Individual Characteristics and Research Attitudes, Intentions, and Behaviors: The Experience of a Private Business College

Nicholas J. Barnes
Nichols College

Nadia Khalil
University of Massachusetts Dartmouth

Nora Ganim Barnes
University of Massachusetts Dartmouth

Omar Khalil
Kuwait University

The purpose of this study is to explore a faculty's research attitudes, intentions, and behaviors (i.e., productivity) as well as the influence that a number of individual characteristics could have on research-related variables at a private business college. The results indicate that although the faculty hold favorable attitudes toward research and have strong intention to engage in future research, their actual research productivity is low. In addition, the individual characteristics of age, marital status, time spent on research, and time spent on teaching variably influence research productivity.

Keywords: research, productivity, attitude, behavioral intention

INTRODUCTION

Although faculty at Higher Education (HE) institutions are expected to be productive in research, teaching, and service (Fairweather, 2002), greater emphasis has lately been placed on research productivity (Brew et al., 2016; Leišytė, 2016; Bland et al., 2004; Teodorescu, 2000; Hearn, 1999). Research productivity has become an important criterion for recruitment, tenure, and promotion decisions. Policy makers at HE institutions, therefore, continue to be concerned about both achieving maximum research productivity of faculty and the effect of context on such productivity (Leišytė, 2016; Angaiz, 2015).

The extant literature suggest that research performance is a social phenomenon that could be explained through a multiplicity of constructs where the significance of each construct is contingent on the distinct characteristics of the individual faculty member and the workplace (Levitan and Ray, 1992; Hardré et al., 2011; Jackson, 2004; Lee and Rhoads, 2004; Chen et al., 2010). In addition, social psychology theories (e.g., the Theory of Reasoned Action and the Theory of Planned Behavior) have postulated that individuals' behaviors can be partially explained by their attitudes and behavioral

intentions (Fishbein and Ajzen, 1975; Ajzen, 1985, 1987). Therefore, one may explain differences in faculty's research productivities (behaviors) by knowing their research attitudes and intentions (Clark, 2010; Stanton et al., 2009; Khalil and Khalil, 2018).

Nevertheless, the lack of empirical evidence on research productivity and its influencing factors in a particular HE institution risks the adoption of effective policies aimed at improving research productivity at that institution (Nygaard, 2017; Leišytė, 2016; Creswell, 1985). In addition, the cultural differences and policy dissimilarities challenge the generalizability of the findings from one HE institution to another (Teodorescu, 2000; Hardré et al., 2011; Fairweather, 1999). This study investigates research attitude, intention and behavior as well as their influencing individual characteristics at a private college located in the northeast part of the United States. The impetus of this study is to put forward empirically-based implications for research enhancing policies.

Purpose and Research Questions

The average research productivity of faculty tends to be low and varies from one institution to another, from one discipline to another, and from one faculty to another in the same discipline (Khalil, 2018; Fairweather 2002; Fox 1983; Allison 1980). Knowing why some faculty members are more scholarly productive than are others and what factors influence such productivity is therefore essential to scholarly productivity improvement efforts (Khalil, 2018; Creswell 1985). The purpose of this study is to explore the faculty's research attitudes, intentions, and behaviors (i.e., productivity) as well as the influence that a number of individual characteristics could have on these research-related variables at a private college located in the northeast part of the United States.

The extant literature proposes a number of individual characteristics—e.g., gender, age, rank, tenure, innate scientific ability, motivation, communication skills, personality type, preference for research, and career stages—that could influence a faculty member's research productivity (Khalil, 2018; Hardré et al. 2007, 2011; Jackson 2004; Lee and Rhoads 2004; Sax et al. 2002; Fox 1983; Creswell 1985). Yet, most, if not all, of the research productivity studies have explored the influence of individual characteristics on research behavior (productivity), and almost none have examined the influence of individual characteristics on research attitudes and intentions (Khalil, 2018).The study is designed to explore two main questions: (1) What are the research attitudes, behavioral intentions and behavior of the faculty in the investigated institution? And (2) What are the influence of the individual characteristics of gender, age, marital status, tenure, academic rank, experience, time spent on research, and time spent on teaching on the faculty's research attitudes, behavioral intention, and behavior?

