American Journal of Science Education Research

What Drives Business Research Intentions: A Perspective from Egyptian Higher Education

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Abstract

Understanding what affects academics' research intentions and behaviors would guide strategies and policies to advance research productivity. This study examined the effect of a few personal and contextual factors on business academics' research intentions at Alexandria University (AU), Egypt. It adapts a Theory of Reasoned Action (TRA) extended model to examine the effect of research barriers (RB), habit (HT), social norms (SN), and attitude (ATT) on research intentions (INT). The structural equation modeling analysis results imply that SN is the strongest determinant of research ATT and INT. RB (inadequate professional and research skills and computing resources) negatively affects ATT. However, the effects of ATT and HT on INT are insignificant. These results contribute to the emerging research on academic research as a social behavior in international higher education.

Keywords: Theory of reasoned action, research intention, attitude, habit, social norms, research barriers.

Introduction

Teaching, research, and service are essential academic tasks in higher education (HE) institutions [1,2]. However, a more prominent emphasis has recently been placed on scholarly productivity [3,4,5]. Research productivity has become essential for staffing, tenure, and promotion decisions [6]. Also, the importance and amount of academic research are key factors in the ranking of HE institutions and access to fiscal and academic assets [7]; [8]; [4]; [9]; [6]; [10]; [11]; [12]. Yet, academic productivity in research is generally low across the globe [13]; [14]; [4]; [15]; [16]; [17]; [18]; [19]; [20] and differs from one field to another, from one academician to another in the same field, and from one institution to another [7]; [4]; [2]; [21].

Developing effective strategies and policies for boosting research productivity requires a knowledge of the reasons behind the scholarly productivity of certain academics as well as the facets that affect the objectives and behaviors in their field of research. Various demographic, personal, contextual, and leadership factors have been at the center of numerous investigations that have sought to clarify the research performance of academics [22]; [23]; [24]; [25]; [26]; [21].

However, many of the earlier studies independently examined factors that researchers believed to affect research performance [25]; [27], and only a few researchers have adapted and tested broad and theoretically driven causal research models to explain the variance in academics' research intentions and behaviors across different institutional and cultural settings. Research on academic productivity in diverse policy and cultural contexts is needed to explore factors influencing the productivity and strengthen the generalizability of findings beyond national boundaries [25].

Compared to the rest of the globe, the Arab world has a relatively lower level of academic research productivity [28]; and only a few studies investigated factors influencing research productivity in specific Arab HE institutions [7]; [29]; [30]; [15]; [3]; [31]; [32]; [33]. Case in point: Alexandria University (AU), located in Egypt, ranked fourth among the top universities in Egypt, 15th among the best in Africa, and 611th among the best in the world in 2022–2023. Nevertheless, the AU's business program failed to rank up, according to the Global University Subject Rankings, based on performance across several excellence measures, including research performance (https://www.usnews.com/education/best-global-universities/alexandria-university). It is therefore essential to identify the sources of the business academics' poor research productivity at AU and the factors that steer their intentions to do research.

The current study analyzes the potential effect of some believable factors on the research intention of business academics in AU. It therefore applies a research model based on the Theory of Reasoned Action (TRA), which is a helpful theory for understanding behavior that is under control [34]; [35,36]. The research model proposes that attitude (ATT), social norms (SN), research habits (HT), and research barriers (RB) affect academics' research INT. INT is the outcome construct in the model since it is the most critical determinant (antecedent) of behavior [37]; [36]. In addition, focusing on INT in this study minimizes the respondents' reluctance to accurately postulate their future research behaviors [38].

The empirical-based findings of this study offer much-needed nuance to the continuing discourse about scholarly productivity in HE. Its conclusions deepen our understanding of research as a social behavior and guide the development of initiatives and

strategies meant to boost academic research productivity. Furthermore, this study provides genuine information on Arab milieu academic research drivers, which strengthens the validity and interpretability of research productivity motivation in HE institutions.

Background

Several factors could impact the research efficacy of academics in higher education [8]; [22]; [23]. For a while, researchers have been trying to understand why academics perform well in research by looking at complicated factors or influences [5]. These factors, whether separate or combined, can either aid or hinder research outcomes. [6]; [27]; [21]. However, these factors were investigated individually or through simple, theoretically speculative models [15]. Furthermore, only limited research [3,4]; [39]; [40]; [41] has focused on determinants of academics' research ATT and INT.

Research productivity is a challenging and obscure problem in the sociology of science [42]. Research models created to examine research behavior could be sufficiently based in behavioral theories from social psychology. As a broad theory of social behavior, the TRA is widely accepted [34]; [35]. Under the TRA, ATT and SN drive INT, which in turn affects behavior. Therefore, the TRA offers a valuable conceptual framework for examining the intricacies of research behavior. To further explain complicated social phenomena like research behavior, a researcher might expand a TRA-based model by adding new factors [36]. Hence, this investigation adopts an extended TRA research model to investigate factors influencing academics' INT to do research. Our extended TRA-based model includes, along with the original TRA's ATT and SN constructs, research habits (HT) and research barriers (RB) as two plausible determinants of research INT.

As a motivational construct, INT indicates the readiness to perform a given behavior, such as performing research [35]. It precedes behavior directly [35]. ATT is a mental disposition manifested through forming a preference, to varied degrees, for a particular matter [43]. ATT is also defined as the inclination to develop a judgmental reaction toward a behavior, like conducting research [44]. It therefore involves evaluating the behavior positively or negatively, as well as considering the outcomes of such actions [35]; [34]. The TRA connects ATT and behavior by impacting INT.

