

## Research Article

# Effect of Organisational Factors on Intrapreneurial Behaviour of Public University Academicians in Malaysia

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Academics in Malaysia have been working hard in recent years to move towards a more innovative and intrapreneurial culture with the support of the government. The aim of this study is to particularly look at the organisational factors that influence their intrapreneurial behaviour, as it is thought that organisational factors may have some effects on their intrapreneurial behaviour. It is also argued that a good environment and support from an academic institution will not be enough if an academician does not have intrapreneurial attributes. Alternatively, an academician with adequate intrapreneurial attitude may be demotivated to innovate in their respective research and teaching activities if his/her institution does not provide adequate support. An online survey questionnaire was circulated to 4 universities in the southern region of Malaysia, from which 250 respondents took part in the survey. It was found that all four organizational factors considered in this study have a significant effect on intrapreneurial behaviour. The mediating role of gender was also sought. It was found that the recognition of intrapreneurial activity does not show a significant effect on the intrapreneurial behaviour of academicians in the presence of gender. However, the other three variables (managerial support, flexible organisational structure, and favourable organisational culture) show a significant effect on intrapreneurial behaviour while gender acts as a mediating variable.

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## 1. Introduction

The term 'intrapreneurship' refers to the behaviours of employees that enable them to be pro-active, risk-takers, and innovators within the organisational boundaries (Bakar, Mahmood & Lucky, 2015). However, in academia, it refers to the tendency of an academician to bring innovation and embrace technology in teaching and research, as well as in-class and outside-class activities and sharing information with students and colleagues (Bubenik, 2019). According to academic literature, employee engagement increases when there is an opportunity to demonstrate intrapreneurial behaviour and innovation. When organisations provide an environment conducive to intrapreneurial behaviour, it enhances the organisational adaptability of its members (Thomas & Bolaji, 2016).

## 2. Background of the Study

Price (2016) confirmed that the academic world is now embracing the concept of the 'intrapreneur teacher'. An intrapreneur teacher must have three key attributes, such as being a role model for respective students, a shaper of the world, and a facilitator of innovation who transfers skills required for the industry into students. A study was conducted by Yusof, Siddiq, and Nor (2014) over 8 academicians at four Malaysian research universities and found that intrapreneurship in HEIs involves not only knowledge transfer but also problem-solving and innovation through research and publications. Norhasimah and Ismail (2012) also found a significant positive relationship of the intrapreneurial attitude of academicians in twenty public universities with their job performance. Nordin (2020) affirmed that a paradigm shift has been noticed in academia where academicians have focused more on using webinars, virtual meeting apps, YouTube tutorial recording and telecasting, and even using social platforms such as WhatsApp and Telegram.

### 2.1. Problem Statement

In Malaysia, though some empirical research has been conducted concerning the intrapreneurial behaviour of academicians from higher learning institutions, less attention has been paid to examining the effect of organisational factors on the intrapreneurial behaviour of academicians. Norhasimah and Ismail (2012) examined the relationship of the intrapreneurial orientation of public university academicians in Malaysia with their job satisfaction as well as performance. Ismail et al. (2012) exclusively focused on examining the effect of various individual factors on the job satisfaction and performance of public university academicians in Malaysia. However, the effect of organisational behaviour has not been taken into account. Voo et al. (2019) conducted a study on similar interests, concentrating on academicians at Universiti Teknologi Malaysia (UTM). These researches do not provide adequate information on the effect of organisational factors on the intrapreneurial behaviour of academicians in Malaysia. Moreover, the role of gender in the relationship between organisational factors and the intrapreneurial behaviour of academicians has also received limited attention in empirical research. Therefore, this study attempts to fulfill the research gap by taking account of the academicians at four public universities in the Southern region of Malaysia, as these public universities have not received less attention in this regard.

### 2.2. Research Objectives

This research mainly aims to assess the effect of selected organisational factors on the intrapreneurial behaviour demonstrated by academicians of public universities in the Southern Region of Malaysia. The research also attempts to achieve the following particular objectives:

1. To identify the organisational factors that affect the intrapreneurial behaviour of public university academicians.
2. To examine the significance of the effect of the selected organisational factors on intrapreneurial behaviour.
3. To find out the critical factor among the selected factors having more effect on intrapreneurial behaviour.
4. To propose a model of the determinants of intrapreneurial behaviour among academicians in public universities.

5. To assess the moderating role of gender on the effect of organisational factors on academicians' intrapreneurial behaviour.

### 3. Literature Review

In this section, recent empirical research has been reviewed in the context of the variables selected in this study. Literature related to the intrapreneurial behaviour of academicians, the four selected determinants under the organisational factor, gender as a moderating variable, and underpinning theories has been reviewed with relevant definitions and contextual backgrounds.

#### 3.1. *Intrapreneurial Behaviour of Academicians*

Taştan and Güçel (2014) provided a definition of intrapreneurial behaviour whereby they stated that intrapreneurial behaviour is a kind of entrepreneurial activity of employees within an organisation, for instance, incorporating best practices and innovation at work, culture, or system of the organisation. Cadar & Badulescu (2015) defined that intrapreneurial behaviour may denote behaviours such as risk-taking, proactiveness, and innovativeness which may even incur remuneration in return for having such attributes. Some may assume both intrapreneurship and corporate entrepreneurship as interchangeable terms. However, Bosma, Stam, and Wennekers (2012) pointed out a slight difference between intrapreneurship and corporate entrepreneurship. Intrapreneurship refers to a bottom-up approach concentrating more on initiatives of an individual employee or member of an organisation, whereas corporate entrepreneurship involves a top-down approach with more focus on initiatives from a managerial viewpoint. They have also highlighted a few examples of intrapreneurial behaviour or actions of employees, ranging from out-of-the-box thinking, opportunity grabbing, novel idea generation to a risk-taking attitude for bringing a better solution.

#### 3.2. *Effect of Organisational Factors on Intrapreneurial Behaviour*

There are several organisational factors that may have an impact on intrapreneurial behaviour. However, in this study, management support, favorable organizational culture, flexible organisational structure, and recognition of intrapreneurial activity are considered as the organisational factors, and relevant literatures have been reviewed in the following sections.

##### 3.2.1. *Management Support and Intrapreneurial Behaviour*

Mir, Sair, and Malik (2014) defined management support and stated that it refers to the degree of all kinds of support offered by management to the employees for the implementation and evaluation of an organisation-wide resource planning system. Lin (2010) highlighted that when management of an organisation acts in its role of understanding and implementing an enterprise-wide resource planning system. Jitpaiboon and Kalaian (2005) referred to management support as the understanding and involvement of management in various functional activities of the organization that benefit the growth of employees and the organisation itself. Alpkhan et al. (2010) surveyed 184 manufacturing firms in Northern Turkey, aiming to assess the effect of management support on innovative performance. They found that

management support, along with human capital and risk-taking tolerance, has a significant effect on innovative performance in Turkish manufacturing firms. Aparicio (2017) conducted a study in Norway, which is more relevant to this study as the researcher attempted to examine the extent of the effect of management support on intrapreneurial behaviour. It was found that not only management support, but also the resource availability and informal culture of an organisation, have a significant effect on intrapreneurial behaviour. Another study by Yariv and Galit (2017) also found a significant effect of management support on intrapreneurship in 21 Israeli organisations.

