Research Article

Can Research Behavior and Motivation Influence Academics' Research Productivity? A Malaysian Evidence

Erlane K Ghani [1*], Kamaruzzaman Muhammad [2], Mazurina Mohd Ali [3], Rina Fadhilah Ismail [4], Susanti Susanti [5], Moh Danang Bahtiar [6], Suci Rohayati [7]

[1*] Professor, Faculty of Accountancy, Universiti Teknologi MARA Cawangan Selangor, Puncak Alam, Malaysia
[2][3][4] Associate Professor, Faculty of Accountancy, Universiti Teknologi MARA Cawangan Selangor, Puncak Alam, Malaysia
[5] Professor, Faculty of Business and Administration, Universitas Negeri Surabaya, Indonesia
[6][7] Lecturer, Faculty of Business and Administration, Universitas Negeri Surabaya, Indonesia
* **Corresponding Author:** kamaruzzaman@uitm.edu.my

ARTICLE INFO	ABSTRACT
	Engaging in research is a fundamental responsibility for academics since it fosters the development of new knowledge and ideas. In order to facilitate this transition, it is essential for the academics at each respective institution to shift their primary emphasis from pedagogy to include a balanced dedication to both teaching and research. Nevertheless, academic research has been shown to have suboptimal levels of output, according to many studies. Such a scenario creates concern among the universities as research is part and parcel of an academic's career, which sets a path for them to excel as a professor. Therefore, the objective of this study is to investigate the many elements that have an impact on the research productivity of academics. Specifically, this study specifically investigates the potential impact of research behaviour and motivation on the research productivity of academics. This study showcases the impact of research behavior and motivation on the research productivity of university academics, based on a questionnaire survey conducted with a sample size of 192 individuals. The results of this study provide a relevant and valuable addition to the comprehension of research productivity among academics, hence offering potential insights for educational leaders within the public institutions of Malaysia. The findings of this study are expected to provide valuable insights for universities in devising ways to enhance the research productivity of their academics, as well as in determining effective means of supporting academics in fostering research productivity.

INTRODUCTION

The role of research has evolved from being predominantly the domain of university academics to being acknowledged as a crucial element in a university's strategic deployment of human capital resources (James, Krause, & Jennings, 2009; Ryazanova & Jaskiene, 2022). The inclusion of supplementary responsibilities in the domains of instruction, scholarly inquiry, and professional engagement has led to an increased level of complexity in the role of university academics. These individuals are sometimes referred to as all-rounders since they are tasked with a variety of responsibilities, each of which is influenced by distinct factors related to the particular academic programme, department, and institution in which they are registered. Proficiency to carry out and implement research is widely regarded as an essential skill for academics in educational institutions globally. As a result, it is anticipated that individuals will exhibit productivity in their research pursuits.

In 2009, the Ministry of Higher Education in Malaysia implemented the Malaysia Research Assessment (MyRA), which encouraged scholars in the nation to actively participate in research endeavours (Ramli et al., 2013). The allocation of performance ratings to universities is predicated on two fundamental aspects of MyRA: the calibre and volume of academic pursuits, as well as the productivity of research endeavours. Consequently, the

incorporation of research has become an essential component of universities' objectives, leading scholars to actively participate in research initiatives with the aim of augmenting their scholarly output. Nevertheless, a considerable body of research has indicated that a notable segment of university academics abstain from participating in research endeavours (Nguyen, 2015; Basiru, 2018; Uwizeye, et al., 2021). Consequently, despite being urged to undertake research and the implementation of a policy that penalizes non-publication within a year, these academics fail to publish their findings. This phenomenon occurs despite the enforcement of a regulatory measure designed to impose penalties on individuals who do not meet the requirement of publishing their work within a period of one year. Numerous scholarly enquiries have revealed a conspicuous deficiency in research productivity among academics (Nguyen, 2015; Uwizeye et al., 2021). In 2021, a public institution in Malaysia had a collective count of 140 accounting professors. However, it is noteworthy that hardly 24 per cent of these individuals engaged in research activities and subsequently published their findings. This observation indicates that a considerable proportion of accounting academics refrain from engaging in research activities, thereby leading to a lack of publications attributed to their scholarly endeavours. Currently, there seems to be a discrepancy between the level of research being conducted by academics and the expected output. It is imperative for university administrations to conduct an investigation into the fundamental factors contributing to this issue (Bexley, James, & Arkoudis, 2011). Additionally, it is crucial for administrators in education to determine the motivating reasons that prompt academics to participate in research activities, in order to strategically capitalise on their specific areas of expertise. It is imperative to conduct a thorough examination in order to determine the various elements that influence the degree of research involvement among academics at academic institutions. Hence, the primary objective of this study is to address the subsequent research enquiries:

1. Do academics' research behaviours influence their research productivity in Malaysian universities?

2. Do academics' motivational factors influence their research productivity in Malaysian universities?

The findings of this study provide a valuable contribution to the understanding of research productivity among academics, which might be beneficial for educational leaders at public institutions in Malaysia. The findings of this study are expected to provide valuable insights for universities in developing effective ways to enhance the research productivity of their academic staff, as well as in establishing mechanisms to promote and foster research productivity among their academics. These projected findings are expected to provide assistance to institutions in establishing strategies for supporting their academics in enhancing research productivity. The relevant literature review for this topic will be given in the subsequent section, denoted as Section 2. Subsequently, Section 3 encompasses a comprehensive elucidation of the research design used, while Section 4 presents the obtained outcomes together with an accompanying analysis and interpretation of the findings. The findings of this investigation are delineated in the concluding section.