Moreover, SN depends on perceptions of the importance of relevant individuals (or group members) and the desire to behave according to those individuals. One's beliefs about the expectations of society regarding whether to engage in a particular behavior, like conducting research, are known as social pressure [35]. Following SN is driven by the higher value placed on group objectives and the desire to avoid standing out [45]. Collectivists may prefer conducting research to foster harmonious relationships within their groups, whereas individualists typically conduct research for individual validation.

Because it is appropriate to enhance the TRA model by adding factors that could provide a more comprehensive explanation of research behavior, our research model (Figure 1) integrates HT and RB as two potential effects on research INT, alongside the TRA's original constructs. HT refers to the frequency of past behavior [44]; [46]; [47]; [48]. When there is an adequate supporting context, HT suggests a propensity to repeat responses [49]; [50]; [51]. Eagly and Chaiken (1993) [43] recommend integrating HT into the ATT models because HT is important in modulating the attitude-behavior relationship [44]. ATT may initiate HT formation. When an individual effectively does something new, he/she tends to repeat the same behavior, which over time becomes habitual [44]; [52]. The frequency of past behavior (i.e., HT) [37] can affect future behavior (i.e., research) directly through automatic repetition of previously established routines or indirectly through conscious INT to behave [46]; [47]; [53]; [51]. Since HT has a possible temporal effect on research productivity [27]; [54], it could also have a possible effect on research INT.

There are several causes (or barriers) why an academician does not engage in research [22]. Over forty years ago, Fox (1983) [21] grouped factors that could impact academics' research productivity (i.e., RB) into four categories: personal traits (like natural scientific talent, inner drive, and personality), accumulated benefits (such as skills and resources, access to research materials), feedback mechanisms (such as early publication in respected journals, citations, peer evaluation), and field standards (like preferred publication venues, specific research practices, and stage of theoretical framework). These factors, whether alone or together, can either boost or hinder academics' research outcomes.

This study focuses on several contextual RB because their effect on research behavior is greater than the personal factors' impact, and they can be manipulated through institutional policies and actions aimed at augmenting academics' research productivity [6]. The contextual RB include, among others, substantial engagement in community and university service, inadequate research skills development opportunities, lack of a research-supporting culture, lack of research grants or funds, lack of sufficient funding for attending conferences, excessive research requirements for promotion, lack of networking opportunities, inadequate computing resources, inadequate opportunities for professional development, lack of after promotion motives, heavy teaching, and advising load, and disinterest in joint research [7]; [22]; [17]; [4]; [3]; [55]; [56]; [57]; [30]; [58]; [59]; [60]; [5]; [23]; [61]; [25,6]; [62]; [63]; [26]. This study investigates ten contextual factors that are believed to affect academics' research performance in the investigated HE institution.

Research Model and Hypotheses
Research model:
Figure (1) shows the suggested research model. The model suggests that RB affects ATT, which then affects HT and INT, while SN affects ATT and INT.
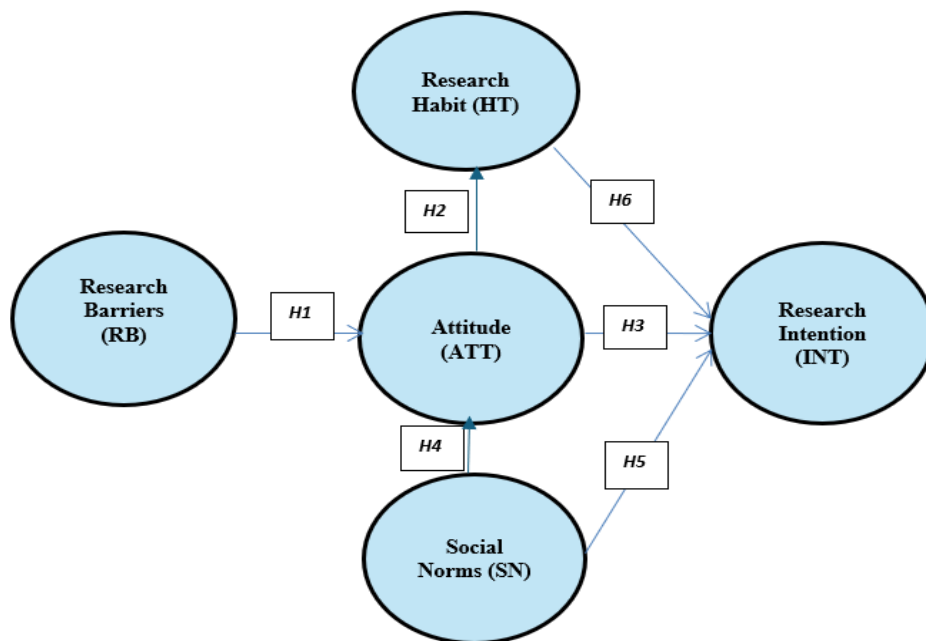
Figure 1: The Research Model.

