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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 an adequate intrapreneurial attitude may be demotivated to innovate in 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 organisational factors considered in this study have a significant effect on intrapreneurial behaviour. The mediating role of gender was also sought. It was found that 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 organizational 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 respected students, a shaper of the world, and a facilitator of innovation who transfers skills required for industry into students. A study was conducted by Yusof, Siddiq and Nor (2014) over eight 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 positive significant relationship between the intrapreneurial attitude of academicians in twenty public universities and their job performance. Nordin (2020) affirmed that a paradigm shift has been noticed in academia where academicians have focused more on using virtual webinars, meeting apps, YouTube tutorial recording, 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 behavior of academicians from higher learning institutions, less attention has been paid to examining the effect of organizational factors on the intrapreneurial behavior of academicians. Norhasimah and Ismail (2012) examined the relationship between 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 organizational behavior has not been

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taken into account. Voo et al. (2019) conducted a study on similar interests concentrating on academicians at Universiti Teknologi Malaysia (UTM). These studies do not provide adequate information on the effect of organizational 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 attention in this regard.

2.2. Research Objectives

This research mainly aims to assess the effect of selected organizational factors on 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 organizational factors that affect the intrapreneurial behavior of public university academicians.
2. To examine the significance of the effect of the selected organizational factors on intrapreneurial behaviour.
3. To find out the critical factors among the selected factors that have more effect on intrapreneurial behaviour.
4. To propose a model of determinants of intrapreneurial behaviour among academicians in public universities.
5. To assess the moderating role of gender on the effect of organizational factors on academicians' intrapreneurial behaviour.

3. Literature Review

In this section, recent empirical studies have been reviewed in the context of the variables selected in this study. Literature related to the intrapreneurial behaviour of academicians, four selected determinants under organisational factors, gender as a moderator, and underpinning theories have been reviewed with relevant definitions and contextual background.

3.1. Intrapreneurial Behaviour of Academicians

Taştan and Güçel (2014) defined 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 organization. Cadar & Badulescu (2015) defined that intrapreneurial behaviour may denote behaviour, 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 are 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 the initiatives of an individual employee or member of an organization, 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, and novel idea generation to a risk-taking attitude for bringing a better solution.

3.2. Effect of Organisational Factors on Intrapreneurial Behaviour

Several organizational factors 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 studies 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 organization-wide resource planning system. Lin (2010) highlighted that when the management of an organisation acts on 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 organization 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 that 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 resource availability and the informal culture of an organization 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 organizations.

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 public listed companies in the manufacturing sector in Nigeria. Gürsoy and Güven (2016) explored the effect of 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. Innovative culture can be denoted as a subculture of organizational culture that is more focused on nurturing and developing innovation and creativity within the organizational

boundary. Another study in Indian organizations 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 have more innovation 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 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 process organizational structure on intrapreneurial development in 28 manufacturing entities and 26 service providers in Bosnia and Herzegovina. They revealed a significant effect of process organisational structure on the development of intrapreneurship in these firms. They further concluded that firms with more process organisational structure also possess flattened or flexible structures, decentralization 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 organizational structure has a positive and significant effect on the orientation of intrapreneurship. However, the authors suggested that to provide 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 from 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. This is because intrapreneurial employees usually exist in a company but may not demonstrate intrapreneurial activity due to the fear of being left alone or remaining unrecognized. Govindarajan and Desai (2013) studied 5,000 employees in an organisation, among whom 250 were found to be natural innovators, and out of them, a further 25 were found to be great intrapreneurs. The study acknowledged that intrapreneurs need to be recognized by the organisation before they leave due to negligence and lack of opportunity. If the intrapreneurs are recognized and retained, they can apply their ideas in and for their existing organisations. Madu (2018) conducted a study involving 209 full-time academic staff working at the Postgraduate Diploma Programme at the University of Witwatersrand in South Africa. The study's findings revealed that seven factors were found to have a significant effect on 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 Moderator