### *3.2.2. Favourable Organisational Culture and Intrapreneurial Behaviour*

Kien (2014) defined the term 'organisational culture' as a set of knowledge that the management and employees of an organisation share and transfer to new staff and executive members in order to maintain the practice of the culture. Beyond providing a definition, some researchers have investigated the effect of organisational culture on intrapreneurship. A study by Eze et al. (2018) found a significant effect of organisational culture on intrapreneurial growth in two publicly listed companies in the manufacturing sector of Nigeria. Gürsoy and Güven (2016) explored the effect of an innovative culture on intrapreneurship at construction firms and audit firms in Ankara, Turkey, and found a positive and significant causal-effect relationship between the two variables. An innovative culture can be denoted as a subculture of organisational culture that is more focused on nurturing and developing innovation and creativity within the organisational boundary. Another study in Indian organisations by Kapil and Saxena (2019) revealed that organisational culture plays a crucial role in shaping and promoting intrapreneurship among the members of an organisation, as employees of an organisation with a more supportive culture were found to be more innovative in bringing new ideas and solutions.

### *3.2.3. Flexible Organisational Structure and Intrapreneurial Behaviour*

As described by Sayyadi (2019), a flexible organizational structure is often characterized by an 'organic' or 'decentralized' structure where even lower-level staff are allowed to contribute to decision-making and the natural growth of themselves beyond the rules and policies of the organisation. In contrast to a tall and stiff organizational structure, Pawlowski (2016) argued that a flexible organizational structure has a flatter shape, reduced specialization or departmentalization, a decentralized decision-making mechanism, lower standardization, and lower formalization. Delić, Alibegović, and Mešanović (2016) examined the effect of a process organisational structure on intrapreneurial development in 28 manufacturing entities and 26 service providers in Bosnia and Herzegovina. They revealed a significant effect of the process organisational structure on the development of intrapreneurship in these firms. They further concluded that the firms with more process organisational structure also possess a flattened or flexible structure, decentralisation of power and responsibilities, higher communication among organisational members, and reduced bureaucracy. Shoghi and Safieepoor (2013) conducted an empirical study involving 355 employees from 12 companies in Iran and revealed that the organisational structure has a positive and significant effect on the orientation of intrapreneurship. However, the authors suggested that in order to provide the employees with an intrapreneurship-friendly environment and structure, there should be minimal and flexible rules and regulations.

### *3.2.4. Recognition of Intrapreneurial Activity and Intrapreneurial Behaviour*

Ferrier (2014) asserted that the rewards for intrapreneurs are often different than those for high-performance achievers. Usually, rewards for intrapreneurs are provided in terms of intrinsic promotion along the career ladder, inclusion in meetings and the decision-making process, as well as inclusion in the list of managers under succession planning. Kolev, Goldstein, and Grossmann (2015) stressed that one of the five insights of intrapreneurship is not to create an employee with an intrapreneurial mindset and skills, but to recognize the employee. It is due to the fact that intrapreneurial employees usually exist in a company, but may not demonstrate intrapreneurial activity due to the fear of being left alone or remaining unrecognised. Govindarajan and Desai (2013) studied 5,000 employees in an organisation, among whom 250 were found to be natural innovators and out of them, further 25 were found to be great intrapreneurs. The study acknowledged that intrapreneurs need to be recognised by the organisation before they leave due to negligence and a lack of opportunity. If the intrapreneurs are recognised and retained, they can apply their ideas in and for their existing organisations. Madu (2011) conducted a study involving 209 full-time academic staff members working at the Postgraduate Diploma Programme at the University of Witwatersrand in South Africa. The study findings revealed that seven factors were found to have a significant effect on the innovation and proactiveness of which praise and recognition by organisations ranked as the most significant factor. The other significant factors were flexible working hours, bonuses for the achievement of milestone targets, enhanced promotional opportunities, job enrichment, compensation based on motivation, and career growth opportunities.

### *3.3. Gender as A Moderating Variable*

In this study, gender is considered as the moderating variable between organisational factors and intrapreneurial behaviour of the academicians. Riggs (2019) surveyed over 110 faculty members of Historically Black Colleges and Universities (HBCUs) in the US and found that differences in gender and race have a significant effect on the attitude of academicians of Historically Black Colleges and Universities (HBCUs) towards adopting online education and computers. While male faculty members reported a higher level of positive attitude towards online learning, female faculty members reported a comparatively negative attitude due to a lack of understanding of online learning. Adachi and Hisada (2017) found that intrapreneurial orientation is generally stronger in men than in women. Women tend to remain low profile and less intrapreneurial. However, when a small firm or a firm with a flatter organisational structure employs women, they tend to demonstrate some intrapreneurial orientation due to the less dominance of men and a less competitive working environment.

### *3.4. Hypotheses Development*

Empirical research sought to establish the effect of management support on intrapreneurial behaviour. Lizote, Lana, and Verdinelli (2014) showed that there is an effect of management support on intrapreneurial behaviour among academicians in Brazilian higher learning institutions. Mathu (2016) revealed that managerial support has the highest effect on the intrapreneurial activities of the library staff in Kenyan public and private universities. Mbaka (2017)

acknowledged that management support has a significant effect on intrapreneurial orientation in Kenya as well. Therefore, the first hypothesis is developed as follows:

- **H1: Management support significantly influences the intrapreneurial behaviour of academicians in public universities.**

Existing literature also established the effect of organisational culture on intrapreneurial behaviour. Gupta and Srivastava (2013) revealed that organisational culture has a positive and significant effect on intrapreneurship among software industry employees in India. Aparicio (2017) found that culture as a function of informal structures has a significant effect on intrapreneurial behaviour. Eze et al. (2018) established that organisational culture has a positive and significant effect on the growth of intrapreneurship in the manufacturing companies in Nigeria. Therefore, the second hypothesis of the study is developed as follows:

- **H2: Organisational culture significantly influences the intrapreneurial behaviour of academicians in public universities.**

Delić, Alibegović, and Mešanović (2016) revealed that organisational structure has a significant effect on the development of intrapreneurship in Bosnian and Herzegovinian large companies. Shoghi and Safieepoor (2013) also revealed a positive and significant effect of organisational structure on the orientation of intrapreneurship among Iranian employees. Therefore, the third hypothesis of the study is developed as follows:

- **H3: Flexible organisational structure significantly influences the intrapreneurial behaviour of academicians in public universities.**