Research hypotheses:

The effect of research barriers (PB). Barnes et al. (2020) [17] report that lack of supporting culture and resources impede business academics' research productivity at a Northeastern college, United States. Khalil (2019) [4] finds that engaging in research-impeding activities, a lack of extrinsic motivators, and insufficient research resources affect academics' ATT to do research at a Middle Eastern university. In a similar manner, Khalil & Khalil (2019) [15] find that impediments such as research efficacy, availability of physical and information resources, financial resources, incentives, and cultural factors hinder business academics' research productivity at Kuwait University. We, therefore, predict that academics who encounter difficulties performing research tend to develop unfavorable ATT toward research.

H1: Research barriers (RB) negatively affect attitudes (ATT) toward doing research.

The effect of attitude (ATT). Favorable ATT may initiate and shape HT '[44]; [52]. When an academician successfully performs research, he/she tends to repeat the same behavior, and performing research becomes habitual. As to previous relevant research, Khalil (2019) [4] proposed and verified that research HT affects academics' ATT toward performing research, which suggests that HT could be used to infer a favorable ATT toward research. However, prior empirical studies on the possible effect of ATT on HT in the academic research setting is lacking. We argue that favorable ATT toward research could initiate and develop academics' research HT.

H2: Attitudes (ATT) toward doing research positively affect research habits (HT).

Furthermore, the more favorable the ATT of an academician toward research, the stronger his/her INT to do research [4]. Likewise, [64] argue that ATT should affect the INT to conduct team research. Stanton et al. (2009) [39] report that ATT toward the usefulness of research is positively related to research effort and productivity. In addition [65] find that ATT toward research directly affects research productivity. However, Milburn (1999) [41] notes an apparent contrast between positive research ATT

among academics and their negative research behaviors. In addition, and according to Clarke (2010) [66], there is no relation between academics' ATT toward conducting research and their actual participation in it. Also, Cheewaratchanon & Potipiroon (2024) [67] report insignificant ATT's effect on research productivity. On balance and based on the TRA postulations, we predict that ATT will affect the INT to do research.

H3: Attitude (ATT) toward research positively affects the intention (INT) to do research.

The effect of subjective norms (SN). The impact of a normative belief depends on one's willingness to adhere to a specific point of reference [35]; [53]. While the TRA does not suggest any connection between ATT and SN, past research suggests potential crossover effects between the two [68]; [69]; [70]. Social influence processes, as outlined by Fulk (1993) [71], could result in SN impacting ATT, with individuals incorporating the views of important individuals into their beliefs and subsequent actions. Hence, the level of social pressure (SN) placed on a researcher by people such as colleagues, administrators, friends, and family members impacts their perceived research value and effectiveness. We anticipate that a scholar will form and maintain a positive ATT towards conducting research to remain consistent with their peers.

H4: Social norms (SN) positively affect attitudes (ATT) toward doing research.

The TRA theory suggests that social networks play a role in determining INT. The academician's motivation to conduct research is affected by how important individuals to him or her view the display of that behavior. Milburn (1999) [41] suggests that the lack of positive SN and ATT for research behavior could be a primary deterrent to positive research behavior. In addition, Standish-Kuon (2000) [40] denotes that SN affects the INT to commercialize research outcomes. Wei et al. (2015) [64] observe that SN affects the INT to conduct team research. Khalil et al. (2021) [68] inform that SN affects academics' INT to share knowledge, which is essential for performing research. However, Clarke (2010) [66] finds no relationship between SN

regarding research engagement and actual research behavior. On balance, and based on the TRA propositions, we predict that the social research environment (SN) will affect academics' research INT.

H5: Social norms (SN) positively affect the intention (INT) to do research.

The effect of research habit (HT). Verplanken & Orbell (2022) [44] assert that ATT-based strategies are useless for altering behavior if they can't make transient behaviors become routines. Past research experience (HT) could have a temporal effect on research productivity [27]; [54]. Hence, INT could correlate with HT [72]. A person who has regularly engaged in a behavior (like research) in the past is likely to develop a positive INT about the behavior [51]. Therefore, HT might combine with other variables (e.g., ATT and SN) in a model to predict INT [36]. Khalil (2019) [4] finds HT to significantly affect academics' INT to do research. In addition, a few earlier studies [24]; [27]; [54] report that academics who established research habits in the past are productive researchers. Therefore, we predict that HT will affect the INT to do research.

H6: Research habits (HT) positively affect the intention (INT) to do research.
Methodology

This study employs a survey method involving only one organization. This approach permits a more profound comprehension of the problem being studied. The research setting is the Faculty of Business (FoB) at AU, Egypt, and the full-time academics in the FoC are the informants. AU includes twenty-three faculties and 6181 academics (https://www.alexu.edu.eg/index.php/en/statistics-data). The FoB encompasses five academic departments: accounting; business administration; math, statistics, and insurance; public finance; and computer and information systems. Equipped with 147 full-time academics, FoC offers multiple undergraduate, master's, and PhD programs.

Measurement:

This study employs measures developed and verified in prior relevant studies. However, the adapted items have been slightly revised to fit this study context. INT, an academician's readiness to perform research, was measured using four items commonly adopted to assess INT in previous research [73]. ATT was measured using five affective and instrumental items [73]. SN, the degree to which a person believes that significant others in

their lives support their research practice, was measured using four items [35]. HT, the frequency of past behavior [46]; [47]; [48], is measured as the extent of research occurrences in the last five years by using four performance indicators: the quantity of sponsored studies, peer-reviewed publications, conference presentations, and self-assessed productivity in relation to peers within the field. Lastly, RB was measured using ten items, adopted from Khalil's (2018) [3] twenty-item research barriers instrument. These items have been chosen primarily for their relevancy to the study's setting. A 5-point Likert scale, where 1 implies "strongly disagree" and 5 implies "strongly agree," is used to rate the measuring items for INT, ATT, SN, and RB.