REVIEW OF LITERATURE

A greater emphasis has recently been placed on research productivity in HE institutions (e.g., Brew et al., 2016; Leišytė, 2016; Angaiz, 2015; Hearn, 1999). Research productivity has contributed to scientific literature and brings credibility and acclaim to the individual scholars and their institutions (Tien and Blackburn, 1996; Hardré et al., 2011). Nevertheless, research productivity has been one of the most challenging and baffling problems in the sociology of science (Gaston, 1978, p. 133). Researchers have long sought explanations for faculty research performance using a complex set of correlates or determinants (Khalil, 2018).

Research Attitude, Intention, and Behavior

Since research behavior is a social phenomenon, research models designed to investigate that behavior could draw on behavioral theories from social psychology (e.g., the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975) and the Theory of Planned Behavior (TPB) (Ajzen, 1985, 1991) to identify and investigate factors that can possibly explain research intentions and behaviors. These theories stipulate that attitude (ATT) is a determinant of behavioral intention (BI), and behavior (BA) is a function of BI.

ATT towards a behavior (e.g., research) comprises positive or negative appraisals of performing that behavior and the consequences of so doing (Ajzen 1985, 1991). ATT also describes one's feeling of favorable or unfavorable for a behavior based on the consequences of the behavior and the importance of the effects (Fishbein and Ajzen, 1975; Ajzen, 1991). ATT is linked to BA through its effect on BI (Ouellette and Wood, 1998).

The BI to perform a behavior (BA) such as research is a function of one's attitude (ATT) towards that BA. BI is a state of desire-plus-belief to be converted into a disposition to act (Veludo-de-Oliveira, 2009; Feldman, 1999, p. 319-320; Bagozzi and Yi, 1988). BI is a motivational construct and an indication of an individual's readiness to perform a given behavior (e.g., research) and is deemed to be the immediate antecedent of behavior (Ajzen (1985, 2006a, 2006b). However, establishing and implementing an intention may involve minimal or substantial effort and ability, depending on the difficulty of the behavior and how easy it is to anticipate changes in the environment (Ouellette and Wood, 1998; Eagly and Chaiken, 1993). This study measures research attitude, intention, and behavior (productivity).

The Influence of Individual Characteristics

Researchers have long sought explanations for faculty research performance using a complex set of correlates or determinants (e.g., Hu and Gill, 2000; Hardré et al., 2011; Creswell, 1985; Fox, 1983; Gaston, 1978). Fox (1983), for instance, classified the factors that could influence research productivity into four groups, including individual characteristics, cumulate advantages (e.g., capabilities and skills), feedback processes, and discipline norms. Nevertheless, the extant literature suggests a number of individual characteristics (e.g., gender, age, marital rank, tenure, innate scientific ability, motivation, communication, personality type, tolerance of ambiguity and abstraction, work habits, preference for research, and career stages) that could individually or collectively influence a faculty member's research productivity (Callaghan, 2017; Brew et al., 2016; Hardré et al. 2007, 2011; Jackson, 2004; Lee and Rhoads, 2004; Sax et al., 2002; Fox, 1983; Creswell, 1985, p. 32-34). This study explores the influence that gender, age, marital status, tenure, academic rank, experience at HE, time spent on research, and time spent on teaching could have on research AT, BI, and BA.

Gender could influence research productivity (Angaiz, 2015; Sax et al., 2002; Hardré et al., 2011). Men have appeared to sustain higher productivity levels throughout their careers than have their female counterparts (Callaghan, 2017; Albert et al., 2016; Creswell, 1985, p. 33). These differences could be related to the tendency of female faculty to spend more time on teaching, academic advising, and service responsibilities as well as on household responsibilities (Angaiz, 2015). Female faculty, however, hold more favorable attitudes toward research than do male faculty (Khalil, 2018). The gender's effect could be exasperated by marital status. Marriage expectedly adds more household responsibilities and consumes more time, especially for women, that could be otherwise used for research, However, some studies (e.g., Opesade et al., 2017; Aggarwal, 2012; Chen et al., 2010) have suggested an insignificant relationship between research productivity and gender. In addition, research on the role of family-related factors, such as marital status, in research productivity has produced mixed results (Sax et al., 2002; Creamer, 1998).

Chronological age could also influence research performance positively or negatively (Khalil, 2018; Hedjazi and Behravan, 2011; Stafford, 2011; Bland et al., 2004). While the average productivity of faculty tends to decline with age (Marini, 2017; Albert et al., 2016: North et al., 2011), many older faculty members remain active in research (Khalil, 2018). Besides, the relationship between age and research productivity could be influenced by other factors such as academic rank, work experience, academic qualification, and extrinsic and intrinsic motivators. Therefore, age could operate differently at different stages of a professional career.