In this study, gender is considered as the moderator between organisational factors and the intrapreneurial behaviour of the academicians. Riggs (2019) surveyed over 110 faculties 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 faculties reported a higher level of positive attitude towards online learning, female faculties reported comparatively negative attitudes 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 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 behavior. Lizote, Lana, and Verdinelli (2014) showed that there is an effect of management support on intrapreneurial behaviour among academicians in Brazilian higher learning institutions. Vet al., (2020) emphasize the importance of understanding the determinants of university employee intrapreneurial behavior in Latvian universities; they also highlight the intrapreneurial activities performed by non-academic employees, such as those in university libraries (Valka et al., 2020). 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 proposed hypothesis is developed as follows:

- **H1:** ***Management support significantly influences the intrapreneurial behavior 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. A study conducted by Sharma and Jain (2021) found a positive and significant relationship between organizational culture and intrapreneurship among employees in the context of the software industry in India. In the context of manufacturing companies in Nigeria, a study by Akinbode and Ogunnaike (2018) established a positive and significant effect of

organizational culture on the growth of intrapreneurship. The study highlighted the importance of a supportive and innovative culture in driving intrapreneurial initiatives within manufacturing firms. 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 manufacturing companies in Nigeria. Therefore, the second hypothesis of the study is developed as follows:

- **H2:** ***Management support 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 behavior 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 females 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 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 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 emphasizes 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 the 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 the theory Y are assumed to be proactive, willing to work beyond responsibilities, risk-taker and self-motivated (Omari, 2018). Accordingly, managers under the theory X assume that the employees are always required to be monitored, supervised and keep 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 can come out with innovative ideas if given the opportunity which is even 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 rationale under theory Y. The theory of X and Y is relevant to the study as it assumes management strives to provide support, training, motivation and favourable environment to the public university academicians assuming them of 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 hypothesis 1 to hypothesis 4 (H1, H2, H3, and H4) fall under the category of organizational factors. Besides these, gender is also included as a moderating variable. Intrapreneurial behavior of academicians remains as the dependent variable illustrated in Figure 1.

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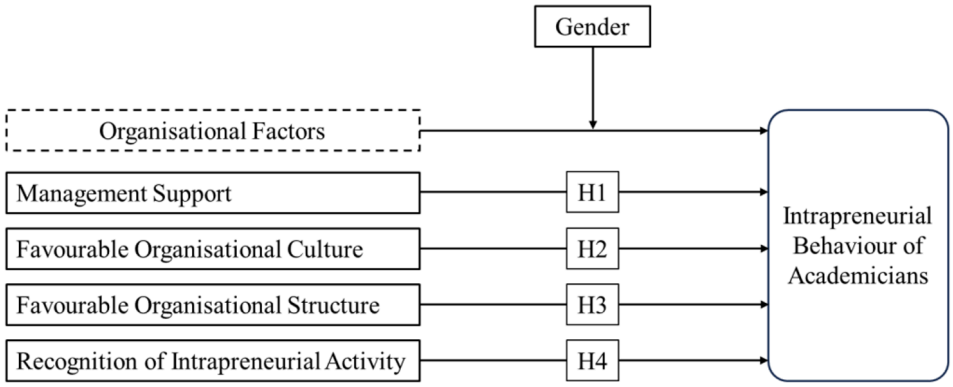

Figure 1. Conceptual framework of the study

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 (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.

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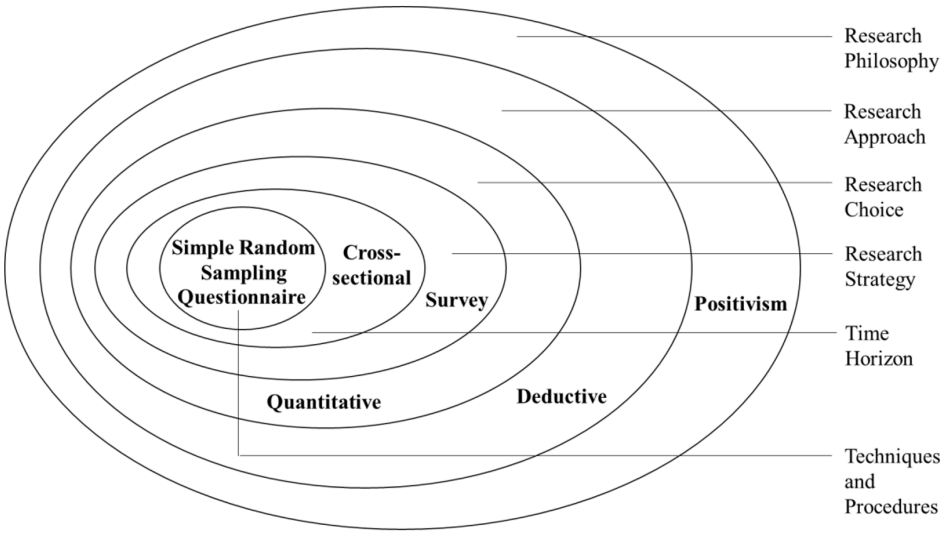