Sampling and data collection:

The needed research data was collected using a structured questionnaire, which includes two parts: one for collecting demographic information, and the other for gathering the informants' views on the research variables. All the full-time faculty members received copies of the data collection instrument after receiving a single phone call or WhatsApp message, followed by a few phone calls after distribution to encourage their participation. We assured them their identities would be protected and that participation was optional. The data collection phase lasted six weeks, and we received seventy complete responses, a response rate of approximately 48%.

Sample profile:

The Accounting Department has the most respondents (27%), and most of the participants are male (63%). Moreover, 83% of the participants are older than 40, 86% are married, 66% have more than 20 years of experience in higher education, and 51% are assistant professors. Furthermore, 27% of the respondents teach four or more courses per term (semester).

Table (1) depicts the time the respondents spend carrying out their teaching, research, and community service (service on committees and participation in training and consulting). Notably, the respondents spend approximately half of their time on teaching, and only 24% is spent on research. In addition, Table (2) presents the research productivity in the last five years as reported by the respondents. Over the last five years, an academician has, on average, one funded research project (FRP), 2.6 peer-reviewed publications (PRP), and two conference papers (COP), and rates himself/herself as an average researcher compared to the best researcher in the field.

Table 1: Time Committed to Academic Responsibilities.

	Min. (%)	Max. (%)	Mean (%)	Std. Dev (%)
Researching	5	50	24.42	12.113
Teaching	10	85	49.28	16.276
Committees Services	0	60	15.70	14.043
Training & Consulting	0	40	7.03	9.088

Table 2: Research Productivity in the Last Five Years.

	Min. (%)	Max. (%)	Mean (%)	Std. Dev (%)
Financed Research Projects (FRP)	0	4	1.25	.799
Peer Reviewed Publications (PRP)	0	5	2.62	1.139
Conference Papers (COP)	0	5	1.96	.882
Self-Rated Productivity (SRP)	0	5	2.97	1.057

Analysis and Results

We first applied confirmatory factor analysis (CFA) to perform a preliminary evaluation of the measurement model and confirm the constructs' reliability and convergent validity [74]. Table (3) outlines the generated measurement model. Items that do not meet the loading factor criteria (≥ 0.60; [75] are eliminated from the measurement model ≥ 0.60; [75]. While Cronbach's alpha (α) is used to measure reliability, factor loadings and average variance extracted (AVE) are used to estimate convergent validity.

The factors (constructs) exhibit an AVE of 0.795 collectively, along with a reliability coefficient (α) of 0.745. INT consists of three of the original four items, with an AVE of 0.927 and an α value of 0.960. ATT consists of three of the original five items, with an AVE of 0.642 and an α value of 0.714. SN consists of three of the initial five items, with an AVE of 0.649 and an α value of 0.714. HT includes three out of the initial four items, with an AVE of 0.682 and an α value of 0.765). In addition, the analysis identified two factors (groups) of barriers to research, which include six out of the total ten barriers: RB_1 (AVE = 0.707 and α = 0.787) and RB_2 (AVE = 0.743 and α = 0.821). Following these results, each factor in the model exhibits convergent validity (AVE ≥ 0.50 and factor loadings ≥ 0.60) and satisfactory reliability ($\alpha \geq 0.70$) [76].

Table 3: The results of the confirmatory factor analysis.

Factors	Factor loading	Reliability coefficient (α)	Average Variance Extracted (AVE)
Intention (INT)		**0.960**	**.927**
INT1: I plan to do research in the next 6 months	.917		
INT2: I intend to continue to do research in the next 6 months	.943		
INT3: I will make an effort to do research in the next 6 months	.910		
Attitude (ATT)		**0.716**	**0.642**
AT1: Doing research is pleasant	.823		
AT3: Doing research is the right thing	.670		
AT5: Doing research is boring	.764		
Social Norms (SN)		**0.714**	**0.649**
SN1: Important people in my life expect that I will do research.	.623		
SN2: My colleagues think that I should do research	.763		
SN5: People who I respect want me to conduct research.	.827		
Habit (HT)		**0.765**	**0.682**
PPR12: Number of peer-reviewed publications in the last five years	.785		
PCO13: Number of conference presentations in the last five years	.807		
CMR14: Research productivity, compared to your colleagues, in the last five years	.785		
Lack of Research Conducive Culture (RB_1)		**0.787**	**0.707**
RB2: Lack of a research-supporting culture	.663		
RB3: Difficulty of attaining research grants or funds	.877		
RB4: Lack of sufficient funding for attending conferences	.851		
Inadequate Skills Development and Computing Resources (RB_2)		**0.821**	**0.743**
RB6: Inadequate opportunities for developing and enhancing research Skills	.692		
RB8: Inadequate computing resources (hardware, software, and databases)	.872		
RB9: Inadequate opportunities for professional development	.848		
Overall		**0.745**	**0.795**

Table (4) shows statistical information about the variables being studied. According to the averages and the corresponding p-values, the participants in the study show strong positive ATT towards participating in research (Mean = 4.490, p < .001), experience strong societal pressure to do research from influential individuals. (Mean = 4.172, p < .001), and have a determined INT to continue with research in the future (Mean = 4.304, p < .001). Nevertheless, they indicate a low research habit (HT) over the past five years (Means = 2.494, P < .001), a consensus on the absence of a suitable research culture (RB_1) as a hindrance to research (Mean = 3.926, P < .001), yet express a neutral stance on the insufficiency of professional skills and computing resources (RB_2) as a barrier to research (Mean = 3.011, P < .938).

