wording of items and in the instructions for completing the instrument. The internal consistency of the three sections of the instrument was determined using the same group of faculties used in the pilot study. The calculated coefficient alpha reliability for the RAI, PEI, EPI were determined to be .81, .79, and .81 respectively. This figure suggests that the instrument is suitable to measure research phobia among faculty members at the Hashemite University.

Data Collection

Data were collected from faculty members during the academic year of 2004/2005. Data were collected from 114 faculty members (76% response rate) representing various departments and academic disciplines within the Hashemite University. To ensure a representative sample, a certain percentage of faculty members from each department were randomly selected. The authors distributed and collected the surveys.

Results

All responses from the respondents on Research Anxiety Inventory (RAI), Professional Environment Inventory (PEI), Education Preparation Inventory (EPI), and Demographic Information Survey were coded, entered into the computer, and analyzed using SPSS (version 11.5). Accuracy of data entry was examined by inspecting the minimum and maximum values of each variable. An examination of these values showed that no “out of range” values were entered. In addition, missing subjects were not detected either.

Research Question 1: What are levels of research phobia as perceived by faculty members working at the Hashemite University?

Research question 1 addresses the research phobia levels of faculty members at the Hashemite University. The main factors of research phobia as measured by the Research Anxiety Inventory for Higgins (2001) are shown in Table (1). As can be observed, the mean for overall research anxiety factors was 3.83. This result indicates that faculty members at the Hashemite University suffer, in average, high moderate of research

phobia. To further elaborate on results of this question, it is observable from Table (1) that the lowest mean of research phobia was 3.54 (feeling uncomfortable when discussing research methods). Whereas, the highest mean was 4.48 (worrying about the possibility of the manuscript not being accepted for publication and worrying about the possibility of using incorrect data analysis). This result reveals that factors of research phobia have had high moderate to high influence on faculty members' confidence in designing, conducting, and publishing research. Further, the variability of scores in factor 8 (needing to improve statistical skills ($SD= 1.3$) is greater than other factors (see Table 1).

Table 1
Responses on Research Anxiety Inventory (Ordered by Means)

Factor	Means	SD
When I conduct research, I worry about the possibility of the manuscript not being accepted for publication.	4.48	.55
When I conduct research, I worry about the possibility of using incorrect data analysis.	4.48	.67
When reading research articles, I am apprehensive about being able to synthesize the findings.	3.95	.85
It bothers me that my research may not be judged as quality work.	3.81	1.10
It bothers me that my research may not be judged as accepted by reviewers for research journals.	3.74	1.28
I have difficulties reviewing manuscripts for refereed research journals.	3.73	1.09
When I conduct research, I fear that it is poor compared to others in my field.	3.64	1.20
I need to improve my statistical skills.	3.61	1.30
I need to improve my research skills.	3.60	.85
When working on a research project, I experience anxiety.	3.57	.99
I often feel uncomfortable when discussing research methods.	3.54	1.25
Overall	3.83	1.02

Research Question 2: Are there significant differences among faculty members working at the Hashemite University in perceiving factors of research phobia that are attributed to their gender, age, academic rank, and mentoring relationship?

Research question 2 concerns differences among faculty members at the Hashemite University in perceiving factors of research phobia. The

following demographic variables: gender, mentoring relationship, academic rank, and age, were investigated. T-tests for independent samples were used to examine both the gender variable and the mentoring relationship variable regarding research phobia.

As shown in Table (2) and Table (3), there were no significant differences among faculty members at the Hashemite University in perceiving factors of research phobia that are attributed to their gender or mentoring relationship ($\alpha < .05$). Examining the confidence interval of t value of the effect of gender (-.135, .303) and the effect of mentoring relationship (-.125, .256) on factors of research phobia as perceived by faculty members confirmed the conclusion of no difference are attributed to the gender or the mentoring relationship because “0” falls within these intervals.

Table 2
The Differences between Faculty Members’ Males and Females in Perceiving Factors of Research Phobia

	Gender	N	Means	t	95% Confidence Interval of the Difference	p
Research Phobia	M	86	3.87	.759	(-.135, .303)	.450
	F	28	3.78			

Table 3
The Differences between Faculty Members who had Mentoring and who had No Mentoring in Perceiving Factors of Research Phobia

	Mentoring	N	Means	t	95% Confidence Interval of the Difference	p
Research Phobia	Yes	60	3.87	.680	(-.125, .256)	.498
	No	54	3.81			

On the other hand, one-way analysis of variance was utilized to identify whether the variances of the three level groups of academic rank and the variances of the four level groups of age of faculty members at the Hashemite University were equal or significantly different.