Experience at HE is a correlate of age as well as of research productivity (Angaiz, 2015; Jung, 2012; Bland et al., 2002). The influence of experience at HE on productivity is not only because of chronological age, but also because of experiences gained from having higher academic ranks, higher academic qualifications, and work experience (Angaiz, 2015). However, Khalil (2018) found the less experienced faculty to have stronger research intention and productivity than do the more experienced counterparts.

Tenure may influence research productivity. Intrinsic and extrinsic motivators could variably influence research productivity of the tenured and non-tenured faculty members through their professional careers (Hu and Gill, 2000; Chen et al., 2010; Hardré et al., 2011). While non-tenured faculty could be extrinsically (e.g., attaining tenure) and/or intrinsically (e.g., passion for research) motivated to do research, tenured faculty could be mainly intrinsically motivated (e.g., beliefs and expectations of success) to sustain research productivity. Subsequently, a faculty member's productivity could rise at the early stages of his/her career in order to fulfill tenure requirements. Once tenured and with a secured job, research productivity may decline.

Likewise, academic rank is a significant predictor of research productivity (White et al., 2012; Hedjazi and Behravan, 2011; Hardré et al., 2011; Brocato and Mavis, 2005; Bland et al., 2004). A number of studies found a positive correlation between academic rank and research productivity variables (Khalil, 2018; Hedjazi and Behravan, 2011; Stafford, 2011; North et al., 2011; Brocato and Mavis, 2005; Bland et al., 2004), as research productivity is a requirement for tenure and promotion to higher academic ranks. However, Albert et al. (2016) found academic rank to have no influence on research productivity.

Lastly, time spent on research and time spent on teaching could influence research productivity. Research effort, which demands time, influences research productivity variables (Khalil 2018; Khalil and Khalil, 2018; Leišytė, 2016; White et al., 2012; Hardré et al., 2011, 2007). Productive researchers have been shown to spend at least one-third of their time on research (Creswell, 1985). Devotion of time for research activities early in a career could also determine or predict research productivity (Bland et al. 2002, 2004). Subsequently, time spent on teaching is considered an obstacle to research productivity (Khalil, 2018; Jung, 2012; Iqbal and Mahmood, 2011; Hattie and Marsh, 1996). Greater time spent on teaching relates to less research productivity (Lodhi, 2011; Stafford, 2011; Hardré et al., 2007, 2011; Alghanim and Alhamali, 2011; Chen et al., 2010). Nevertheless, studies on the relationship between research and teaching have produced mixed results depending on the variables investigated and the way they were measured (Ovington et al., 2003).

Although ample results on the influence of these individual characteristics on research productivity are available, the generalizability of such results across dissimilar contexts and work environments is difficult. In addition, research on the influence of individual characteristics on research attitude (AT) and intention (BI) is scant.

RESEARCH METHOD

This study adopted a survey approach in a single organization. As a single case study, this approach provides the opportunity to understand the problem being investigated, but the conclusions drawn may be specific to the organization studied and may not be generalizable (Gable, 1994). The use of a survey enabled quantitative manipulation of the research variables and the discovery of relationships that are common across the organizational units in the research setting. A brief description of the variable measurement, sampling, data collection, and data analysis procedures follows.

Research Setting and Sampling
The research setting is a small, private, not for profit, business college located on a suburban campus in the Northeast part of the United States. The school has a long history and was established in 1815 for business education. The school has over 1200 undergraduates, approximately 200 graduate students, 121 full and part-time faculty, and almost 100 staff. The degrees offered include a BSBA with 11 possible concentrations and BA in 7 different majors. On the graduate level the school offers an MBA and 4 MS degrees.

Sample Profile
Appendix A depicts the characteristics of the research sample. Half of the faculty members in the sample are female; 64% are 41 years old or older; the majority (87%) are married; 75% are non-tenured; and 50% have more than 10 years of work experience at HE. As to the academic rank, 46% are assistant,

17% are associate, and 13% are full professors. Eighty-eight percent of the faculty teach at least four courses per semester. Lastly, the faculty spend approximately 68% and 12% of their time on teaching and research, respectively.