Table 4: Descriptive statistics.

Variables	Min	Max	Mean	Std. Dev	t-Value	p-Value*
INT	1.00	5.00	4.3037	.95146	19.324	<.001
ATT	3.29	5.00	4.4899	.44851	26.782	<.001
SN	2.64	5.00	4.1719	.61565	15.346	<.001
HT	1.00	5.00	2.4944	.84363	5.014	<.001
RB_1	1.26	5.00	3.9260	.94168	7.743	<.001
RB_2	1.00	5.00	3.0107	1.07172	.079	.938
*A significance threshold of p ≤.05. applies to the difference from 3 (the scale's midpoint).						

Next, we verified the measurement model using the partial least squares structural equation modeling (PLS-SEM) method, assess model fit, and test the research hypotheses. For both exploratory and confirmatory investigations, PLS-SEM is a useful technique, especially when working with small sample sizes [77]. Consequently, we applied the bootstrapping technique with 5,000 subsamples [78] and the SmartPLS 3.0 software [79] to evaluate the measurement and structural models.

The evaluation of the measurement model

Figure 2 depicts the final consequential model. The evaluation of the measurement model confirms the reliability and validity of the constructs. We evaluated reliability by examining the indicator loadings shown in the final model. Except for AT3 (.669), SN5 (.692), RB3 (.673), and RB8 (.630), all loadings exceed the suggested threshold ≥ 0.708 [80]. With Cronbach's α serving as the least internal reliability level and composite reliability serving as the maximum, we assessed the internal consistency of the measurement model.
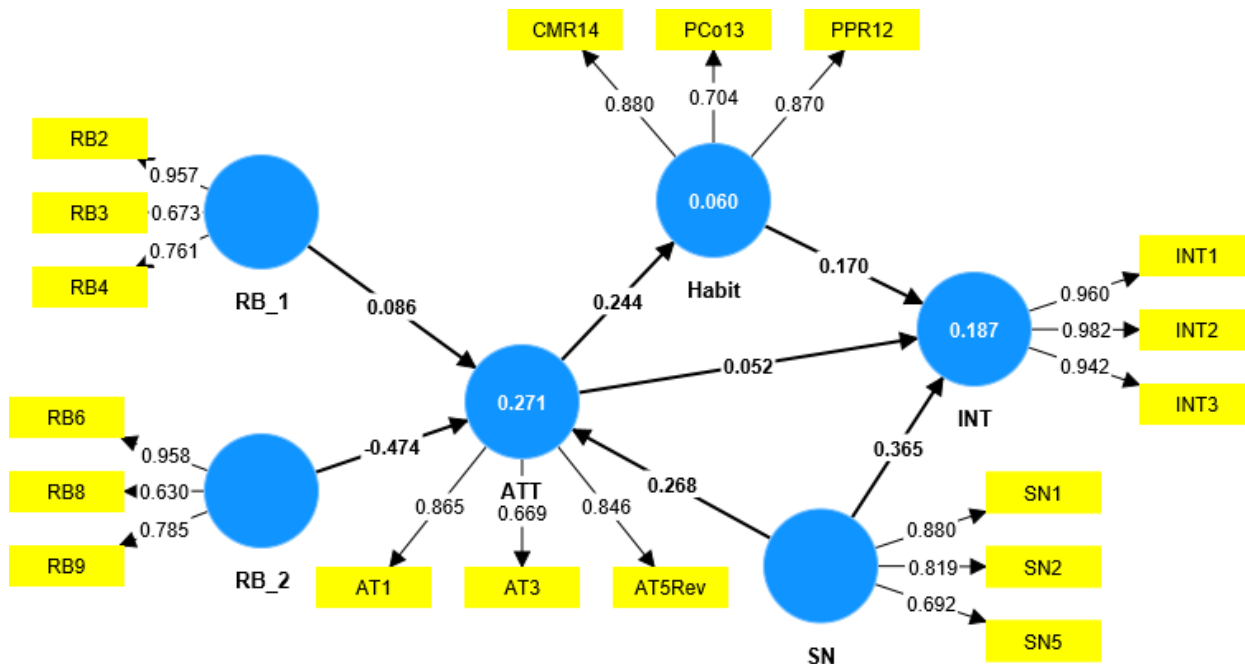

Figure 2. The consequential model.

All α values in Table (5), except for INT, are within the suggested range of 0.70–0.95 [80]. The Cronbach's α value for INT (0.959) is above the norm, suggesting there may be redundancy in the measuring indicators. Nevertheless, the results indicate that every factor account for more than 50% of the variability in the measurement, leading to satisfactory item consistency [77].

Table 5: Construct Reliability and Validity.

Variables	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
INT	0.959	0.973	0.924
ATT	0.718	0.839	0.637
SN	0.728	0.842	0.641
Habit	0.766	0.861	0.675
RB_1	0.792	0.845	0.650
RB_2	0.809	0.841	0.644

Furthermore, Table (5) shows that every composite reliability coefficient is above 0.50, which further indicates the measurement model's internal consistency reliability [80]. Except for INT (0.973), the results confirm the reliability of the used measures [77]. We also examined the average variance extracted (AVE) to further assess the convergent validity. All the AVE values in Table (5) are significantly greater than the suggested ≥ 0.50 threshold [80], verifying the convergent validity of the adapted measures.