Table (4) shows that there were no significant differences among the three rank level groups (full, associate, and assistance professor) in perceiving

factors of research phobia. Similarly, Table (5) reveals that there were no significant differences in perceiving factors of research phobia among the four level groups of age (30-39, 40-49, 50-59, and above 60).

Table 4
The Differences among the Three Rank Groups (Full, Associate, or Assistance Professor) in Perceiving Factors of Research Phobia

	Sum of Squares		df	F	p
Research Phobia	Between Groups	.070	2	.138	.871
	Within Groups	27.197	109		
	Total	27.524	111		

Table 5
The Differences among the Four Age Level Groups (30-39, 40-49, 50-59, and above 60) in Perceiving Factors of Research Phobia

	Sum of Squares		df	F	p
Research Phobia	Between Groups	.934	3	1.265	.290
	Within Groups	26.590	108		
	Total	27.524	111		

Research Question 3: What is the magnitude of relationship between research phobia and each of educational preparation and professional environment?

The Pearson production moment correlation coefficient (r) was utilized to answer this question. The means of respondents' scores on Research Anxiety Inventory (RAI) were correlated with the means of respondents' scores on Professional Environment Inventory (PEI) and on Educational Preparation Inventory (EPI).

Table (6) illustrates that the correlation between research phobia and professional environment is moderate, positive, and significant at the .01 level.

Table 6
Correlations between Research Phobia and Professional Environment

	Pearson's r	Significance
Professional Environment	.390**	.014

**Correlation is significant at the 0.01 level (2-tailed).

However, Table (7) shows that the correlation between Research Phobia and Educational Preparation is $-.062$, which is negative and not significant at the $.05$ level.

Table 7
Correlations between Research Phobia and Educational Preparation

	Pearson's r	Significance
Professional Environment	$-.062$.518

Research Question 4: What is the degree to which educational preparation, professional environment, and selected demographic characteristics contribute to research phobia among faculty members at the Hashemite University?

Question 4 addresses the degree to which educational preparation, professional environment, and selected personal demographic characteristics contribute to research phobia of faculty members at the Hashemite University. A multiple regression model was used to compute the overall strength of the relationship, R^2 , between the dependent variable and all independent variables combined.

As can be observed in Table (8), the overall strength of the relationship between the stated variables was $.217$, indicating a significant overall strength at the $.05$ level ($p < .0001$).

Table 8
Strength of the Relationship between Research Phobia and Independent Variables

R	R ²	Std. Error of the Estimate	F Change	p
.466 ^a	.22	.432	4.624*	.000

*Significant at the $p < .05$ level.

To further elaborate on the overall strength of relationship between research phobia and independent variables, the unique effect of each independent variable (educational preparation, professional environment, gender, academic rank, mentoring relationship, and age) was computed, controlling for the other independent variables. Hierarchical entry of the independent variables technique was used to extract the variance of the variable included first and continue to build up the regression solution by adding portions of variances of other independent variables, uncorrelated with independent variables already included. The results presented in Table (9) indicates that professional environment ($p < .01$) and educational preparation ($p < .05$) were the most predictors of research phobia and accounted for (.146) and (.034) of the variances in research phobia respectively. Academic rank ($\Delta R^2 = .007$), mentoring relationship ($\Delta R^2 = .015$), age ($\Delta R^2 = .014$), and gender ($\Delta R^2 = .001$), were found to be insignificant ($p < .05$).

Table 9
The Unique Effect of Each Independent Variable on Research Phobia

Variables	β	t	R	R ²	ΔR^2	ΔF	p
Professional Environment	.374	4.636	.383	.146	.146	18.009**	.000
Educational Preparation	-.145	-.209	.425	.180	.034	4.326*	.040
Academic Rank	.013	.164	.433	.187	.007	.869	.353
Mentoring Relationship	-.077	-.875	.450	.203	.015	1.958	.165
Age	.076	1.354	.465	.217	.014	1.802	.182
Gender	-.029	-.267	.466	.217	.001	.071	.790

The ΔR^2 result is the increase in R^2 due to adding each independent variable last, given the other independent variables.

Discussion and Conclusions

This study was an investigation of determinants of phobia associated with research productivity of faculty members at the Hashemite University in Jordan. Although the current study does not allow causal links between the dependent and independent variables to be made, it has questioned a number of commonly held views about the extent to which some factors contribute to research phobia. These factors included educational preparation faculty members received during their graduate work, their professional work environment, and selected demographic characteristics of faculty members.