Procedure

The data collection instrument was adapted from Khalil and Khalil (2018), who developed and validated the original instrument. The instrument consists of two sections. Section (1) was designed to collect data on the individual characteristics of the respondents and their research behavior (frequency of research performance in the last three years). Section (2) was designed to solicit the respondents' agreements/disagreements with each of the statements representing the items measuring intention and attitude. The instrument was slightly revised to fit this study context; then, three faculty members from the investigated institution piloted the instrument for readability. A few minor issues were cited and fixed in the final version of the instrument.

Data Collection

The full-time faculty (N=44) who have some level of research expectation were surveyed by putting hard copy surveys into faculty mailboxes. Twenty-four surveys (55%) were filled out and returned over a 45-day period. All of those returned were usable surveys.

Measurement

1. The independent variables: These variables include the individual characteristics of gender, age, marital status, tenure, experience at HE, academic rank, time spent on research, and time spent on teaching. Information pertinent to each of these variables was collected using a single item in the survey.

2. The dependent variables:

   (a) Research productivity (BA)**:** BA refers to journal articles, edited books, monographs, chapters in edited books authored or co-authored, (2) number of conference presentations authored or co-authored, and (4) self-rating of one's research productivity compared to colleagues in the same discipline. These items were adapted from Khalil and Khalil (2018).

   (b) Research Attitude (AT): A direct measure of ATT to assess the overall evaluation of performing research (Ajzen 2006a) is adapted from Khalil and Khalil (2018). Five items (in Appendix B), which considered both affective and instrumental facets of ATT (Ajzen 2006a), were rated.

   (c) Behavioral Intention (BI): BI refers to a faculty member's readiness to do research in the future. Four items that are commonly used to assess INT in TPB-based studies (Ajzen, 2006a) were adapted from Khalil and Khalil (2018). The items are exhibited in Appendix B.

ANALYSIS AND RESULTS

The Faculty's Research Attitudes, Behavioral Intentions, and Behavior

Descriptive statistics were used to characterize the faculty's research productivity (behavior). Table 1 provides the frequency distributions of the research productivity (BA) indicators in the last three years. Only 24% of the faculty reported having one or more funded research projects; 67% reported having one or more peer-reviewed publications, and a higher percentage (79%) reported having one or more conference papers. However, the faculty self-rated their research productivity compared to colleagues in the same academic field to be at least average.

TABLE 1
FREQUENCY DISTRIBUTIONS FOR THE RESEARCH PRODUCTIVITY INDICATORS

	Frequency	Valid %	Cumulative %
Funded Research Projects (FRP)			
None	17	73.9	73.9
1-3	5	21.7	95.7
4-6	1	4.3	100.0
7-9	0	0.0	100.0
10 or more	0	0.0	100.0
Missing	1		
Peer Reviewed Publications (PRP)			
None	8	33.3	33.3
1-3	10	41.7	75.0
4-6	3	12.5	87.5
7-9	1	4.2	91.7
10 or more	2	8.3	100.0
Conference Presentations (CP)			
None	5	20.8	20.8
1-3	8	33.3	54.2
4-6	8	33.3	87.5
7-9	3	12.5	100.0
10 or more	0	0.0	100.0
Self-Rated Research Productivity (SRP)			
Very low	2	8.3	8.3
Low	7	29.2	37.5
Average	6	25.0	62.5
High	5	20.8	83.3
Very high	4	16.7	100.0

A t-test was applied to assess whether the average scores of the research behavior (productivity) indicators were significantly different from the midpoint value of the measuring scale (0 - 4). Table 2 depicts the minimal, maximal, average scores, standard deviations, and the productivity level for each of the research productivity indicators. A *P-Value* of .05 or less indicates that the difference above or below the midpoint is significant (Table 2). In the last three years, the faculty reported low productivity of funded research projects (FRP) (mean = 0.30), low productivity of peer-reviewed publications (PRP) (mean = 1.13), and low productivity of conference presentations (CRP) (mean = 1.38), but they moderately rated their productivity compared to colleagues in the same discipline (SRP) (mean = 2.08).