We evaluated the discriminant validity of the measures by verifying that the square root of the latent variables' AVEs is higher than the correlation of each construct with the other constructs [81]. The results in Table (6) confirm the presence of discriminant validity. We also employed the heterotrait–monotrait ratio of correlations (HTMT) to assess the measurement model's discriminant validity. All HTMT ratios shown above the diagonals in Table (6) are significantly underneath the suggested level of < 0.90 [82], a result that confirms the discriminant validity of the modified metrics. Therefore, these reliability and validity results together support the sufficiency of the measurement model.

Table 6: Discriminant validity.

Variables	ATT	Habit	INT	RB_1	RB_2	SN
ATT	0.798					
Habit	0.244 (HTMT = 0.347)	0.822				
INT	0.193 (HTMT = 0.233)	0.205 (HTMT = 0.227)	0.961			
RB_1	-0.091 (HTMT = 0.112)	0.156 (HTMT = 0.234)	-0.040 (HTMT = .044)	0.806		
RB_2	-0.434 (HTMT = 0.451)	-0.073 (HTMT = 0.113)	-0.005 (HTMT = 0.107)	0.433 (HTMT = 0.505)	0.802	
SN	0.272 (HTMT = 0.355)	0.061 (HTMT = 0.175)	0.389 (HTMT = .447)	0.106 (HTMT = 0.123)	0.010 (HTMT = 0.140)	0.801

The Evaluation of the Structural Model

Because the consequential model is focused on anticipating and optimizing the explained variance of INT, we employed techniques designed to assess the effectiveness of the prediction-focused PLS-SEM model. Hence, we used R^2 to assess the appropriateness of the outcome model results (Figure 2) and gauge the model's predictive precision. The R^2 values for ATT, HT, and INT in the model are 0.271, 0.060, and 0.187, respectively. Since INT is the final predicted factor in the model, an R^2 value of 0.187 signifies poor predictive precision for the model [75]; [74]. Moreover, multicollinearity is not a problem in the model since the VIF values for the independent variables (RB_1, RB_2, ATT, SN, and HT) are significantly lower than the proposed threshold (VIF = 5; Menard, 2001).

To evaluate the model's goodness of fit, we used the standardized root mean square residual (SRMR) and normed fit index (NFI) [82]. A low SRMR value (<0.08) indicates a strong fit between the measured and predicted correlations [82]. The model's SRMR index of 0.099 indicates that it is believed to be satisfactory. Moreover, the closer the normed fit index (NFI) is

to 1.00, the stronger the model's fit. Although falling below the proposed threshold of ≥0.90 [83], the NFI index of 0.660 suggests an acceptable model fit, considering the subjective nature of the data set.

Testing the Research Hypotheses

Since the CFA (Table 3) produced two groups (factors) of research barriers (RB_1 and RB_2), we have replaced *H1* with two new hypotheses:

H1a: The lack of a conducive research culture (RB_1) negatively affects attitudes (ATT) toward doing research.

H1b: Inadequate professional development and computing resources (RB_2) negatively affect attitudes (ATT) toward doing research.

Table (7) shows the paths (causal connections) between the exogenous and endogenous variables in the model. Along with the corresponding t-values and p-values, it also shows the PC values for the direct, indirect, and total paths. The total effects of the paths are utilized for testing the research hypotheses (Albers (2010) [84].

Table 7: Path coefficients.

Paths	Path coefficients	*t*-value	*p*-value	Sig.*	Hypotheses
Direct Effect					
RB_1 -> ATT	0.086	0.582	0.560	NS	
RB_2 -> ATT	-0.474	3.492	0.000	S	
ATT -> Habit	0.244	0.139	0.078	NS	
ATT -> INT	0.052	0.135	0.699	NS	
SN -> ATT	0.268	2.621	0.009	S	
SN -> INT	0.365	3.152	0.002	S	
HT -> INT	0.170	1.682	0.093	NS	
Indirect Effect					
RB_1 -> INT	0.008	0.298	0.766	NS	
RB_2 -> INT	-0.045	0.723	0.470	NS	
ATT -> INT	0.042	1.093	0.275	NS	
SN-> INT	0.025	0.585	0.559	NS	
Total Effect					
RB_1 -> ATT	0.086	0.582	0.560	NS	H1a
RB_2 -> ATT	-0.474	3.492	0.000	S	H1b
ATT -> HT	0.244	1.763	0.078	NS	H2
ATT -> INT	0.052	0.710	0.478	NS	H3
SN -> ATT	0.268	2.621	0.009	S	H4
SN -> INT	0.365	3.391	0.001	S	H5
HT -> INT	0.170	1.682	0.093	NS	H6
* S = significant, NS = not significant.					

RB_1 has a small positive impact on ATT (PC = 0.086, p = .560), while RB_2 has a noteworthy negative impact on ATT (PC = -0.474, p = 0.000). These findings uphold the dismissal of H1a and the acceptance of H1b. Furthermore, ATT has minimal positive impacts on HT (PC = 0.244, p = 0.078) and INT (PC = 0.052, p = 0.478). These findings provide evidence to dismiss H2 and H3. SN positively affects ATT (PC = −0.268, p = 0.009) and INT (PC = 0.365, p = 0.001), supporting the acceptance of H4 and H5. Additionally, HT has a small positive impact on INT (PC = 0.170, p = 0.093), providing evidence for the dismissal of H6. RB_1, RB_2, ATT, and SN have minimal effect on INT.