Yadolahi, et al. (2014) acknowledged that a recognition system for academic innovation has a significant effect on academic intrapreneurship in the context of Iran. Taştana and Güçel (2014) showed that organisational recognition has a positive and significant effect on the intrapreneurial behaviour of Turkish employees. Madu (2011) revealed that praise and recognition offered by organisations have a significant effect on innovation and proactiveness among South African academicians. From the aforementioned summary of earlier research findings, the following fourth hypothesis can be developed:

- **H4: Recognition of intrapreneurial activity significantly influences the intrapreneurial behaviour of academicians in public universities.**

Bani-Mustafa et al. (2021) found that gender has a moderating effect on the relationship between the intrapreneurial orientation of faculties and the entrepreneurial orientation of higher educational institutions. Riggs (2019) found that gender has a significant effect on academicians' attitude towards online learning and innovativeness. Adachi and Hisada (2017) reported a higher intrapreneurial orientation of men than women in the workplace. The ninth and tenth hypotheses from the above review can be formulated as follows:

- **H5: Gender has a moderating effect on the relationship between organisational factors and the intrapreneurial behaviour of academicians in public universities.**

### *3.5 Underpinning Theories*

Two theories, namely Resource-based theory and McGregor's theory of X and Y, are found relevant to this study. Both theories are briefly reviewed with a few empirical researches that adopted the theories in the below sub-sections.

#### *3.5.1. Resource-Based Theory*

Turró and Urbano (2012) reinstated that the resource-based theory suggests the availability of resources and capabilities within an organisation that can be freely accessed by the members of the organisation. Urbano, Alvarez & Turró (2013) adopted the resource-based theory and affirmed that the key factors for intrapreneurial development are the resources and capabilities of an organisation, across 39 countries selected in the study. Having adopted the theory of the resource-based view, another study by Urbano, López-Torres & Turró (2013) revealed that both resources and capabilities significantly affect the activities of intrapreneurs. The resources and capabilities include the size of the organisation, intrapreneurship training provided, as well as the competencies and previous experiences of the intrapreneurial employees. The resource-based theory is relevant to the purpose of this study, since it emphasises the organisational resources (organisational structure and culture) which are possible determinants selected in this study.

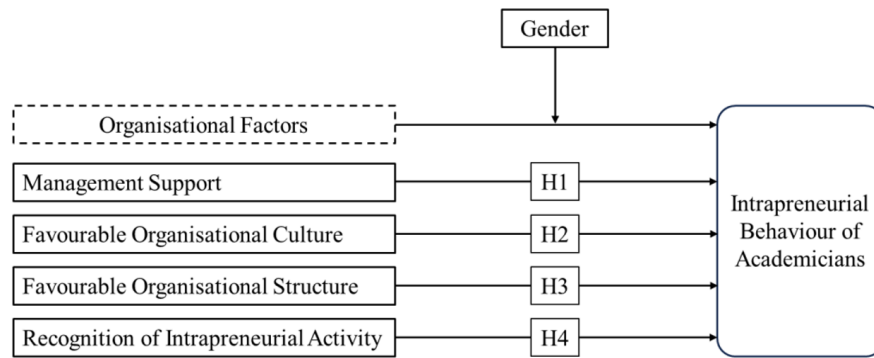
#### *3.5.2. McGregor's Theory of X and Y*

The theory of X and Y assumes that there are two types of people in an organisation who exhibit either theory X or theory Y. The employees under theory X are assumed to be reactive, reluctant to perform beyond responsibilities, risk-averse, and motivated only by external provisions. On the other hand, employees under theory Y are assumed to be proactive, willing to work beyond responsibilities, risk-takers, and self-motivated (Omari, 2018). Accordingly, managers under theory X assume that the employees are always required to be monitored, supervised, and kept under constant controls such as warning and punishment for negligence and indiscipline. However, managers under theory Y perceive that the employees do not need to be constantly supervised or monitored. They have the quality and skills to cover up their idle time and are able to come out with innovative ideas, if given the opportunity, which is even though impossible in the case of theory X employees (Gürbüz, Şahin & Köksal, 2014). Therefore, whereas managers

would like to be rigid and traditional under theory X, they again become flexible and rational under theory Y. The theory of X and Y is relevant to the study as it assumes management to strive to provide support, training, motivation, and a favourable environment to the public university academicians, assuming them to be X-type employees.

### *3.6. Conceptual Framework*

The conceptual framework of this study is illustrated in Figure 1. Referring to the figure, there are a total of four factors, whereas hypotheses 1 to 4 (H1, H2, H3, and H4) fall under the category of organisational factors. Besides these, gender is also included as a moderating variable. The intrapreneurial behaviour of academicians remains as the dependent variable, illustrated in Figure 1.



**Figure 1.** Conceptual framework of the study

## 4. Research Methodology

### 4.1. Research Design

The research design of this study depicts that the philosophy of the research adopted is positivism. Moreover, the approach of the research is deductive. The methodology adopted in this research is quantitative. The time-series adopted is cross-sectional. Moreover, the study is based on primary data and supported by secondary data. The instrument of this study is a structured questionnaire. The data collection method is an (online) survey. The sampling method is simple random probability. The data analysis of this study would include reliability, descriptive, correlation, and regression analysis. The above data can be illustrated in an onion model suggested by Saunders, Lewis, and Thornhill (2019). The onion model in Figure 2 shows six stages of writing this thesis in different layers of an onion.