TABLE 2
DESCRIPTIVE STATISTICS FOR THE RESEARCH PRODUCTIVITY (BA) VARIABLES

	N	Min	Max	Mean	Std. Dev	P-Value	Productivity Level (based on the mean)
FRP	23	0	2	0.30	.559	0.000*	Low
PRP	24	0	4	1.13	1.191	0.000*	Low
CRP	24	0	3	1.38	.970	0.000*	Low
SRP	24	0	4	2.08	1.248	0.398	Average

* Significant at $\infty = .05$

A factor analysis was conducted to reduce the data set and identify the research attitude (AT), intention (BI), and behavior (BA) or overall productivity. Although all of the questions in the data collection instrument were used in collecting data on AT, BI, and BA, only those that satisfied the following criteria were used for further analysis: reliability coefficients (Cronbach α) of at least 0.70, factor loadings of at least 0.50, extracted variances of at least 0.50, and communalities of at least 0.50 (Hair *et al.* 1998, pp. 111-118, 612). Table 3 summarizes the factor analysis results.

TABLE 3
FACTOR LOADINGS, COMPOSITE SCALE RELIABILITY, AND AVERAGE VARIANCE EXTRACTED FOR RESEARCH ATTITUDE, INTENTION, AND PRODUCTIVITY

Constructs and Items	Factor Loadings	Composite Scale Reliability	Average Variance Extracted
Attitude (AT)		**.913**	**.801**
AT1	.907		
AT2	.914		
AT4	.828		
AT5	.926		
Behavioral Intention (BI)		**.887**	**.773**
BI1	.970		
BI2	.953		
BI3	.741		
BI4	.832		
Research Productivity (BH)		**.841**	**.730**
FRP	.902		
PRP	.900		
COP	.843		
SRP	.767		
Overall		**.889**	**.765**

The overall variance explained by the produced factors was 0.765 ($\alpha = 0.889$). AT comprised four of the five original items (Appendix B), which explained 0.801 of the variance ($\alpha = 0.913$). BI comprised the four original items (Appendix B), which explained 0.773 of the variance ($\alpha = 0.887$). BA comprised the four research indicators, which explained 0.730 of the variance ($\alpha = 0.841$).

To answer the first research question on the faculty's research attitudes (AT), intentions (BI), and behaviors (BA), the t-test procedure was applied. It tests the significance of the distance (difference)

between the average score of AT, BI, and BA and the midpoint of the adapted measuring scales (Table (4)). Based on the means and the associated P-values, the faculty hold favorable attitudes (AT) toward doing research (mean = 4.31, P = .000) and have strong intentions (BI) to do research in the future (mean = 4.22, P = 0.000). However, their actual productivity in the last three years (BA) is low (mean = 1.13, P = 0.000).

TABLE 4
DESCRIPTIVE STATISTICS FOR RESEARCH ATTITUDES, INTENTIONS, AND PRODUCTIVITY

	N	Min	Max	Mean	Std. Dev	P-Value	Level of Agreement/ (based on the mean)
AT	24	1.72	5.00	4.3119	.80936	0.000*	Favorable
BI	24	1.21	5.00	4.2187	1.03126	0.000*	High
BA	23	.00	3.22	1.1259	.79742	0.000*	Low

* Significant at ∞ = .05

The Influence of the Individual Characteristics

To answer the second questions on the influence of the individual characteristics (gender, age, marital status, tenure, academic rank, experience at HE, time spent on research, and time spent on teaching) on AT, BI, and BA, the Mann Whitney U test, a non-parametric test, was applied. The main reason for using the non-parametric test is the small sample size (< 30). To apply that test, a number of the individual characteristics were recoded to identify two subgroups in each characteristic. Age was recoded to identify two groups: a younger group (<= 40 years old) and an older group (> 40 years old). Experience at HE was recoded to identify two groups: a less experienced group (<= 10 year) and a more experienced group (> 10 years). Rank was recoded to identify two subgroups: a junior group (i.e., assistant professors) and a senior group (associate and full professors). The time spent on research and the time spent on teaching were also recoded to identify two subgroups in each: below average (<= the mean) and above average (> the mean).

Table (5) summarizes the results of testing the effect of the individual characteristics on AT, BI, and BA. The table also reports the means and standard deviations for each subgroup within each characteristic as well as the significance level (P-value) for the influence on each of the three research-related variables. Among the individual characteristics, only age, marital status, time spent on research, and time spent on teaching had influence on one or more of the research-related variables. Age influenced BI (P = .051) and BA (P = .024). Marital status influenced BA (P = .027). Time spent on research influenced BI (P = .022) and BA (P = .0001), and time spent on teaching influenced BA (P = .011). These results are next discussed.