Discussion

The academics in our study intend to conduct future research. Nevertheless, no action may be rendered according to this INT, and it is not always certain that any action taken will be successful [51]. Time pressure may inhibit academics from converting research INT into actual research behavior. The investigated academics spend approximately half of their time on teaching-related activities and spend only 24% of their time on research (Table 1). Time thus becomes a source of conflict between research and other demanding duties like teaching and counseling. [63]; [25, 6]; [85]. Academics who carry, and continue to carry, heavy teaching loads will struggle to convert their research INT into actual research behavior.

While SN affects the academics' INT to do research, past research performance (HT) and ATT do not. SN has emerged as a robust antecedent of academics' research INT. The academics believe significant others (e.g., university executives, colleagues, colleagues, and relatives) assume them to do research. This social pressure reinforces their INT and encourages them to engage in future research. These normative beliefs help academics form positive ATT, which, in turn, reinforces their INT for doing research. Therefore, the greater the societal pressure to do research, the stronger the INT to do so. This result agrees with the presumed SN-INT relationship reported in a few relevant previous studies [68,15]; [64]; [40]; [41] and disagrees with Clarke's (2010) [66] finding of no relationship between SN and actual research behavior.

Although the TRA does not propose an SN-ATT relationship, this study verifies a significant effect of SN on ATT toward research. Hence, the research-related normative beliefs of the investigated academic community and the drive to adhere to these views (SN) reinforce the academicians' research-related behavioral beliefs (ATT). Academicians are expected to develop and maintain positive ATT about research when the pressure from significant others to conduct research grows. This finding confirms the conclusions of several earlier relevant investigations [68]; [69]; [70] that there are crossover effects between SN and ATT.

Furthermore, the favorable business academics' ATT toward research does not have significant effects on their INT and HT. The insignificant effect of ATT on INT contrasts with the assumptions of the TRA [34]. This result agrees with the findings reported in [67] and Clarke (2010) [66] and disagrees with the findings reported in a few other relevant prior investigations [15,68]; [64]; [39]; [65]. One reason for why ATT does not necessarily reinforce research INT is that ATT could become progressively less influential on INT over time because other factors such as SN become stronger drivers of INT [86]. Another plausible reason is that the respondents were not aware of their research ATT at the time of investigation, or they did not report them sincerely [87]. Furthermore, ATT has an insignificant effect on HT. Hence, past research behavior is perpetual and insensitive to added information, such as ATT changes [44]. Therefore, changing habitual research behavior, which is insensitive to changes in ATT, may not effectively reinforce that behavior [44].

When research becomes habitual, academics will likely develop a robust INT to continue doing research. However, our results imply that HT has an insignificant effect on INT. This result disagrees with a few earlier studies [4]; [24]; [27]; [54]) which found past research performance (HT) to correlate with academics' research INT and behavior. One plausible reason for this result is that using the extent of research performance in the last five years as a proxy HT measure may be questionable since it does not capture a few facets (e.g., unintentionality, uncontrollability, lack of awareness, and efficiency) of HT as a mental construct [47]. Another plausible reason is the way that HT contributes to the explanation of INT through finding a residue of experience that produces habitual rather than reasoned responses [53]. Therefore, HT's insignificant, unique effect on INT could be attributed to the effect of other factors in the research model (e.g., SN) or to factors that our research model does not account for.

Regarding the effect of research barriers on ATT, inadequate professional and skills development opportunities, and insufficient computing resources (RB_2) negatively affect ATT toward research. Although they are unclear on whether this barrier exists, the business academicians believe it negatively affect their ATT toward research. As such, inadequate research skills and resources are expected to reduce academics' research efficacy, which could negatively affect their research motivation and productivity [25]; [88]. In addition, academicians believe a favorable research-supporting culture (e.g., availability of research grants and funds for attending conferences) is lacking. However, surprisingly, this barrier (RB_1) does not affect their ATT toward research. A tenable explanation for this result is that public Egyptian universities, including AU, have been operating for a long time with limited research budgets due to difficult economic conditions. Therefore, experiencing limited research and travel funds doesn't appear to affect the business academics' research ATT because teaching extra courses to supplement their low salaries is more important to them than doing research and attending conferences, especially since research productivity is irrelevant to their tenure decisions.

Implications

The findings of this study have implications for theory and practice. In theory, it provides empirical evidence on business research INT and some of their determinants at a major Egyptian university. Arab-based studies in international higher education are still developing. Considering its limitations, it brings more depth to the ongoing discussion on research productivity in higher education. It adds to the increasing global knowledge of the academic productivity of scholars and the factors influencing their productivity at a personal and contextual level. Moreover, the discovery that ATT does not significantly affect research INT is intriguing and warrants additional studies on the attitude-intention connection in other Egyptian universities to confirm our findings.

The findings of this study will also assist in developing practice-based policies and strategies that will increase the productivity of business research at AU and other comparable HE institutions. Research output could grow in quantity and quality because of initiatives to increase academics' self-confidence in their research skills [88]. Like other higher education institutions, AU stands to benefit from eliminating barriers to research and using social pressure to boost scholarly productivity.