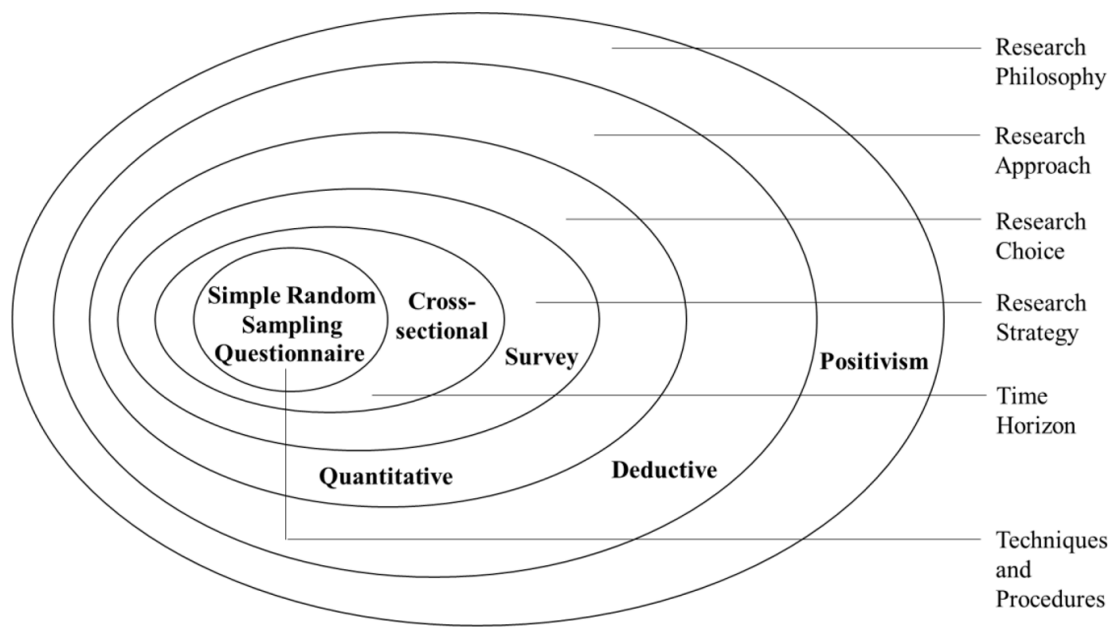


Figure 2. Onion model for the study

#### 4.2. Population and Sampling

The population of the study is determined by the total number of academicians at the public universities in the Southern region of Malaysia. The four public universities employ a total of 4,186 academicians at the eight campuses located in the Southern region. As suggested and adopted by Crilly et al. (2017) and Saadatian et al. (2012), the Raosoft calculator, available online, was used to calculate the sample size of this study. Considering a population size of 4,186, a margin of error of 5%, a response distribution of 20%, and a confidence level of 95%, the sample size is calculated to be 233 using the online Raosoft calculator. A total of 550 questionnaires were distributed via email. 250 completed questionnaires were returned, with a response rate of 45.45 percent. No missing information or repetitive responses were found, and no responses were omitted. Therefore, after the collection and evaluation of primary data, 250 responses were considered for data analysis. In the case of this study, the names and email lists of all the academicians of the selected universities were obtained from the respective university websites. Each row in the list was allotted a number from ascending to descending order. The numbers were then randomly selected using a lottery. Then emails were sent to those randomly chosen academicians with the Google Form link. Thus, simple random sampling has been used as the sampling method of this study as, in this case, a randomly chosen sample best represents the population.

### 5. Results and Discussion

Both descriptive analysis and model assessment have been performed to present respondents' demographic information as well as to analyse the validity of the constructs used in this study, respectively.

### *5.1. Descriptive analysis*

Descriptive analysis was performed using the SPSS tool and presented in the form of a frequency table indicating the percentage of each response concerning the demographics (gender, age, ethnicity, employment status, monthly income, profession, and teaching experience) of the respondents.

The descriptive data analysis in Table 1 reveals that female respondents were higher in percentage (56.8 percent) compared to 43.2 percent of male respondents.

The responses also reveal that respondents aged between 30 and 45 years were the majority at 63.6 percent. The next majority of respondents was 29.2 percent. Respondents aged below 30 years were the lowest at 7.2 percent.

74.8 percent of the respondents were Malay, who were the majority. Non-Malaysian respondents from different countries were the second highest at 13.2 percent. Chinese respondents and Tamil respondents were 4.4 percent and 7.6 percent, respectively.

91.6 percent of the respondents were in full-time occupations, while only 8.4 percent of respondents reported to have been working part-time as academicians (i.e., Research Assistants and PhD students).

Majority of the respondents (49.6 percent) reported having monthly incomes above RM 8,000. It is followed by 13.2 percent of respondents with monthly incomes between RM 5,001 and below RM 8,000, 10.8 percent with monthly incomes below RM 3,000, and another 8.4 percent with monthly incomes between RM 3,001 and RM 5,000.

Respondents in the profession of Lecturer were the majority with 36.4 percent, followed by Senior Lecturer at 32.4 percent. Respondents in other professions were below 15 percent (Research Assistant 14.4 percent, Associate Professor 10.8 percent, Professor 3.6 percent, and Assistant Professor 2.4 percent).

Majority of the respondents have over 8 years of experience as academicians. Respondents with teaching experience of below 3 years were 19.6 percent, and between 3 to 8 years were 14 percent.

No.	Demographic	Criteria	Frequency	Valid Percent	Cumulative Percent
1.	Gender	Female	142	56.8	56.8
		Male	108	43.2	100.0
2.	Age	30 - 45 Years	159	63.6	63.6
		Above 45 Years	73	29.2	92.8
		Below 30 Years	18	7.2	100.0
3.	Ethnicity	Chinese	11	4.4	4.4
		Malay	187	74.8	79.2
		Non-Malaysian	33	13.2	92.4
		Tamil	19	7.6	100.0
4.	Employment Status	Full-time	229	91.6	91.6
		Part-time	21	8.4	100.0
5.	Monthly Income	Above RM 8,000	124	49.6	49.6
		Below RM 3,000	27	10.8	60.4
		RM 3,001 - RM 5,000	21	8.4	68.8
		RM 5,001 - RM 8,000	78	31.2	100.0
6.	Profession	Assistant Professor	6	2.4	2.4
		Associate Professor	27	10.8	13.2
		Lecturer	91	36.4	49.6
		Professor	9	3.6	53.2
		Research Assistant	36	14.4	67.6
		Senior Lecturer	81	32.4	100.0
7.	Teaching Experience	3 - 8 Years	35	14.0	14.0
		Above 8 Years	166	66.4	80.4
		Below 3 Years	49	19.6	100.0

**Table 1.** Demographics of the Respondents

## *5.2. Model Assessment using SmartPLS (SEM)*

Model assessment was performed using SmartPLS software (version 4) in two stages. The first stage is known as the measurement (outer) model, whereas the second stage is known as the structural (inner) model.

### *5.2.1. Assessment of the Measurement Model (Outer Model)*

The measurement model examines indicator (individual item) reliability, convergent validity, and discriminant validity of exogenous latent constructs (Hair et al., 2018).

#### *5.2.1.1. Convergent Validity*

Convergent validity refers to the extent to which similar constructs converge towards or correlate with one another to validate different measures (Wang, French & Clay, 2015). In this context, the outer loadings of each indicator under each construct have been examined using SmartPLS 4. The standard and satisfactory value of the loading is suggested to be between 0.40 and 0.70, whereas a value below 0.40 is considered unacceptable and to be eliminated from the model in SmartPLS. Contrarily, the loading with values below 0.7 may not be deleted if deleting it has no effect on the values of composite reliability and average variance extracted.

In the analysis of this study, several items under different constructs were found to have values below 0.40 (FOS1 = 0.103, RIA6 = 0.232). Therefore, these items under their respective constructs were eliminated to increase convergent validity. As these two items were deleted, the respective CA and CR values were improved. There were also values in between 0.4 and 0.7 (MS2 = 0.571, MS4 = 0.605, MS5 = 0.482, and MS6 = 0.661). Some of these values were eliminated in the step 2 described below.