The findings of this study indicated that research phobia exists among faculty members at the Hashemite University. Considering that the average score was 3.83, research phobia has had moderate high effect on faculty members' confidence in designing, conducting, and publishing research. Moreover, two factors (worrying about the possibility of the manuscript not being accepted for publication and worrying about the possibility of using incorrect data analysis) were pointed out as sever factors on increasing research phobia among faculty members. Taking into account the fact that most faculty members at the Hashemite University are new hiring professors and have limited or no published research, the worry about the possibility of the manuscript not being accepted for publication might be justified. Moreover, the worry about the possibility of using incorrect data analysis might be an indicator of noticed weaknesses among many researchers in selecting correct analysis techniques and/or conducting these techniques (statistical dilemma).

Another strand of results regarding demographic variables reveals that gender, academic rank, mentoring relationship, and age had no effect on research phobia among faculty members. In line with other research, studying the effect of gender on research phobia among faculty members indicated that the result of this study is not consistent with studies of Smith et al. (1995) and King and Cooley (1995) were female faculty members experienced higher phobia when it comes to research productivity than male faculty because they set high expectations for themselves. Moreover, the finding of the effect of academic rank on research phobia, that no significant effect was detected, is not consistent with the study of Gmelch,

Lovrich, & Wilke, (1984) that higher levels of research phobia experienced by the lower rank than the higher rank.

In terms of relationship between research phobia and professional environment, the finding of this study somewhat moderately reflected the expected positive and significant relationship in literature. Time constraints, pressure to publish, financial support of research efforts, teaching load, and similar causes increase research phobia among faculties (Levine, 1997; Olson, 1994). However, the negative sign of the non-significant correlation between research phobia and educational preparation reflects the reverse relationship between the two variables. In other words, adequate educational preparation minimizes research phobia among faculties.

With regard to the regression model, the findings of this study indicate that educational preparation, professional environment, gender, academic rank, mentoring relationship, and age together predicted 21 percent of the variance in research phobia. Furthermore, the overall strength of the relationship ($R^2 = .21$), reflecting a positive, somewhat moderate, and significant overall strength of the relationship between research phobia and educational preparation, professional environment, gender, academic rank, mentoring relationship, and age. In addition, the overall strength of the relationship ($R^2 = .21$) indicated that about 21 percent of the variability of research phobia was explained by the stated independent variables.

Professional environment, which was the best predictor of research phobia, explained 14 percent of the variance, reflecting a positive, modest, and significant effect on research phobia. Educational preparation explained 3 percent of the variability of research phobia, reflecting a modest but significant effect on research phobia. In contrast, the unique contribution of gender, academic rank, mentoring relationship, and age shows an insignificant contribution to research phobia among faculties. This finding reflects the difference between the theoretical propositions of the expected important effect of the included independent variables (gender, academic rank, mentoring relationship, and age) on research phobia among faculties and the practical effects of these variables concluded from the findings of the study. Therefore, the limited variability explained by the proposed variables support looking for other variables that might have more impact on research phobia among faculties.

Managing Research Phobia: Implications and Recommendations

Some of the findings reported here carried important implications. First, research phobia was existed among faculty members at the Hashemite University. Faculty members suffered, in general, high moderate of research phobia. Therefore, this level of research phobia should be managed not neglected. Attention should be devoted to relieve some of the phobia associated with research productivity that the faculty members at the Hashemite University experience. In other words, faculty members need to initiate systematic discussions on ways to reduce, cope with, and eliminate phobia related to research productivity.

Moreover, it is becoming increasingly important to be aware that faculty members' ability to design, conduct, and publish research within institutions of higher education is maximized and research phobia declined through opportunities to share faculty member knowledge, skills, and experience with other faculties.

Second, professional environment was the main factor contributing to research phobia among faculty members at the Hashemite University. Attention to improve faculty members' work environment, therefore, becomes critical if the Hashemite University is seeking to gain a high rank as a research institution. For example, Hashemite University should reduce the amount and volume of teaching load, reduce the volume of administrative responsibilities, provide a positive and energetic environment in which quality research and sustained productivity are the norm, and facilitate participation in organized research units or collaborative groups (Milburn & Brown, 2003).

Third, although educational preparation has had a modest but significant effect on research phobia and did not correlated significantly with research phobia, when studying in a graduate program, attention should be given by expected faculties to develop a solid background and confidence in research skills, statistical analysis, and computer technology competency.

Finally, although the statistical differences in relating to gender, rank, and age may not appear to be significant, the trend should not be ignored. Priority must be given to providing support for new hiring and female faculty members seeking to establish their respective professional identities.

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