Business academics in AU have a robust INT to perform research. According to Ajzen (1985) [35], INT only turns into behavior if performing research is under volitional control. Therefore, research barriers (e.g., insufficient computing resources and opportunities for developing research and professional skills) that negatively affect ATT toward research and inhibit research INT from becoming behaviors should be removed. Removing these research barriers can boost business academics' efficacy beliefs in their abilities to do research and reinforce their research ATT and INT.

In addition, there is often tension between the time consumed on teaching and the time consumed on research [7]; [3]. Having business academics heavily engaged in teaching to make extra money and supplement their low salaries to offset the rising cost of living leaves them with little time for research. Government and/or institutional policies calling for a substantial improvement in the academics' salary structure should help in keeping reasonable teaching loads and freeing more time for research. This action would stimulate academics' research INT and behaviors.

Moreover, the AU's 2023 adoption of a distinct incentive system for publishing in international journals listed in the Web of Science (JCR), ranging from 20,000 to 6,000 EGP depending on the journal rank, is a step forward toward inspiring business academics' research performance. Yet, this initiative may not bear fruit in business academics' research productivity without overhauling the existing academic promotion policy. The brittle promotion scholarly requirements in the existing policy permit business academics to get promoted if they publish only in local and regional outlets. This policy should be amended to require at least some of the research productivity required for promotion to be published in international outlets which are listed in appropriate databases (e.g., Social Sciences Citation Index and Scopus). Besides, the practice of the promotion process in place has been criticized, as the procedure of assigning the members of the national evaluation committees for the promotion cases and the methods used by these committees to evaluate the scholarly performance of the applicants are often capricious and arbitrary. This process should therefore be remodeled to improve transparency, consistency, and predictability, which could, in turn, derive more favorable research ATT and INT.

The social environment (SN) has also been identified as a significant channel through which culture is expressed and affects the ATT of academics towards research. Academics experience considerable social pressure from their peers, executives, and significant others to engage in research. Therefore, it is important to create an organizational culture that nourishes social pressure that persuades academics to be scholarly productive.

The appointment of AU academic leaders (e.g., department chairs, deans) should be based mainly on their research records. They are expected to be role models, and through their research-related intentional behaviors [89], they can influence the academics' research attitudes and behaviors. They should also create enduring research norms appropriate to the different academic departments and encourage the academics to collectively agree upon and raise their own research aspirations. In addition, policymakers at AU should capitalize on the prevailing collectivist values in Egypt to reinforce positive research ATT among academics. As collective individuals, academics will expectedly prioritize the success, loyalty, and well-being of the group over individual achievements and rewards. Hence, they should be inspired to understand that carrying out research is essential to advancing the goals of the academic community.

Limitations and Future Research

This study has limitations that should be considered when interpreting the results. First, the generalizability of our results could be limited by the fact that they are based on a single institution while academic institutions differ in culture and policies [90]; [91]. To verify whether the findings of this study can be generalized to other cultures and higher education settings, curious researchers should carry out replications of this study and compare the results. Second, future research may also investigate the moderating effects that personal and contextual characteristics (e.g., gender, age, experience, academic rank, employment terms, teaching load, and promotion requirements) could have on the effect of ATT, SN, HT, and research barriers (RB) on research INT.

Third, just 19% of the variation in the researchers' intended research is explained by the factors this study investigated. Future studies may consider examining additional contextual and individual factors that could account for a greater variation in academics' research INT. For instance, culture has a considerable influence on how people behave [92]. Hence, cultural characteristics (e.g., institutional collectivism, in-group collectivism, and performance orientation) may affect academics' research behavioral beliefs and INT. Culture measures could therefore be used to probe the effect of ATT, HT, SN, and barriers on research intentions and behaviors among academics.

Fourth, this study finds the direct effect of past behavior (i.e., HT) on INT as well as the indirect effect of ATT on INT through HT insignificant. HT could infer a favorable ATT toward a behavior, which in turn could affect INT [24]; [48]. Future research may therefore investigate the effect of HT on academics' research INT directly and indirectly through ATT in different academic settings. Fifth, in this study, the outcome variable is research INT, which refers to the preparedness of academics to do research. It is plausible that these academics may have exaggerated their preparedness to conduct research as a behavior that is considered desirable by society. It is imperative to acknowledge that mere INT to do research do not inevitably translate into action, and even if action is undertaken, success is not assured [51]. Future studies should therefore adapt research models that include both INT and behavior as outcome variables to examine the hypothesized relationship between the two in academic research settings.

Conclusions

Academic institutions' ability to access high-quality financial and academic resources, as well as their rankings in national and international rankings, are largely dependent on their academics' scholarly productivity. However, a variety of factors might impact academics' research productivity; therefore, determining how these factors affect academics' research intentions and behaviors could help strategies and policies that focus on enhancing productivity. This study in an Egyptian public university examined how research barriers (RB), habit (HT), social norms (SN), and attitudes (ATT) affected business academics' research intentions (INT) using an extended Theory of Reasoned Action model. SN has emerged as the most significant factor in predicting research ATT and INT. RB negatively impacts ATT due to insufficient professional and research skills and computing resources, but ATT has little impact on INT. Moreover, prior research accomplishments (HT) appear to have no significant impact on INT. Although social pressure encourages academics to participate in future research activities, positive ATT towards research and previous research experiences do not have the same effect. These results contribute to the developing repository of knowledge on academic research in global higher education.

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