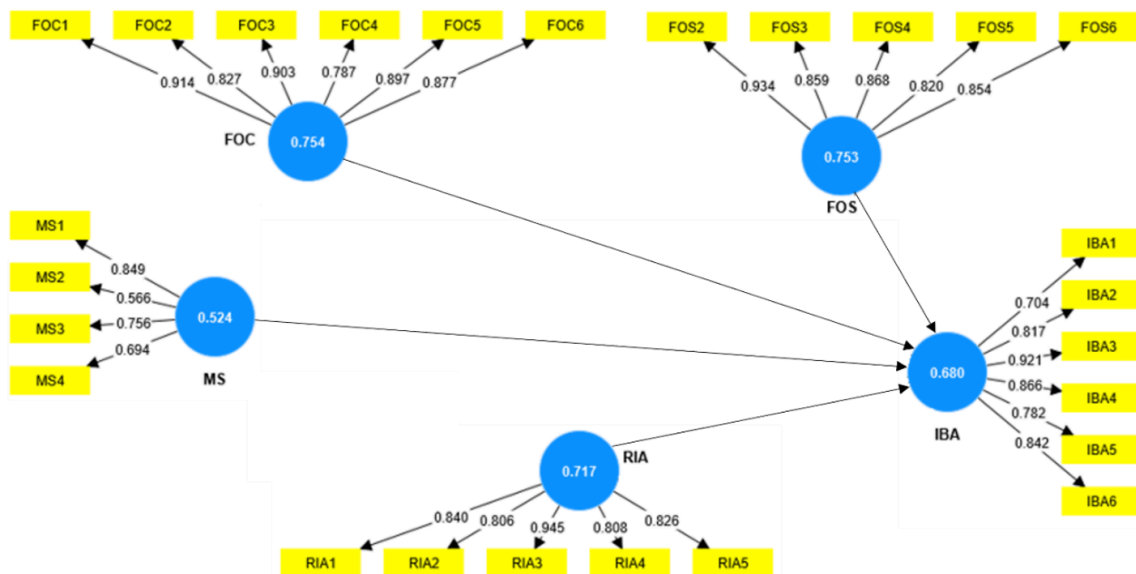
Constructs	Items	Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Intrapreneurial Behaviour of Academicians	IBA1	0.704	0.905	0.915	0.680
	IBA2	0.817			
	IBA3	0.921			
	IBA4	0.866			
	IBA5	0.782			
	IBA6	0.842			
Management Support	MS1	0.849	0.722	0.735	0.524
	MS2	0.566			
	MS3	0.756			
	MS4	0.694			
Favourable Organisational Culture	FOC1	0.914	0.934	0.937	0.754
	FOC2	0.827			
	FOC3	0.903			
	FOC4	0.787			
	FOC5	0.897			
	FOC6	0.877			
Flexible Organisational Structure	FOS2	0.934	0.918	0.921	0.753
	FOS3	0.859			
	FOS4	0.868			
	FOS5	0.820			
	FOS6	0.854			
Recognition of Intrapreneurial Activity	RIA1	0.840	0.900	0.911	0.717
	RIA2	0.806			
	RIA3	0.945			
	RIA4	0.808			
	RIA5	0.826			

**Table 2.** Factor Loadings of the Indicators

In step 2, the Cronbach's alpha, composite reliability, and AVE values were tested. Traditionally, in order to determine the internal consistency of all the items and constructs, Cronbach's alpha was used. However, this has several shortcomings, to overcome which researchers suggested using composite reliability besides Cronbach's alpha to effectively measure convergent validity. Usually, both Cronbach's alpha (CA) and composite reliability (CR) between 0.70 and 0.90 are satisfactory. Below this range, a CA and CR value between 0.60 and 0.70 is also acceptable in descriptive research and exploratory research. However, a value of 0.95 is considered an invalid measure of a construct.

Besides these, an AVE value of over 0.50 indicates an acceptable measure of convergent validity. Primarily, it was noticed that though almost all Cronbach's alpha and composite reliability values of all the constructs reside within the required range, the AVE in relation to MS (Management Support) construct was below 0.5 (AVE = 0.419). Therefore, MS2 (Loading = 0.571), MS5 (Loading = 0.482), and MS6 (Loading = 0.661) were targeted to be eliminated. However, eliminating MS2 had no impact on the AVE value of the MS construct. However, when MS5 and MS6 were eliminated, the relevant AVE value was changed to 0.524 (See Table 2), which is above the required threshold.

After the elimination of the problematic items, 26 out of 30 items were retained, and the loadings of these items ranged from 0.704 to 0.945. Cronbach's alpha ranges between 0.722 and 0.934. Composite reliability ranges between 0.735 and 0.937. The average variance extracted (AVE) remains minimum at 0.524 and maximum at 0.753. All these values indicate that the five constructs used in the study are convergently reliable and valid in the presence of the 26 items.



**Figure 3.** Measurement model of the study

### 5.2.1.2. Discriminant Validity

In PLS-SEM, to evaluate the outer model, discriminant validity needs to be performed. Discriminant validity signifies the extent to which a latent construct is different from the other latent constructs through empirical standards (Hair et al., 2014; Duarte & Raposo, 2010).

For the evaluation of discriminant validity by Fornell and Larcker (1981), the square root of the AVE should be greater than the correlations with other latent constructs. Table 3 below shows that the square root of the AVE value is lower than the relations between the variables. Therefore, in accordance with the Fornell and Larcker criterion, the latent constructs have satisfied the discriminant validity.

	FOC	FOS	IBA	MS	RIA	AVP
FOC	0.869				0.847	0.754
FOS	0.794	0.868				0.753
IBA	0.652	0.767	0.825			0.680
MS	0.595	0.595	0.565	0.724		0.524
RIA	0.723	0.733	0.735	0.625		0.717

**Table 3.** Fornell and Larcker Criterion

Although the Fornell-Larcker method has been used frequently for over thirty years, Henseler, Ringle, and Sarstedt (2015) suggested that the Fornell-Larcker method has less sensitivity while investigating the discriminant validity of the latent constructs. Henseler, Ringle, and Sarstedt (2015) also added that alternative methods to test discriminant validity should replace the Fornell-Larcker method to minimize the problems. Therefore, the Heterotrait-Monotrait (HTMT) ratio has been applied to determine discriminant validity.

	FOC	FOS	IBA	MS	RIA
FOC				0.711	
FOS	0.073				
IBA	0.019	0.047			
MS	0.634	0.644	0.605		
RIA	0.778	0.799	0.806		

**Table 4.** Heterotrait and Monotrait (HTMT) Ratio

Several thresholds have been defined for the Heterotrait-Monotrait (HTMT), such as 0.85 by Clark and Watson (2016) and 0.90 by Henseler, Ringle, and Sarstedt (2015). However, Table 4 shows that all correlation values are less than the lowest predefined threshold of 0.85, reflecting an acceptable level of HTMT as a criterion to assess discriminant validity.