LITERATURE REVIEW

Engaging in scientific research is a fundamental obligation that academics must undertake to facilitate the advancement of novel thoughts and knowledge (Hu & Gill, 2000). For this transition to occur, it is imperative that the academics at their educational institution redirect a portion of their emphasis from teaching toward research (Brew, 2006). According to Cummings and Shin (2014), engaging in research is often regarded as the most esteemed pursuit for academics in educational institutions. Based on prior research, it is anticipated that academics employed by universities are required to devote a substantial amount of their time to doing research, in addition to fulfilling their obligations in teaching and administration (Hunter & Kuh, 1987; Jensen, 1988; Hu & Gill, 2000; Nguyen, 2015). This practice is used to guarantee that individuals are capable of attaining the research goals set out by their particular academic institutions. Webber (2011) posited that the emphasis on rankings and the pursuit of reputation has elevated the significance of research productivity in the realm of higher education.

Nguyen (2015) posits that research productivity is defined by the outputs of the research process. One of the several methods used to assess an individual's research productivity is via quantifying the quantity of scholarly papers, book chapters, dissertations, and theses that have been published (Raston, 1998). According to Kaya and Weber (2013), the process of disseminating research findings includes not just the publication of scholarly articles, but also the presentation of lectures at academic conferences and the acquisition of funding. Nguyen (2015) posits that a commonly used method for assessing an academic's research productivity is the quantification of their published journal articles. Journals are frequently regarded as the primary means of communicating creative ideas to a global audience. The importance of research production has emerged as a critical factor for academic recruitment and development at research institutes globally. This assertion is especially true in relation to the number of scholarly articles published in academic journals, as it is a critical determinant of newly appointed academics' prospective success as researchers and their ability to contribute to the research goals of their

respective institutions (Cummings & Shin, 2014). Scholarly study, however, has revealed that the number of publications produced by academics remains severely limited. Some studies have identified potential elements that may influence the research productivity of university professors (Goodwin & Sauer, 1995; Tien & Blackburn, 1996; Bexley et al., 2011; Nguyen, 2015).

Several studies have investigated the correlation between research behavior and research production (Goodwin & Sauer, 1995; Mokhtar & Noordin, 2019; Henry, Ghani, Hamid, & Bakar, 2020). As an example, the study conducted by Goodwin and Sauer (1995) aimed to investigate the extent of variability in research productivity among 140 full-time professors across seven departments with a strong emphasis on research. The researchers used the curriculum vitae of the participants in order to ascertain the aggregate quantity of refereed journal articles that had been published by them. Based on the available data, it can be seen that academics in the first stages of their careers had a notable level of productivity. However, as their careers advanced, a decline in productivity became evident, ultimately culminating in a reduction in output until their retirement. Specifically, early-career academics who have not yet achieved tenure are heavily engaged in research endeavors with the aim of successfully navigating a rigorous evaluation process that ultimately decides their formal admission to a faculty position. Consequently, their research productivity surpassed that of tenured professors.

Chen, Gupta, and Hoshower (2006) posited that the incentive for engaging in research within this context is the extrinsic benefit of attaining tenure at the respective academic institution. The researchers, basing their study on the expectancy theory framework, saw various research incentives as distinct sorts of rewards. The hypothesis posited that researchers in academia would exhibit heightened motivation to engage in research activities when they held the belief that their research outcomes would provide some kind of reward. This study used a quantitative technique to conduct an empirical examination of 12 distinct motivating incentives. A study was conducted to examine the variations in reward preferences between tenured and untenured academics. The sample consisted of 320 individuals from 10 business schools affiliated with 10 research institutions in the United States. The investigation used a questionnaire of 12 elements to gather data on the participants' incentive preferences. The research conducted by the authors of the study also revealed that academics who transitioned into administrative leadership roles saw a significant decline in their research productivity, to the extent that it was almost diminished entirely or sustained a long-term reduction. It might be argued that Malaysian universities may exhibit comparable situations in terms of their academic landscape. Consequently, the present research formulates the following hypotheses:

H1: Research behavior significantly influences academics' research productivity in Malaysian universities.

Several studies have investigated the impact of motivation on research productivity, as shown by Chen et al. (2006), Nguyen (2015), Maharjan, Stoerman, and Froese (2021), and Uwizeye et al. (2021). Motivational variables, also known as research incentives, may be identified as significant elements that drive individuals to engage in research activities (Nguyen, 2015). The aforementioned studies have shown that the motivation of academics to engage in research is likely to be highest when they have the belief that their research achievements would result in certain incentives (Goodwin & Sauer, 1995; Tien & Blackburn, 1996; Chen et al., 2006). Tein and Blackburn (1996) performed a study aimed at examining the potential impact of incentive structure and promotion on the research productivity of academics. The researchers discovered that the implementation of a reward structure and promotion system had a positive impact on the research productivity of academics. Nevertheless, Tien and Blackburn (1996) were unable to provide definitive evidence to substantiate their claim, since the correlation between academic rank and research production among scholars exhibits considerable variability contingent upon the specific topic of study. The researchers discovered that assistant professors, who lack tenure, produced a greater quantity of publications compared to associate professors, who possess tenure.