Figure 2. Onion model for the study

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. Two hundred fifty completed questionnaires were returned with a response rate of 45.45 percent. No missing information or repetitive responses were found, and no response was omitted. Therefore, after the collection and evaluation of primary data, 250 responses were considered for data analysis. In the case of this study, the name and e-mail 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, e-mails 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 analyze 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, with 63.6 percent. The next majority of respondents were 29.2 percent. Respondents aged below 30 years were the lowest at 7.2 percent.

Seventy-four point eight percent of the respondents were Malay, who were the majority. Non-Malaysian respondents from different countries were the second highest, with 13.2 percent. Chinese respondents and Tamil respondents were 4.4 percent and 7.6 percent, respectively.

Ninety-one point six percent of the respondents were in full-time occupation, while only 8.4 percent of respondents reported having been doing part-time as academicians (i.e., Research Assistants and PhD students).

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

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The 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.

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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 loading of each indicator under each construct has been examined using SmartPLS 4. The standard and satisfactory value of 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 does not affect the value 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 the respective construct were eliminated to increase convergent validity. As these two items were deleted, the respective CA and CR values were improved. There were also values 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 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, Cronbach's alpha, composite reliability, and AVE values were tested. Traditionally, 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, CA and CR values between 0.60 and 0.70 are 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 the 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 change of 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, the loadings of which 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

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extracted (AVE) remains a minimum of 0.524 and a maximum of 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.

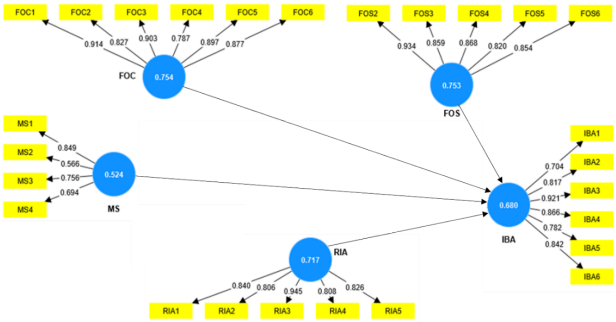

Figure 3. Measurement model of the study

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 AVE's square root 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.

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	FOC	FOS	IBA	MS	RIA	AVP
FOC	0.869					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	0.847	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.

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

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 loading and cross-loading of individual items and variables.

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		FOC	FOS	IBA	MS	NA	PP	RIA	RTP	SE
Intrapreneurial Behaviour of Academicians	**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
Managerial Support	**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
Favourable Organisational Culture	**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
Flexible Organisatio nal Structure	**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
Recognition of Intrapreneurial Activity	**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 discriminant validity (Hair et al., 2011).

5.2.2. Assessment of the Structural Model (Inner Model)

The structural model examines path coefficient assessment, coefficient of determination, effect size of the coefficient of determination, predictive relevance, effect size of predictive relevance, and 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 behavior of academicians as the endogenous variable, while the exogenous variables are the organisational factors (managerial support, flexible organisational structure, favorable organisational culture, and recognition of intrapreneurial activity). Gender is the other exogenous variable that 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 path coefficients (Hair, Ringle & Sarstedt, 2011; Ringle, Sarstedt & Straub, 2012). To evaluate the quality of the inner model, path coefficient, effect size, coefficient of determination, and cross-validated redundancy were applied as suggested by Hair, Ringle & Sarstedt (2011).