Finally, to evaluate discriminant validity, cross-loading is another underlying method (Hair et al., 2014). Table 5 below shows the loadings and cross-loadings of individual items and variables.



		FOC	FOS	IBA	MS	NA	PP	RIA	RTP	SE
<b>Intrapreneurial Behaviour of Academicians</b>	IBA1	0.535	0.552	0.704	0.319	0.547	0.613	0.510	0.372	0.558
	IBA2	0.691	0.696	0.817	0.375	0.574	0.714	0.529	0.411	0.681
	IBA3	0.911	0.931	0.921	0.550	0.373	0.936	0.708	0.539	0.946
	IBA4	0.827	0.859	0.866	0.595	0.380	0.863	0.582	0.573	0.924
	IBA5	0.905	0.867	0.782	0.529	0.365	0.837	0.612	0.466	0.768
	IBA6	0.787	0.820	0.842	0.387	0.359	0.829	0.671	0.443	0.827
<b>Managerial Support</b>	MS1	0.488	0.490	0.474	0.849	0.262	0.516	0.424	0.498	0.552
	MS2	0.183	0.187	0.136	0.566	0.066	0.169	0.300	0.256	0.228
	MS3	0.334	0.340	0.312	0.756	0.240	0.349	0.377	0.439	0.401
	MS4	0.538	0.533	0.516	0.694	0.154	0.543	0.603	0.218	0.511
<b>Favourable Organisational Culture</b>	FOC1	0.914	0.931	0.922	0.554	0.385	0.936	0.705	0.538	0.945
	FOC2	0.827	0.859	0.866	0.595	0.380	0.863	0.582	0.573	0.924
	FOC3	0.903	0.863	0.779	0.524	0.364	0.833	0.608	0.462	0.764
	FOC4	0.787	0.820	0.842	0.387	0.359	0.829	0.671	0.443	0.827
	FOC5	0.897	0.858	0.769	0.535	0.352	0.825	0.606	0.468	0.758
	FOC6	0.877	0.826	0.744	0.491	0.332	0.795	0.568	0.435	0.726
<b>Flexible Organisational Structure</b>	FOS2	0.915	0.934	0.924	0.558	0.385	0.939	0.709	0.541	0.948
	FOS3	0.827	0.859	0.866	0.595	0.380	0.863	0.582	0.573	0.924
	FOS4	0.904	0.868	0.782	0.533	0.364	0.839	0.615	0.468	0.770
	FOS5	0.787	0.820	0.842	0.387	0.359	0.829	0.671	0.443	0.827
	FOS6	0.884	0.854	0.765	0.506	0.369	0.815	0.594	0.454	0.745
<b>Recognition of Intrapreneurial Activity</b>	RIA1	0.723	0.705	0.666	0.650	0.273	0.684	0.840	0.393	0.664
	RIA2	0.618	0.594	0.568	0.575	0.294	0.571	0.806	0.278	0.534
	RIA3	0.681	0.705	0.720	0.553	0.289	0.728	0.945	0.356	0.722
	RIA4	0.500	0.529	0.540	0.382	0.169	0.551	0.808	0.252	0.541
	RIA5	0.512	0.545	0.594	0.465	0.223	0.591	0.826	0.271	0.592

Table 5. Cross-loading

Table 5 above displays that indicator variables are more highly loaded than other constructs. Thus, cross-loading ensures the discriminant validity (Hair et al., 2011).

### 5.2.2. Assessment of the Structural Model (Inner Model)

The structural model examines the path coefficient assessment, coefficient of determination, effect size of the coefficient of determination, predictive relevance, effect size of predictive relevance, and the assessment of the moderation effect of interactions between endogenous latent constructs and exogenous latent constructs (Hair et al., 2018).

In this study, the structural model comprises the intrapreneurial behaviour of academicians as the endogenous variable, while the exogenous variables are the organisational factors (managerial support, flexible organisational structure, favourable organisational culture, and recognition of intrapreneurial activity). Gender is the other exogenous variable which serves as the moderator. However, to achieve these objectives, the basic criteria used in assessing the structural model (inner model) in PLS-SEM were adopted. Figure 4 below displays the structural model.

The standard bootstrapping procedure was applied in this research to ascertain the significance of the path coefficients, with 5,000 bootstrap samples and 250 cases applied for the assessment of the significance of the path coefficients (Hair, Ringle & Sarstedt, 2011; Ringle, Sarstedt & Straub, 2012). To evaluate the quality of the inner model, the path coefficient, effect size, coefficient of determination, and cross-validated redundancy were applied as suggested by Hair, Ringle & Sarstedt (2011).

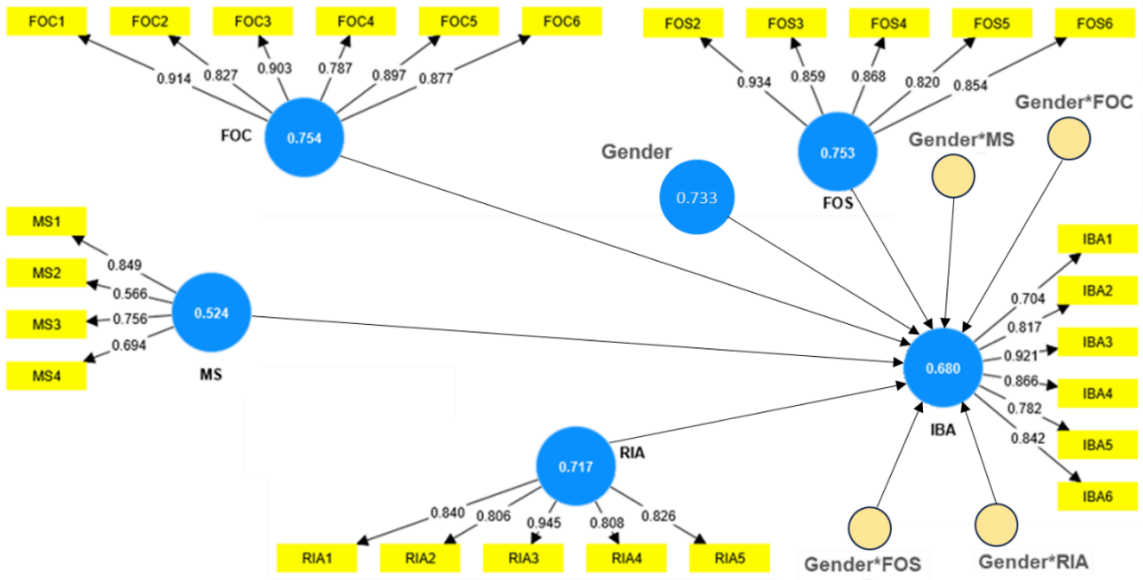


Figure 4. The structural model of the study

### 5.2.2.1. Path Coefficients Assessment

In order to understand the significant effects of the selected determinants, SmartPLS 4 opens an avenue for the users to produce the t-value, p-value, and standard error. The calculation of the p-value is done at a 95 percent confidence level due to its acceptability in the research of social sciences. The results show the relationships between exogenous and endogenous variables, and all of these relationships are statistically significant as could be seen from the structural model (see Table 6).