Chen et al. (2006) conducted a study to investigate the influence of several motivating variables on the research productivity of academics in the field of business. It was found that the tenure status of academics exhibited inconsistency. Based on their research, a robust positive link was shown between research productivity and two factors: the tenure status of academics and the duration of time dedicated by academics to research activities. Furthermore, it has been shown that tenured academics are intrinsically motivated to engage in research, but academics without tenure are extrinsically motivated to do research. The present study also posits that the presence of motivating variables would increase academics' propensity to engage in research activities. Consequently, the following hypothesis is formulated:

H2: Motivational factors significantly influence academics' research productivity in Malaysian universities.

METHODOLOGY

Sample Study

The target demographic for this study consists of academics from both public and private universities across Malaysia from sciences and non-sciences areas. The study encompassed participants who were associated with their universities and possessed a minimum of three years of tenure at their respective universities during the period comprising from 2019 to 2021 as this is aligned with their current publication, level of teaching programme and when they are required held the position of lecturer or a higher academic level. This methodology is employed to guarantee that all academics get a thorough comprehension and proficiently fulfill their responsibilities to conduct research within their respective fields of study. Therefore, the population of this study is the academics in universities according to the region in Malaysia. Malaysia is geographically categorised into six primary regions, which are the Northern Region, Central Region, Southern Region, East Coast, Sabah, and Sarawak. Consequently, the group of sampling in this study is conveniently approachable by researchers according to their voluntary participation in data collection.

Data Collection

Within the scope of this study, the questionnaire survey has been sent to academics employed at both public and private universities in Malaysia from October 2022 until December 2022. The distribution process was facilitated by the use of a Google Form. The invitation message has been circulated through electronic communication platforms such as emails, WhatsApp, and Telegram to the representative from each university. After three months of the data collection process, a total of 192 surveys were completed and returned for the purpose of analysis.

Research Instrument

This study's quantitative data was gathered through the use of a questionnaire survey. A thorough review of existing research, including the works of Nguyen (2015) and Mokhtar and Nordin (2019), influenced the formulation of the questionnaire. The questionnaire is broken into four sections as summarized in Table 1. First, the survey asks respondents to identify their degree of research productivity by reporting the number of scholarly outcomes produced over a three-year period, from 2019 to 2021. Participants were asked to indicate the level of their research productivity in this section. This included describing the number of times they were the single author for national and international refereed journals or book chapters, as well as the number of times they were the primary researcher or team member for national and international grants. In this specific section, participants were instructed to offer their replies using a 5-Likert scale. For example, if a participant has fewer than one publication, their response might be given on a numerical scale beginning at 1. Alternatively, if the person in question had produced 7 to 9 articles in the previous three years, his reaction would be expressed on a scale of 4.

Section Two of the survey requires participants to reply to a set of inquiries pertaining to their research conduct. These inquiries include activities such as soliciting feedback from colleagues on manuscripts, engaging in discussions with academics from different institutions within their own nation, and working with colleagues on research endeavors. Section Three requires participants to answer a set of questions pertaining to research motivation. The participants were given instructions to deliver their responses to a series of inquiries that covered many issues, including achieving a professorial post, reducing their workload, and receiving recognition from their peers. The completion of Sections 2 and 3 is expected to be done by the respondents using a 6-point scale. The final section, referred to as section 4, requests information regarding the demographic characteristics of the participants.

Table 1. Research Instruments

Section	Items	Scale	Adopted and Modified
1	Research productivity	5 Likert scale	Nguyen (2015) Mokhtar and Nordin (2019)
2	Research conduct	6 Likert scale	
3	Research motivation	6 Likert scale	
4	Demographic profiles	-	

Data Analysis

The data analysis process for quantitative research on academics' research behaviors influencing their productivity in Malaysian universities was used in this study. In this study, preliminary analysis techniques such as normality, reliability, frequency, and descriptive analysis were applied. Rigor statistical techniques, such as regression analysis or correlation, are used to identify the relationship between the factors tested in this study and

the data. Finally, researchers analyze the findings of academic research behaviour and its impact on productivity within Malaysian universities to draw conclusions and provide recommendations.

RESULTS

Demographic Profile

Table 2 displays the descriptive data pertaining to the sample used in this study. The survey included data collected from a total of 192 scholars employed in both public and private educational establishments situated throughout Malaysia. Based on the available data, it is evident that a majority of survey respondents, namely 58.3%, fall under the age bracket of under 30 years. The respondents who are within the age range of 41 to 50 constitute the second largest group, accounting for 20.8% of the total. Following them, the third largest group consists of respondents who are over the age of 50, making up 14.6% of the total. The results of this survey indicate that those below the age of 30 constitute the majority of responses, perhaps indicating a recent emergence of academic interest in the subject matter. A mere 27.1% of the participants identified as male, indicating a minority representation within the respondent pool. Conversely, females were the majority, accounting for 72.9% of the total respondents. According to the data shown in Table 1, a majority of the participants, slightly over 50%, occupy the role of senior professor. The aforementioned proportion represents 54.2% of the whole amount. Following this category, there is a group of respondents consisting of associate professors, accounting for 14.6% of the whole sample, and academics, comprising 27.1% of the entire population. The proportion of professors among the total responders is a modest 4.2%. This observation is anticipated given the relatively low quantity of academics in Malaysia, coupled with the approaching retirement age of many of these individuals. Consequently, there exists a potential for their reluctance to participate in the study.