TABLE 5
THE INFLUENCE OF INDIVIDUAL CHARACTERISTICS ON RESEARCH ATTITUDE, INTENTION, AND PRODUCTIVITY

Individual Characteristics	N	AT		BI		BA	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Gender	Male (N=11)	4.13	1.03	4.18	1.12	1.26	.866
	Female (N=10)	4.37	.561	4.12	1.03	.963	.788
P-Values		.766		.890		.359	
Age	<= 40 (N=8)	4.63	.438	4.76	.452	1.52	.521
	> 40 (N=14)	4.05	.931	3.91	1.18	.929	.885
P-values		.091		.051		.024	
Marital Status	Single (N=3)	4.41	.376	3.45	1.28	.315	.368
	Married (N=19)	4.26	.885	4.29	.991	1.27	.789
P-Values		.747		.287		.027	
Academic Rank	Junior (N=11)	4.55	.428	4.58	.605	1.36	.698
	Senior (N=7)	3.89	1.24	4.14	1.40	1.25	.962
P-Values		.433		.606		.496	
Tenure	Tenured (N = 5)	4.45	.796	4.75	.554	1.51	1.04
	Non-Tenured (N = 14)	4.48	.506	4.139	1.16	1.14	.770
P-Values		.595		.272		.610	
Experience at HE	<= 10 years (N=12)	4.48	.565	4.29	1.02	1.27	.684
	>10 years (N=11)	4.14	.982	4.15	1.08	.973	.914
P-Values		.396		.666		.295	
Time Spent on Research	<Mean (N=14)	4.12	.965	3.84	1.14	.634	.384
	>= Mean (N=9)	4.58	.439	4.76	.534	1.89	.654
P-Values		.286		.022		.000	
Time Spent on Teaching	< Mean (N=11)	4.50	.439	4.57	.651	1.61	.860
	>= Mean (N=12)	4.12	1.05	3.87	1.24	.684	.392
P-Values		.619		.165		.011	

DISCUSSION

The purpose of this study is to answer two main questions regarding the extent of faculty's research attitudes (AT), intentions (BI), and behaviors (BA) in the investigation institution as well as the influence of a number of individual characteristics on these research-related variables. As to the first question, the research productivity (BA) of the faculty, measured by the number of funded research projects, peer-reviewed publications, and conference presentations in the last three years, was low and varied from one faculty member to another. This result supports the notion that research productivity is generally low among HE institutions (e.g., Khalil, 2018, Fox 1983; Allison 1980). The absence of clearly stated research norms for each academic field, unknown research expectations in diverse HE institutions, and the absence of an agreed-upon method for measuring research productivity led to difficulties characterizing and comparing research productivity across research fields and between HE institutions (Khalil, 2018).

Nevertheless, the faculty held positive (favorable) attitudes (AT) toward research. They believe that doing research is pleasant, satisfactory, useful, and interesting. That positive attitude appears to underline their strong intentions (BI) to engage in future research. However, the reported relatively low research productivity did not corroborate the faculty's favorable research attitudes and strong intentions to do research. Undoubtedly, a faculty member requires more than favorable beliefs (AT) and strong motivation (BI)) to be scholarly productive. The lack of requisite research resources (e.g., time, domain knowledge, research skills) and rewards appeared to turn research into a difficult task (Khalil, 2018).

As to the second question (the influence of the individual characteristics), gender, tenure, academic rank, and experience at HE did not influence the faculty's AT, BI, and BH. Male and female faculty members appeared to hold similar research AT and BI and produced similar research (BH). Female faculty members, although overstretched, appeared to manage and balance the demands of home, children, and a productive academic career (Sax et al., 2002). This finding was inconsistent with the reported findings of superior productivity (BH) of the male faculty in academia (e.g., Callaghan, 2017; Albert et al., 2016; Creswell, 1985, p. 33). In addition, the faculty tended to exhibit comparable research AT, BA, and BH in spite of their tenure status, academic rank, and experience at HE. One plausible reason for the insignificant influence of these characteristics is the small sample size. These findings did not confirm the results of a number of earlier studies t(e.g., Hu and Gill, 2000; Chen et al., 2010; Hardré et al., 2011; White et al., 2012; Hedjazi and Behravan, 2011; Brocato and Mavis, 2005; Bland et al., 200; Angaiz, 2015; Jung, 2012), which found that tenure, academic rank, and experience at HE influence research productivity.