Hypothesis	Relationship	Beta Value	STDEV	T-value	p-value	Decision
H1	MS > IBA	0.391	0.034	11.381	0.000	Supported
H2	FOS > IBA	0.101	0.029	3.539	0.000	Supported
H3	FOC > IBA	0.089	0.027	3.077	0.002	Supported
H4	RIA > IBA	0.113	0.029	4.403	0.000	Supported

**Table 6.** The structural model assessment with model's direct paths relationship, t-value and p-value

### 5.2.2.2. Assessment of Moderating Hypotheses

In this study, the product-indicator approach is used, as suggested by Henseler and Fassott (2010), in Smart PLS to estimate the moderating effect of gender on the relationship between organisational factors and intrapreneurial behaviour of academicians (managerial support, flexible organisational structure, favourable organisational culture, and recognition of intrapreneurial activity) and the intrapreneurial behaviour of academicians. Table 7 shows the moderating effects of gender on the relationship between the organisational factors and intrapreneurial behaviour of academicians.

Hypothesis	Relationship	Beta Value	STDEV	T-value	p-value	Decision
H9	Gender*MS > IBA	0.196	0.033	5.838	0.000	Supported
	Gender*FOS > IBA	-0.069	0.023	3.037	0.000	Supported
	Gender*FOC > IBA	-0.032	0.024	1.334	0.002	Supported
	Gender*RIA > IBA	0.113	0.029	4.403	0.182	Not supported

**Table 7.** Hypothesis Test with Moderation

### 5.2.2.3. Assessment of Coefficient of Determination ( $R^2$ )

To understand the quality of the structural path model, a number of methods are applied, including  $R^2$  or the coefficient of determination, effect size, predictive relevance or  $Q^2$ , SRMR or standardized root mean residual (Hair et al., 2014).

$R^2$  explains how much the independent variable has on dependent variables. Academic researchers suggest observing the rule of thumb for identifying the effects; for example, 0.75 (substantial), 0.50 (moderate), and 0.25 (weak), respectively (Ringle et al., 2011), and 0.67 (substantial), 0.33 (moderate), or 0.19 (weak) (Henseler and Chin, 2010).

Latent Constructs	Variance Explained ( $R^2$ )
Intrapreneurial behaviour of academicians	0.662

**Table 8.** Results of  $R^2$  values

Table 8 above shows that the satisfaction construct has an  $R^2$  value of 0.662 (66.2 percent). Therefore, according to the threshold introduced by Henseler and Chin (2010), the  $R^2$  value of this study has substantial effects.

### 5.2.2.4. Assessment of Effect Size ( $f^2$ )

According to the suggestions of Cohen (1988),  $f^2$  values of 0.02, 0.15, and 0.35 represent the small, moderate, and strong effects of the construct, respectively. Aligned with Cohen (1988)'s suggestion, the effect size of managerial support ( $f^2 = 0.538$ ) on the intrapreneurial behaviour of academicians only has a stronger effect. The effect sizes of FOS, FOC, and RIA on intrapreneurial behaviour have a moderate effect.

Independent Variables	f-squared	Effect size
MS	0.538	Strong
FOS	0.200	Moderate
FOC	0.060	Moderate
RIA	0.061	Moderate

**Table 9.** Results of  $f^2$  values

### 5.2.2.5. Assessment of Predictive Relevance ( $Q^2$ )

A model's predictive quality can be assessed by the cross-validated redundancy measure, which is denoted as  $Q^2$  (Geisser, 1974). 16 represents the blindfolding procedure and the cross-validated redundancy ( $Q^2$ ) approach recommended by Hair et al. (2014).

	SSO	SSE	$Q^2(1 = SSE / SSO)$
IBA	1,935.000	1,086.980	0.438

**Table 10.** Construct cross-validated redundancy ( $Q^2$ ) test

Table 10 reveals that the cross-validation redundancy ( $Q^2$ ) of tourist satisfaction is 0.438, which is far above zero. It is thus concluded that the model has adequate predictive relevance.

### 5.3. Results and Discussion

As depicted in Table 6, hypothesis H1, which asserts a positive relationship between managerial support and intrapreneurial behaviour of academicians, was supported using PLS output with a significant relationship ( $\beta = 0.391$ ,  $t = 11.381$ ,  $p$  value = 0.000) found between these two variables. Hypothesis H2, which states a positive relationship between flexible organisational structure and intrapreneurial behaviour of academicians, is also supported with a positive beta ( $\beta$ ) value and a t-value ( $\beta = 0.101$ ,  $t = 3.539$ ,  $p = 0.000$ ). Hypothesis H3, which specifies the positive relationship between a favourable organisational structure and the intrapreneurial behaviour of academicians, is also supported with positive and significant results ( $\beta = 0.089$ ,  $t = 3.189$ ,  $p = 0.002$ ). Hypothesis H4, specifying a positive influence of the recognition of intrapreneurial activity on the intrapreneurial behaviour of academicians, is also supported ( $\beta = 0.113$ ,  $t = 4.403$ ,  $p = 0.000$ ). A moderating influence of gender on the relationship between managerial support and the intrapreneurial behaviour of academicians is found to be positively significant ( $\beta = 0.196$ ,  $t = 5.858$ ,  $p = 0.000$ ) as well. However, the influence of gender on the relationship between the flexible organisational structure and the intrapreneurial behaviour of academicians is found to be negatively significant ( $\beta = -0.069$ ,  $t = 3.037$ ,  $p = 0.002$ ). Likewise, the influence of gender on the relationship between a favourable organisational structure and the intrapreneurial behaviour of academicians is found to be negatively significant ( $\beta = -0.032$ ,  $t = 1.334$ ,  $p = 0.002$ ). However, the influence of gender is found to have no influence on the relationship between the recognition of intrapreneurial activity and the intrapreneurial behaviour of academicians ( $\beta = 0.113$ ,  $t = 4.403$ ,  $p = 0.182$ ). Hence, H5 is supported except for the inclusion of the recognition of intrapreneurial activity as an organisational factor.

The research objectives (RO) mentioned in Chapter 1 will be discussed here in connection with the findings.

**RO1. To identify the organisational factors that affect the intrapreneurial behaviour of public university academicians.**

The research objective 1 is satisfactorily achieved as this study examines the effect of both organisational factors (management support, favourable organisational culture, flexible organisational structure, and recognition of intrapreneurial activity) on the intrapreneurial behaviour of academicians in public universities by assessing the measurement model and structural model.