Furthermore, this study requested the participants to identify their corresponding academic members. Based on the results, it was determined that 43.8% of the participants are affiliated with the faculty of economics and business, whilst the remaining participants are associated with the field of science and technology. The proportion of replies provided by the faculty of social science accounts for just 20.8% of the overall total. In regards to the most advanced degree of instruction, it is noteworthy that 39.6% of participants have imparted knowledge up to and including the doctoral level, a designation often associated with the act of supervising others. Out of the whole sample size, including 32 participants, it was found that 16.7% of respondents have prior teaching experience at the master's degree level or less. Out of the complete sample, the remaining 84 participants, constituting 43.8% of the total, only possess experience in teaching undergraduate students.

Table 2. Demographic Profile of Respondents

		Frequency	Percentage
Age	Below 30	112	58.3
	31 to 40	12	6.3
	41 to 50	40	20.8
	Above 50	28	14.6
Gender	Male	52	27.1
	Female	140	72.9
Academic rank	Lecturer	52	27.1
	Senior Lecturer	104	54.2
	Associate Professor	28	14.6
	Professor	8	4.2
Faculty related	Science & Technology	68	35.4
	Social Science	40	20.8
	Economics and Business	84	43.8
Highest teaching level	Undergraduate Students	84	43.8
	Masters Students	32	16.7
	Ph.D. Students	76	39.6

Descriptive Analysis

Initially, a descriptive analysis was conducted on all datasets associated with each variable. The participants used a Likert scale consisting of six points to express their preferences, where a score of one represented significant disagreement and a score of six represented strong agreement. Table 2 presents descriptive statistics pertaining to the quantity of research conducted. The efficacy of the study was assessed using a set of 10 assertions.

According to the data shown in Table 3, it can be seen that a significant proportion of scholars who published as the sole authors in nationally referred journals had an average score of 2.2917. On the other hand, those who collaborated with others and wrote as co-authors in international refereed journals attained a higher mean score of 2.8125. The difference between the two sets of scores becomes apparent upon comparison.

Table 3. Descriptive Statistics of Research Productivity

Statements	Mean	Std. Deviation
Sole author for National refereed journal	2.2917	1.30978
Co-author for International refereed journal	2.8125	1.36763
Principal researcher for a research project at the university level	2.1667	1.03009
Principal researcher for a research project at the ministry level	1.5417	0.91430
Principal researcher for a research project at the international level	1.5625	0.93576
Team member for a research project at the university level	2.2083	1.00174
Team member for a research project at the ministry level	1.7500	0.99212
Team member for a research project at the international level	1.7292	1.11608
Sole author of textbooks, books and book chapters	1.6667	0.85206
Co-author for textbooks, books and book chapters	1.7083	0.86728

The academics engaged in research endeavors in various capacities, including serving as principal investigators (mean score: 2.1667) and as members of research teams (mean score: 2.22083). It is noteworthy that their involvement in research projects is more prevalent at the university level compared to projects conducted at the ministry or international level. The individuals engaged in academia also assumed sole authorship or co-authorship for many textbooks, novels, and book chapters. These literary works garnered average ratings of 1.6667 and 1.7083 for textbooks and novels, respectively. However, considering the figures shown in Table 2, it is justifiable to argue that the scholarly productivity of academics remains relatively inadequate. This phenomenon may be attributed to the fact that a significant proportion of scholars engaged in less than three research endeavors throughout the three-year period spanning from 2019 to 2021.

The research behavior of the participants is analyzed using descriptive statistics and shown in Table 4. There exist a total of eleven statements that are relevant to the execution of research. On average, the participants achieved the highest attainable mean score of 4.000. The results of the study suggest that the participants assigned the phrases "engaging in discussions with colleagues to foster the development of research ideas" and "seeking guidance from experienced colleagues to enhance research proficiency" the highest average score of 4.000 each. In addition, the participants collaborate with their colleagues in doing research (mean score: 3.9792) and generating research concepts (mean score: 3.8542). The results of this study indicate that the participants actively participate in research endeavors.

Table 4. Descriptive Statistics of Research Behavior

Statements	Mean	Std. Deviation
Discussing with colleagues to find research ideas	4.0000	0.81863
Seeking advice from experienced colleagues to improve research capability	4.0000	0.81863
Asking colleagues to review manuscripts	3.5833	1.04020
Collaborating with colleagues to do research	3.9792	0.88002
Giving feedback on manuscripts of colleagues	3.6250	0.97347
Discussing with academics from other universities in one's own country	3.4792	1.08275
Discussing with academics from other universities in other countries	3.1667	1.28354
Supervising undergraduate students to write a thesis	3.8125	1.25588
Supervising Master students to write a thesis	3.1458	1.59829
Supervising PhD students to write a thesis	3.1458	1.69989
Discussing with colleagues to find research ideas	3.8542	1.04335
Seeking advice from experienced colleagues to improve research capability	4.0000	1.00261
Asking colleagues to review manuscripts	3.5000	1.17567
Collaborating with colleagues to do research	3.8958	1.14388
Giving feedback on manuscripts of colleagues	3.5000	1.12096
Discussing with academics from other universities in one's own country	3.5000	1.24488
Discussing with academics from other universities in other countries	3.3125	1.37527
Supervising undergraduate students to write a thesis	3.9583	1.58472
Supervising Master students to write a thesis	3.4375	1.69886
Supervising PhD students to write a thesis	3.4375	1.88581

Table 5 presents the descriptive statistics of the motivation factors. There are a total of eleven distinct factors that are considered to be influential factors in motivation. The respondents assigned the highest mean score of 5.2917 to the item that pertained to fulfilling a personal urge to contribute to the field. Subsequently, the participants expressed their motivations as "fulfilling a personal desire to remain up-to-date in the discipline" and "fulfilling a personal desire to engage in collaborative endeavors", with both claims receiving an average rating of 5.1875.