However, age, marital status, time spent on research, and time spent on teaching variably influenced research BI and BH. Age influenced the faculty's intentions (BI) to do research in the future as well as their research productivity (BH) in the last three years. Younger faculty produced more research in the last three years and had stronger intentions to engage in future research than did their older counterparts. Younger faculty, who are likely junior and non-tenured faculty, may aspire to get promoted and tenured. Therefore, younger faculty were more motivated to be scholarly productive than were their senior and tenured colleagues. This finding is consistent with the findings of earlier studies (e.g., Khalil, 2018; Marini, 2017; Albert et al., 2016: North et al., 2011)

Marital status also influenced research productivity (BH). Married faculty members were more productive in the last three years than were their unmarried counterparts. Single faculty members were expected to have fewer family responsibilities (household/childcare duties) and therefore have more time to do research than do their married colleagues. However, this finding suggested that married faculty are more productive because they attempt to do more with their limited time, and they take time out of other activities (e.g., leisure) to do research (Sax et al., 2002). This finding provided no information on whether the relatively high productivity of married faculty is consistent across male and female faculty members. This finding should also be carefully interpreted because of the relatively small representation of the unmarried faculty members in the sample.

Lastly, the time spent on research influenced research intention (BI) and behavior productivity (BH), while the time spent on teaching influenced only BH. The faculty who spend time on research greater than the reported average research time (12%) had stronger intentions to do research in the future and produced more research in the last three years than did their colleagues who spent less time on research. In addition, the faculty who spend time on teaching less than the reported average teaching time (68%) produced more research in the last three years than did their counterparts who spent more time on teaching. These findings confirm that performing research is laborious and entails a continuous commitment of significant time (e.g., Khalil, 2018; White et al. 2012; Stafford 2011; Bland et al. 2002; Brocato 2001). Teaching and research activities compete for time, and spending much time on teaching and little time on research is therefore counterproductive.

Implications

The findings of this study have theoretical and practical implications. Theoretically, the findings provide empirical evidence on research attitude, intention, and behavior (productivity) as well as the influence of a number of individual characteristics on these research-related variables at a liberal arts college. They should contribute to the growing empirically-based body of knowledge on not only research behavior but also on research beliefs (AT) and motivations (BI) in HE. Investigating research attitude, intention, and behavior in diverse contexts and across different cultures is crucial to identifying principles that could be universally applied to research performance enhancement efforts in academia.

Practically, the findings of this study may serve as a foundation for adapting policies designed to enhance research productivity of the faculty at the college and other similar colleges. While the faculty hold favorable research attitudes and have strong intention to do future research, their research productivity is low. The faculty seemingly find it difficult to translate their positive attitudes and strong intentions into research performance (behaviors). Individuals act on their beliefs about what they can do and on their beliefs about the likely outcomes of performance (Bandura, 1994). As such, faculty with high assurance in their capabilities can approach the perceived demanding research activities as challenges to be learned rather than as threats to be avoided. Actions aimed at strengthening the faculty's sense of research efficacy should therefore enhance their research performance (Gutman 2000; Khalil, 2018).

In a recent investigation of research barriers at the college, Barnes and Khalil (2018) conclude that the College's faculty believe that the excessive time spent on teaching and serving on committees, the lack of professional and skills development opportunities, and the non-existence of a research supporting culture and resources impede their research productivity. In addition, the perceptions of these barriers are very much universal across the faculty members in spite of their individual differences. Efforts should be therefore made to eliminate these barriers and enable the faculty to turn their favorable research beliefs (attitude) and strong research motivation (intention) into higher research performance (behavior).

The College administrators are recommended to utilize the finding of this research to develop policies aimed at providing the faculty with the needed research resources and incentives (especially for older faculty members), support the development of the faculty's research skills, decrease their teaching loads, and strengthen their research efficacy. They should plan and execute workshops to enhance the faculty's time management skills and enable them to properly allocate time across the many competing activities and responsibilities. Above all, the College needs to establish and nurture a research supporting culture where research is valued and scholarly productive faculty are rewarded. Furthermore, the effectiveness of any newly adapted research productivity enhancement policies must be continuously assessed and amended in order to ensure their usefulness.