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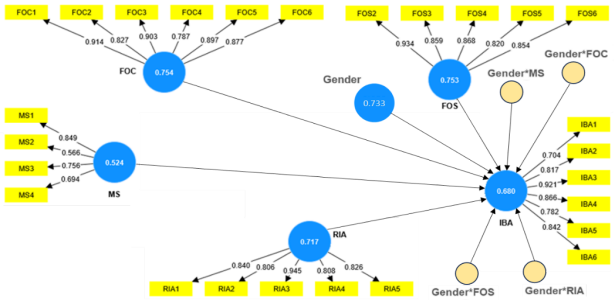

Figure 4. The structural model of the study

5.2.2.1. Path Coefficients Assessment

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

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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 the 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 organizational factors and the intrapreneurial behaviour of academicians (managerial support, flexible organizational structure, favorable organizational 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 the intrapreneurial behaviour of academicians.

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Hypothesis	Relationship	Beta Value	STDEV	T-value	p-value	Decision
H5	**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 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 effect the independent variable has on the dependent variables. Academic researchers suggest observing the rule of thumb in 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).

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

Table 8. Result of R^2 value

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 (R^2)

According to the suggestions of Cohen (1988), f^2 values of 0.02, 0.15, and 0.35 represent 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 behavior of academicians only has a stronger effect. The effect sizes of FOS, FOC, and RIA on intrapreneurial behavior have moderate effects.

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

Table 9. Result of f^2 value

5.2.2.5. Assessment of Predictive Relevance (Q^2)

A model's predictive quality can be assessed by a 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).

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	SSO	SSE	$Q^2(1 = \frac{SSE}{SSO})$
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 from zero. It is thus concluded that the model has adequate predictive relevance.

5.3. Results and Discussion

As shown in Table 6, hypothesis H1, which asserts a positive relationship between managerial support and the intrapreneurial behaviour of academicians, was supported using PLS output with a significant relationship (β = 0.391, t = 11.381, p-value = 0.000) found between these two variables. Hypothesis H2, which states a positive relationship between a flexible organisational structure and the intrapreneurial behaviour of academicians, is also supported by a positive beta (β) value and t-value (β = 0.101, t = 3.539, p = 0.000). Hypothesis H3, which specifies the positive relationship between a favorable organisational structure and the intrapreneurial behaviour of academicians, is also supported with positive and significant results (β = 0.089, t = 3.189, p = 0.002). Hypothesis H4, specifying a positive influence of recognition of intrapreneurial activity on the intrapreneurial behaviour of academicians, is also supported (β = 0.113, t = 4.403, p = 0.000). A moderate influence of gender on the relationship between managerial support and the intrapreneurial behaviour of academicians is found to be positively significant (β = 0.196, t = 5.858, p = 0.000) as well. However, the influence of gender on the relationship between a flexible organisational structure and the intrapreneurial behaviour of academicians is found to be negatively significant (β = -0.069, t = 3.037, p = 0.002). Likewise, the influence of gender on the relationship between a favorable organisational structure and the intrapreneurial behaviour of academicians is found to be negatively significant (β = -0.032, t = 1.334, p = 0.002). However, the influence of gender is found to not influence the relationship between recognition of intrapreneurial activity and the intrapreneurial behaviour of academicians (β = 0.113, t = 4.403, p = 0.182). Hence, H5 is supported except for the inclusion of 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.***

Research objective 1 is satisfactorily achieved as this study examines the effect of both organisational factors (management support, favorable organisational culture, flexible organizational 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 organizational factors on intrapreneurial behaviour.***

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 ($f2$ value is 0.538) on the intrapreneurial behaviour of academicians, while the rest of the factors show a moderate level of effect ($f2$ values are 0.200, 0.060, 0.061).

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

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 determinants of intrapreneurial behaviour among academicians in public universities.***

Research objective 4 was satisfactorily achieved. However, since two factors (recognition of intrapreneurial activity and self-efficacy) show an insignificant effect on intrapreneurial behavior 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.