Table 5. Descriptive Statistics of Motivational Factors

Statements	Mean	Std. Deviation
Being promoted	5.1250	0.85920
Getting a professorship	5.0000	1.06343
Getting a managerial position	3.5833	1.33943
Getting a better salary	4.6250	1.33617
Getting a reduced teaching load	3.6667	1.54964
Satisfying a personal need to stay current in the field	5.1875	0.75630
Satisfying a personal need to contribute to the field	5.2917	0.76462
Satisfying a personal need for creativity and curiosity	5.1875	0.78350
Satisfying a personal need to collaborate with others	5.0833	0.93413
Achieving peer recognition	4.8125	1.03663
Getting respect from students	4.1875	1.56742

The results of this study suggest that the participants see these factors as the main drivers of their research productivity. This applies not just to the motivational factors but also to the other components examined in this study. This phenomenon was seen not just throughout the broader set of components but also specifically within the domain of motivational factors.

Subsequently, this study provides descriptive data pertaining to the variables, specifically focusing on the mean scores of the primary variables. The findings are shown in Table 6. According to Table 5, the average score for the factors of research productivity was 1.9438, with a standard deviation of 0.82701. Based on the results of this study, it has been observed that the average number of publications produced by academics is less than two per year, and they are involved in less than two projects annually. This finding indicates that scholars exhibit a very modest level of research production.

Table 6. Descriptive Statistics of Research Productivity, Motivational Factors and Research Behavior

	Research productivity	Motivational factors	Research behaviour
Mean	1.9438	4.7045	3.6167
Std. Deviation	0.82701	0.6422	0.82280
Minimum	1.00	3.00	1.00
Maximum	6.00	6.00	6.00

The findings of the research behavior are shown in Table 6. A total of 20 instruments are used for the assessment of research behavior. The aforementioned elements encompass soliciting peer review of manuscripts, engaging in collaborative research endeavors with colleagues, engaging in scholarly discourse with academics from both domestic and international universities, overseeing the academic progress of students, and seeking guidance from seasoned researchers to enhance one's research acumen, among other activities. The findings indicate that the average score for these statements is 3.6167, with a standard deviation of 0.8228. The data indicates that the majority of participants expressed agreement with the claims but with a minority holding differing opinions. Furthermore, the measures exhibit little deviation from the central trend. The findings indicate that there may be variations in research practices among academics.

A set of eleven statements was used to assess the motivating variables, including opportunities for career advancement, attainment of a professorial position, improvement in remuneration, acknowledgment from peers, and fulfilment of personal desires for creativity and curiosity, among other aspects. According to Table 5, the average score for the core assertions is 4.7045, with a standard deviation of 0.6422. The aggregate average score indicates a strong level of agreement among the majority of responders with the given assertions. A marginal difference may be seen in the average ratings of the assertions. Based on the aforementioned conclusion, it is very likely that motivation plays a significant role in the research productivity of academics.

Preliminary Analyses

In this investigation, Cronbach's alpha was used to assess the reliability of the variable measurements.

Sekaran and Bougie (2016) have used Cronbach's alpha as a statistical metric to assess the degree of inter-item consistency, hence enabling the estimation of the average intercorrelation among the items utilized for measuring the concepts under investigation. The purpose of this study was to ascertain the mean intercorrelation among the items used to assess the concepts. The presence of missing data has a detrimental effect on the dependability of Cronbach's alpha. Given that alpha is determined by the ratio of two unique variations, its potential range of values spans from 0 to 1. This phenomenon may be attributed to the calculation of the ratio between two distinct variations. Although it is natural for only positive values to be considered, estimates of alpha may range from zero to one (Malhotra, Hall, Shaw, & Oppenheim, 2004; Field, 2005).

The findings of Cronbach's alpha for each of the variables are shown in Table 7. The Cronbach's alpha coefficient for the set of 10 statements that assess academics' research productivity is calculated to be 0.931. The Cronbach's alpha coefficient for the measurement of research behavior is 0.927. The Cronbach's alpha coefficient for the motivating component is 0.791, indicating a very low level of internal consistency compared to the other factors. Nevertheless, given that all the values are above 0.7, it may be concluded that all variables have attained a satisfactory level of consistency, as the score exceeds the threshold of 0.70.

Table 7. Cronbach's Alpha

Variable	Cronbach's Alpha	N of Items
Research productivity	0.931	10
Motivational factor	0.791	11
Research behaviour	0.927	20

A test for normality was performed in order to evaluate the extent to which the data conforms to a normal distribution. The use of the data pertaining to skewness and kurtosis was crucial in the execution of this procedure. George and Mallery (2010) suggest that distributions exhibiting skewness and kurtosis values between the range of -2 and +2 may be regarded as adhering to the attributes often associated with normal distributions. This phenomenon may be attributed to the fact that the aforementioned values are inside the allowed range for normal distributions. The results of this study are shown in Table 8, which displays the skewness and kurtosis values for the variables analyzed in this study. It is seen that all the variables fall within the range of -0.759 to 2.112. The results suggest that, with the exception of research productivity, all components are situated within a range of -2 to +2. In contrast, the measures of skewness and kurtosis related to research productivity show little fluctuation within the range of -2 to +2, regardless of whether they lean towards positive or negative values.