CONCLUSIONS AND LIMITATIONS

Knowing what factors impact faculty scholarly productivity in a particular HE institution is essential to scholarly productivity improvement efforts. This study adopted and answered two questions to explore the faculty's research attitudes, intentions, and behaviors as well as to analyze the influence of gender, age, marital status, academic rank, experience, academic field, time spent on research, and time spent on

teaching. Although the faculty hold favorable attitudes toward research and have the intentions to engage in future research, their research productivity (behavior) in the last three years is largely low. In addition, the individual characteristics of age, marital status, time spent on research, and time spent on teaching seemingly influence research intentions, and behaviors. Yet, favorable research attitudes and strong intentions are not always translated into high research productivity. Policies and strategies aimed at improving research productivity at the investigated college should eliminate important research barriers and enhance the faculty's research efficacy.

The results of this study, however, should be cautiously interpreted in light of its limitations. Firstly, the research behavior (productivity) results were produced from four self-reported surrogate measures. Surrogate measures are less reliable and valid than direct, objective ones Also, the accuracy of the research productivity data depends on the extent to which the faculty members could recall productivity information to respond to each of the four related questions. In addition, the measures used in this study emphasize the quantity of publications regardless of their quality. Future studies should attempt to adapt objective research productivity measures that provide information on both research quantity and quality.

Secondly, while the results provide evidence on the influence of each of the individual characteristics on the research related variables of attitude, intention, and behavior, they provide no evidence on the importance of each of the individual characteristics in explaining and/or predicting each of these research variables. In addition, due to the small sample size, only the mean effects of the individual characteristics were analyzed. As such, information on the possible interaction effects of the individual characteristics (e.g., the effect of married male vs. married female) on the research variables is lacking. Future research should utilize larger samples in order to investigate the relative importance of the individual characteristics as well as their interaction effects on the three research-related variables.

Thirdly, the results are drawn from a single HE institution, and therefore they are specific to that institution. Caution is required when using these findings to interpret similar phenomena beyond the underlying institution (Khalil and Khalil, 2018). Future replications should be undertaken in other HE institutions so that the results can be compared, verified, and possibly generalized.

Lastly, the results were reached based on a cross-sectional, one-time data set. These results therefore may have place and time-specific components that could vary across institutions and over time (Khalil and Khalil, 2018). Future research designs should collect longitudinal data sets that can be used to diagnose and track the faculty's research attitudes, intensions, and behaviors at different times as work environments tend to change over time.

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SURVEY AND DATA

	Frequency	%	Cumulative %
Gender			
Male	11	50.0	50.0
Female	11	50.0	100.0
Missing	2		
Age			
30 years or less	0	0.00	0.00
31-40 years	8	36.4	36.4
41-50 years	7	31.8	68.2
51-60 years	5	22.7	90.9
Above 60 years	2	9.1	100.0
Missing	2		
Marital Status			
Single	3	13.0	13.0
Married	20	87.0	100.0
Missing	1		
Tenure			
Tenured	5	25.0	25.0
Non-Tenured	15	75.0	100.0
Missing	4		
Experience at Higher Education			
Less than 1 year	0	0.0	0.0
1-5 years	7	29.2	29.2
6-10 years	5	20.8	50.0
11-15 years	6	25.0	75.0
16-20 years	3	12.5	87.5
More than 20 years	3	12.5	100.0
Missing	0		

Academic Rank			
Assistant Professor	11	45.8	45.8
Associate professor	4	16.7	62.5
Full Professor	3	12.5	75.0
Visiting professor	3	12.5	87.5
Others	3	12.5	100.0
Missing	0		
Courses Taught			
< 3 courses	0	0.00	0.00
3 courses	3	12.5	12.5
4 courses	12	50.0	62.5
> 4 courses	9	37.5	100.0
Time Spent on Activities	**Min (%)**	**Max (%)**	**Mean (%)**	**St. Dev (%)**
---	---	---	---	---
Researching	0	25	11.75	8.70
Teaching	35	100	68.13	15.66
Serving on Committees	0	40	15.42	10.52
Training & Consulting	0	25	4.29	6.14

APPENDIX B

RESEARCH ATTITUDE (AT) AND BEHAVIORAL INTENTION (BI) MEASURING ITEMS

Attitude	
AT1	To me, doing research is pleasant
AT2	To me, doing research is disappointing
AT3	To me, doing research is the right thing
AT4	To me, doing research is useful
AT5	To me, doing research is boring

Behavioral Intention	
BI1	I plan to do research in the next 6 months
BI2	I intend to continue to do research in the next 6 months
BI3	I will make an effort to do research in the next 6 months
BI4	I do not want to do research in the next 6 months