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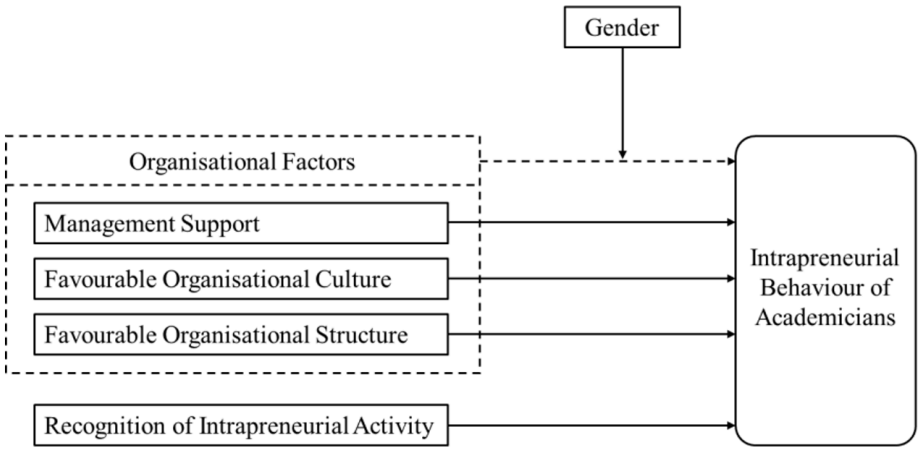

Figure 5. Modified Proposed model of this study.

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

Research objective 5 is achieved satisfactorily as the moderating effect of gender on the relationship of organizational factors and intrapreneurial behaviour. While gender acts as a moderator, it has a significant effect on the relationship of organizational factors with the intrapreneurial behavior 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 because female respondents are more than male respondents and act as a moderator, the above phenomenon (recognition of intrapreneurial activity showing an insignificant effect) occurs. In other words, when a female acts as a moderator, recognition of intrapreneurial activity shows more insignificance than when a male acts as a moderator.

6. Conclusion

The study primarily aims to examine the effect 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 organizational 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 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 regard to H5, gender was found to have a significant effect on the relationship between organisational factors and intrapreneurial behaviour of academicians except for the presence of recognition of intrapreneurial activity. As such, gender has no significance on the relationship between recognition of intrapreneurial activity and the intrapreneurial behaviour of academicians.

Finally, the achievement of each research objective of this study has been reviewed. All five research objectives are found to have been satisfactorily achieved. Furthermore, a new model of 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 have been conducted on the intrapreneurial behavior 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 those interested in the intrapreneurial behavior of academicians in Malaysian Southern regional higher learning institutions. Since empirical literature on the determinants of intrapreneurial behaviors of academicians is quite limited, future researchers based in other countries may also use it as a reference from the Malaysian context. Moreover, the study could be generalized by conducting future research in other locations. It provides meaningful insights for researchers who have an interest in the same field, especially those who want to use the factors that have been used in the current study.

7.2. Practical Implications

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

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7.2.1. Managerial Implications

The findings 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 into account the findings and recommendations provided in this study since an intrapreneurial academician can bring change to the education system, adopt alternative routes of teaching, find real-life solutions through innovative research, bring more students, and increase profitability for the institution due to high popularity and social reach.

7.2.2. Policy Implications

At the policy level as well, the study acts 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 policymakers in the Ministry of Higher Education (MOHE) and relevant departments that provide education standards and guidelines and track records 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 time constraints. Since the research was not fully or partially funded, another limitation faced was financial or cost constraints. 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, e-mail and Google Doc links were used to contact the respondents.

9. Recommendations

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

9.1. Recommendation 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 the intrapreneurial behavior of academicians in Malaysia. They may also focus on other parts or regions in Malaysia as well as on academicians in the private HLIs of the country.

9.2. Recommendation for the Management of HEIs

The management of the public higher learning institutions may emphasize more on the organizational factors, especially management support, favorable organizational culture, and flexible organizational structure, to motivate academicians to enable the demonstration of intrapreneurial attitudes and activities that will eventually contribute to improved teaching methods.

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