Table 8. Normality Test

Variable	Normality Test		Mean
	Skewness	Kurtosis	
Research productivity	1.586	2.112	1.9438
Motivational factors	-0.471	0.095	4.7045
Research behaviour	-0.154	-0.759	3.6167

Correlation Analysis

The present study utilized the Pearson correlation matrix, with a significance level of $p = 0.05$ to examine the associations among variables. The analysis of the data presented in Table 9 reveals a noteworthy correlation coefficient of 0.233 between motivation and research productivity ($p = 0.001$). This statistically significant result suggests a strong and positive relationship between motivation and research productivity. Moreover, the current investigation presents empirical support for a significant positive association ($r = 0.510$, $p < 0.001$) between research behaviour and research productivity, suggesting a robust and credible relationship.

Table 9. Correlation Analysis

	Motivational Factors	Research Behavior	Research Productivity
Motivational factors	1	.247**	.233**
		0.001	0.001
	192	192	192
Research behavior	.247**	1	.510**
	0.001		0.0001
	192	192	192
Research productivity	.233**	.510**	1
	0.001	0.0001	
	192	192	192

Multiple Regression Analysis

The findings of the multiple regression analysis are shown in Table 10. The analysis yielded an R2 score of 0.272. Based on the data presented, it is possible to conclude that the combined influence of motivational variables and research behaviour accounts for 27.2% of the variability in the research productivity of academics engaged in Malaysian institutions. The 72.8%, could be attributed to additional factors not considered within the scope of the research productivity study.

Table 10. Multiple Regression Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.522a	0.272	0.265	0.70921

a. Predictors: (Constant), Motivational factors, Research behaviour
b. Dependent Variable: Research productivity

The analysis of variance (ANOVA) test revealed a significant association between the motivational factors, research behaviour and research productivity, as shown in Table 11. Given that the F-value was significant (F = 35.36, p< 0.001) that indicates the regression model used was reliable and the data conformed to the model. This implies that the motivational factors and research behaviour have a consistent ability to predict research productivity.

Table 11. ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
	Regression	35.571	2	17.785	35.360	< .001
1	Residual	95.062	189	0.503		
	Total	130.633	191			

Table 12 shows the regression coefficients for the linear association between motivating factors, research behavior, and research productivity. Table 12 shows that there is a significant positive association (=0.484; p = 0.0001) between research behavior and research productivity of academics employed in Malaysian universities. As a result, Hypothesis 1 is confirmed. In terms of motivational factors, the findings show that researchers hired in Malaysian institutions have a marginally significant influence on the quantity of research produced (p = 0.147; = 0.076). As a result, H2 may also be confirmed. The outcomes of this study reveal that Malaysian academics' research productivity is influenced by both their research behavior and motivational factors.

Table 12. Multiple Regression Coefficient

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		β	Std. Error	Beta		
	(Constant)	-0.499	0.403		-1.237	0.218
1	Motivational factor	0.147	0.082	0.114	1.782	0.076
	Research behaviour	0.484	0.064	0.482	7.524	0.0001

a. Dependent Variable: Research productivity

As a result, the regression model may be described as follows:

Research productivity = -0.499 + 0.147 (motivational factor) + 0.484 (research behaviour)

DISCUSSION

This study investigates the many factors that impact the scholarly productivity of academics. This study specifically investigates the potential impact of research behaviour and motivation on the research productivity of academics. This study examines the impact of research behaviour and motivation on the research productivity of academics. It is based on a survey conducted with a sample size of 192 respondents. Both characteristics may significantly influence the research productivity of academics. When it comes to research behaviour, consulting with colleagues or mentors is a behavioural feature that may greatly impact an academic's research productivity. There are several justifications for the significance of this conduct within the study environment. Academics might get advantages from soliciting assistance since they can receive valuable direction and mentoring from seasoned researchers. Seasoned peers may give significant insights, disseminate optimal methodologies, and provide valuable viewpoints that assist in the formulation of efficacious research methods. Experienced academics who

have successfully overcome the difficulties of research might provide their insights and guidance to the other academics, enabling them to steer clear of typical obstacles. Implementing this guidance may result in time savings, less frustration, and enhanced overall efficiency in the research process.

Engaging in research behaviour, such as seeking assistance, provides the chance to familiarise oneself with various research methodologies and procedures. Colleagues with diverse skills may provide recommendations about experimental design, data analysis, and other methodological issues, resulting in a more thorough and resilient research strategy. Colleagues may possess resources such as specialist equipment, data collections, or research facilities. Faculty may accelerate the research process and expand the scope of their work by seeking help and using these tools. Seeking advice encourages networking within the academic community. Cultivating professional connections with colleagues may result in the formation of collaborative research prospects, cooperative initiatives, and the exchange of ideas, all of which can significantly enhance research productivity. Colleagues have the ability to provide valuable input on study ideas, methodologies, and findings. This input is crucial for enhancing research strategies, mitigating possible limits, and ensuring the excellence of research outcomes.

Consulting with people from many fields may facilitate multidisciplinary cooperation. This cooperation may foster diverse viewpoints in research initiatives, resulting in more imaginative and comprehensive strategies for intricate issues. Engaging with coworkers may foster innovation and spark fresh avenues of inquiry. Engaging in brainstorming sessions and engaging in talks about existing projects might result in the emergence of novel ideas and alternative viewpoints that may have otherwise been overlooked. Soliciting guidance fosters the development of a cohesive research community within an educational establishment. A climate that fosters collaboration and support motivates academics to participate in research endeavours, exchange their skills, and jointly contribute to the progress of knowledge. Requesting guidance is an assertive strategy for individual and career development. Academics who actively seek guidance have a strong dedication to ongoing learning, enhancement, and the cultivation of their research abilities, eventually leading to a rise in their total research productivity.