**RO2. To examine the significance of the effect of the selected organisational factors on intrapreneurial behaviour.**

The research objective 2 is satisfactorily achieved as this study also finds the degree of effect of organisational factors on the intrapreneurial behaviour of academicians in public universities. Referring to Table 9, only management support shows a strong effect on the intrapreneurial behaviour of academicians while the rest of the factors show a moderate level of effect.

**RO3. To find out the critical factor among the selected factors having more effect on intrapreneurial behaviour.**

The research objective 3 is also achieved as only one factor (management support) out of four factors shows a strong effect on the intrapreneurial behaviour of academicians. Therefore, management support can be regarded as the most critical factor, and the remaining factors can be regarded as moderately critical factors.

**RO4. To propose a model of the determinants of intrapreneurial behaviour among academicians in public universities.**

The research objective 4 is satisfactorily achieved. However, since two factors (recognition of intrapreneurial activity and self-efficacy) show an insignificant effect on intrapreneurial behaviour in the presence of gender as the moderating factor, the conceptual model proposed in Section 3.6 (see Figure 1) will require slight changes as depicted in Figure 5.

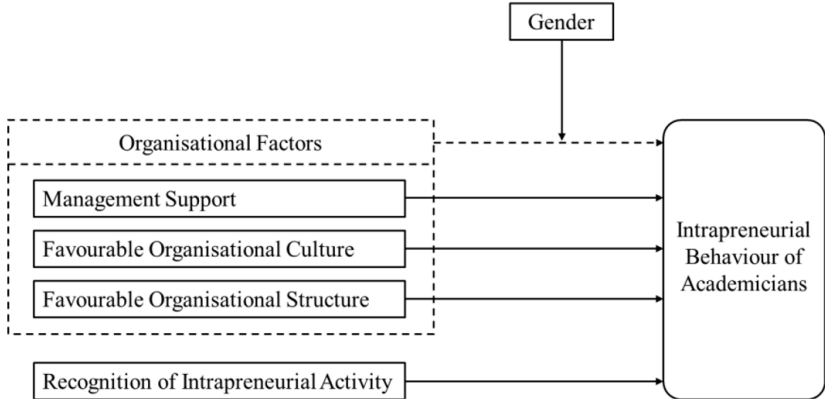


Figure 5. Proposed model of this study

**RO5. To assess the moderating role of gender on the effect of organisational factors on academicians' intrapreneurial behaviour.**

The research objective 5 is achieved satisfactorily as the moderating effect of gender on the relationship of organisational factors and intrapreneurial behaviour. While gender acts as a moderating variable, it has a significant effect on the

relationship of organisational factors with the intrapreneurial behaviour of academicians except for the recognition of intrapreneurial activity.

Nevertheless, in this study, male respondents are 43.2 percent, whereas female respondents are 56.8 percent. Hence, it is argued that when female respondents are more than male respondents and gender acts as a moderator, the above phenomena (recognition of intrapreneurial activity showing an insignificant effect) occur. In other words, when female acts as a moderator, the recognition of intrapreneurial activity shows more insignificance than when male acts as a moderator.

## **6. Conclusion**

The study primarily aims to examine the effects of four organisational factors on the intrapreneurial behaviour of academicians at public universities in the Southern region of Malaysia. The four organisational factors undertaken in this study are management support, favourable organisational culture, flexible organisational structure, and recognition of intrapreneurial activity.

Both the inner model and outer model of this study were developed using SmartPLS ver4 software. It was found that all the variables are reliable in accordance with convergent validity and discriminant validity. Hypothesis tests were performed using SmartPLS. Among the four primary hypotheses (H1, H2, H3, and H4), all of them were supported as all the exogenous variables were found to have a positive significance with the endogenous variables. A hypothesis test was also performed for H5 to assess the influence of gender as a moderating variable on the relationship between organisational factors and the intrapreneurial behaviour of academicians. With regards to H5, gender was found to have a significant effect on the relationship between organisational factors and the intrapreneurial behaviour of academicians except for the presence of the recognition of intrapreneurial activity. As such, gender has no significance on the relationship between the recognition of intrapreneurial activity and the intrapreneurial behaviour of academicians.

Last but not least, the achievement of each research objective of this study has been reviewed. All the five research objectives are found to have been satisfactorily achieved. Furthermore, a new model of the determinants of intrapreneurial behaviour has been proposed.

## **7. Implications of the Study**

The study has both theoretical and practical implications which are highlighted in the sections below.

### ***7.1. Theoretical Implications***

This is one of the very few studies that has been conducted on the intrapreneurial behaviour of academicians at public universities in the Southern Region of Malaysia. The study also has significance for future researchers. It is expected to act as a valuable academic reference for future researchers who are interested in the related field, especially with interest concerning the intrapreneurial behaviour of academicians in Malaysian Southern regional higher learning institutions. Since empirical literature on the determinants of intrapreneurial behaviour of academicians is quite limited, future

researchers based in other countries may also use it as a reference from a Malaysian context. Moreover, the study may be verified for consistency with the findings of future studies by other researchers. The study would provide meaningful insights for those researchers who may select the factors that have been selected in the current study.

## *7.2. Practical Implications*

Practical implications are divided into two categories, namely managerial implications and policy implications.

### *7.2.1 Managerial Implications*

The findings will provide necessary information on organisational factors that should be focused on more by the management of public universities. It is important that the recruiting authority carefully takes account of the findings and recommendations provided in this study, since an intrapreneurial academician is able to bring change to the education system, adopt alternative routes of teaching, find real-life solutions through innovative research, bring more students and profitability for the institution due to high popularity and social reach.

#### *7.2.2. Policy Implications*

In policy-level terms, the study may act as a guideline for those practitioners who are involved in the regulatory organisations and departments related to tertiary education. Nevertheless, the research findings would help policy makers in the Ministry of Higher Education (MOHE) and relevant departments that provide education standards and guidelines, and a track record of academicians' achievements.

## **8. Limitations of the Study**

Since the study had a mandatory date of completion, one of the constraints that negatively affected the data collection process was a time constraint. Since the research was not fully or partially funded, another limitation faced was a financial or cost constraint. Due to the absence of adequate funds, the number of public universities was limited. In order to reach more sample respondents in a cost-effective way, an e-mail and Google Doc link were used to contact the respondents.

## **9. Recommendations**

In this section, recommendations for future researchers as well as academicians are provided for further actions.

### *9.1. Recommendations for Future Researchers*

Future researchers are recommended to explore the effect of different organisational factors. They may also examine the presence of other mediators such as age, designation, and salary level and their effect on the relationship of other organisational factors with intrapreneurial behavior of academicians in Malaysia. They may also focus on other parts or regions in Malaysia as well as academicians in the private HLIs of the country.



## 9.2. Recommendations for the Management of HEIs

The management of the public higher learning institutions may have emphasised more on the organisational factors, especially management support, favourable organisational culture, and flexible organisational structure to motivate academicians to enable the demonstration of intrapreneurial attitude and activities that will eventually contribute to improved teaching methods.

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