The motivation of academics can also impact their research productivity. Motivation has significant importance within the realm of study for several reasons. Determined academic members often possess a strong internal motivation to engage in research. The intrinsic motivation stems from a genuine fascination with the topic, a drive to contribute to the advancement of knowledge, and an intense enthusiasm for making significant breakthroughs. Conducting research may be a laborious and even challenging endeavour. Faculty who are driven are more inclined to maintain their exertions and dedication over an extended period of time. Consistently using this exerted effort is crucial for doing comprehensive literature reviews, formulating robust investigations, gathering data, and evaluating findings. Motivation enhances the development of original ideas and inventive approaches in scientific investigation. Academics who possess a strong drive to investigate novel concepts and approaches are more inclined to formulate fresh research inquiries, produce inventive hypotheses, and devise imaginative solutions to research challenges.

Furthermore, research often encounters obstacles, such as unforeseen outcomes, methodological issues, or difficulties in securing financial support. Faculty who are motivated exhibit more resilience when confronted with failures, as they approach barriers with a positive mindset and derive valuable lessons from such experiences instead of becoming disheartened. Academics who are motivated often possess a high level of concentration and adeptly manage their time. This allows them to effectively allocate their time between teaching, administrative duties, and research. Motivation is crucial for maintaining equilibrium and ensuring that research efforts get the necessary focus. Research productivity is often assessed using measures that include both the number and quality of publications. Academics who are driven are more inclined to submit their research to conferences and journals, enhancing the probability of disseminating their work and making a valuable contribution to the academic community. Determined academics actively seek chances to cooperate and establish connections with other scholars. Collaboration enhances the quality and influence of research initiatives while granting access to supplementary resources and skills. In addition, motivated academics acknowledge the significance of ongoing professional growth in their field of study. They participate in conferences, workshops, and seminars to stay updated on the newest advancements in their profession and enhance their research abilities. Academics who are motivated tend to be more successful in their roles as mentors and supervisors. They serve as a source of inspiration and guidance for students and early-career researchers, while also cultivating a culture of research excellence within their academic community. Academics who are driven are more inclined to actively participate in the academic community by doing research. This includes activities such as membership on editorial boards, involvement in peer review procedures, and active participation in scholarly endeavours that contribute to the advancement of the wider academic community.

In summary, research behaviour can enhance academics' research productivity by offering guidance, preventing mistakes, broadening methodological expertise, granting access to resources, facilitating networking, providing constructive feedback, promoting interdisciplinary collaboration, stimulating creativity, fostering a supportive research community, and contributing to personal and professional development. The collaborative method improves the quality and influence of research results. In addition, academics' motivation greatly affects their research productivity as it influences their internal motivation, consistent effort, originality, ability to bounce back from setbacks, concentration, time management, publication output, collaboration, professional growth, mentorship, and contribution to the academic community. An enthusiastic academic not only generates great research but also enhances the general research environment within their academic institution.

CONCLUSION

The objective of this study is to examine the impact of research behavior and motivation towards the research productivity of academics affiliated with universities in Malaysia. The study's results indicate that the research behavior shown by academics at universities significantly impacts their research productivity as in Table 13. The results of this study are consistent with previous research that has shown similar consequences, as evidenced by the works of Goodwin and Sauer (1995), Mokhtar and Noordin (2019), and Henry et al. (2020). The findings of this study indicate that in order to enhance their research proficiency and therefore increase their research productivity, academics should engage in collaborative efforts with researchers affiliated with other universities and higher education institutions in Malaysia.

The study's results also indicate that the motivation levels of academics in Malaysia marginally significantly influence their research productivity in institutional settings. The conclusions drawn from this investigation align with the results obtained in previous studies conducted by Blackburn, Bieber, Lawrence, and Trautvetter (1991), Bentley and Kyvik (2002), and Smeby and Try (2005). One plausible reason for the outcomes of this research is the notable presence of respondents under the age of 30, as shown by the majority of participants. Based on this observation, it is probable that a significant proportion of these individuals are novice researchers who have just begun their journey of acquiring knowledge and engaging in research activities. Consequently, the research productivity of these persons is unaffected by individual conditions.

Table 13. Summary of Hypotheses

Factors	β	Sig.	Hypothesis
Motivational factor	0.147	0.076	Accepted
Research behaviour	0.484	0.0001	Accepted

This study is not without limitations. The survey has a sample size of 192 participants. The current sample size is within the recommended range proposed by Krejcie and Morgan (1970). However, doing a similar study with a larger sample size might potentially improve the generalizability of the findings. Furthermore, the questionnaire used in this study was developed based on an extensive review of prior research conducted by the researchers. There exists potential for further refinement of the established statements pertaining to each variable, with the aim of augmenting their validity and reliability.

In summary, this study provides a valuable contribution to the understanding of research productivity among academics, which educational leaders at Malaysian institutions may use for their benefit. The study's findings are expected to provide valuable insights for universities in devising ways to enhance the research productivity of their academics and in establishing mechanisms to support and foster their research endeavors. These projected findings are expected to aid institutions in choosing strategies to help their academics in enhancing research productivity. Furthermore, the outcomes of this investigation would yield empirical substantiation regarding the sequential connections among job satisfaction attitudes, commitment to university research objectives, academic motivation to engage in research, and research productivity of academics, subsequently impacting their research productivity. In essence, the outcomes of this investigation would provide insights into strategies that scholars might use to enhance their research productivity.

REFERENCES

Basiru, A. (2018). Level of research productivity of academic staff in private universities in South-West Nigeria. *International Journal of Current Research*, *10*(8), 73124-73130.

Bentley, P. J., & Kyvik, S. (2012). Individual differences in faculty research time allocations across 13 countries. *Research in Higher Education*, *54*, 329-348.

Bexley, E., James, R., & Arkoudis, S. (2011). The Australian academic profession in transition. Retrieved from https://melbourne-cshe.unimelb.edu.au/__data/assets/pdf_file/0005/2317226/The_Academic_Profession_in_Transition_Sept2011-1.pdf

Blackburn, R. T., Bieber, J. P., Lawrence, J. H., & Trautvetter, L. (1991). Faculty at work: Focus on research, scholarship, and service. *Research in Higher Education*, *32*, 385-413.

Brew, A. (2006). *Research and teaching: Beyond the divide*. New York, NY: Palgrave Macmillan.

Chen, Y., Gupta, A., & Hoshower, L. (2006). Factors that motivate business faculty to conduct research: An expectancy theory analysis. *Journal of Education for Business*, *81*, 179-189.

Cummings, W. K., & Shin, J. C. (2014). *Teaching and research in contemporary higher education: Systems, activities, and rewards* (pp. 1-12). London, UK: Springer.

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). New York, NY: Sage Publications.

George, D., & Mallery, P. (2010). *SPSS for Windows step by step: A simple guide and reference* (10th Ed.). Boston, MA: Pearson.

Goodwin, T. H., & Sauer, R. D. (1995). Life cycle productivity in academic research: Evidence from cumulative publication histories of academic economists. *Southern Economic Journal, 61*, 728-743.

Henry, C., Ghani, N. A. M., Hamid, U. M. A., & Bakar, A. N. (2020). Factors contributing towards research productivity in higher education. *International Journal of Evaluation and Research in Education*, *9*(1), 203-211.

Hu, Q., & Gill, T. G. (2000). Is faculty research productivity: Influential factors and implications. *Information Resources Management Journal*, *13*(2), 15-25.

Hunter, D. E., & Kuh, G. D. (1987). The "writing wing": Characteristics of prolific contributors to the higher education literature. *Journal of Higher Education, 58*, 443-462.

James, R., Krause, K., & Jennings, C. (2010). *The first year experience in Australian universities: Findings from 1994 to 2009*. Retrieved from https://research-repository.griffith.edu.au/bitstream/handle/10072/134870/KrausePUB27.pdf?sequence=1

Jensen, J. J. (1988). Research and teaching in the universities of Denmark: Does such an interplay really exist?. *Higher Education, 17*, 17-26.

Kaya, N., & Weber, M. J. (2003). Faculty research productivity: Gender and discipline differences. *Journal of Family and Consumer Sciences*, *95*(4), 46-54.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, *30*(3), 607-610.

Maharjan, M. P., Stoermer, S., & Froese, F. J. (2022). Research productivity of self-initiated expatriate academics: Influences of job demands, resources and cross-cultural adjustment. *European Management Review*, *19*(2), 285-298.

Malhotra, N., Hall, J., Shaw, M., & Oppenheim, P. (2004). Essentials of marketing research. *Australasian Marketing Journal*, *12*(1), 71-73.

Mokhtar, M. A., & Noordin, N. (2019). An exploratory study of industry 4.0 in Malaysia: A case of higher education institution in Malaysia. *Indonesian Journal of Electrical Engineering and Computer Science, 16*(2), 978-987.

Nguyen, Q. H. (2015). *Factors influencing the research productivity of academics at the research-oriented university in Vietnam* (Doctoral dissertation, Griffith University, QueensIand, AustraIia). Retrieved from https://research-repository.griffith.edu.au/bitstream/handle/10072/366248/Nguyen_2015_02Thesis.pdf?sequence=1

Ramli, N., Zainol, Z. A., Aziz, J. A., Ali, H. M., Hassim, J., Hussein, W. M. H. W., . . . Yaakob, N. I. (2013). The concept of research university: The implementation in the context of Malaysian university system. *Asian Social Science*, *9*(5), 307.

Raston, C. (1998). Enhancing research productivity by using peer support. In *Developing as researchers* (pp. 73-76). Brisbane, Australia: Griffith University.

Ryazanova, O., & Jaskiene, J. (2022). Managing individual research productivity in academic organisations: A review of the evidence and a path forward. *Research Policy*, *51*(2), 104448.

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. New York, NY: John Wiley & Sons.

Smeby, J. C., & Try, S. (2005). Departmental contexts and faculty research activity in Norway. *Research in Higher Education, 46*, 593-619.

Tien, F. F., & Blackburn, R. T. (1996). Faculty rank system, research motivation, and faculty research productivity: Measure refinement and theory testing. *Journal of Higher Education*, *67*, 2-22.

Uwizeye, D., Karimi, F., Thiong'o, C., Syonguvi, J., Ochieng, V., Kiroro, F., . . . Wao, H. (2021). Factors associated with research productivity in higher education institutions in Africa: A systematic review. *AAS open research*, *4*, 26.

Webber, K. L. (2011). The role of institutional research in a high profile study of undergraduate research. *Research in Higher Education*, *53*, 695-716.