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Managing Innovative Behaviors among Human Resources - Lecturers in Higher Education: The Struggles Between Internal Factors and The Stimulating External Factors

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Abstract
The era of industrial revolution 4.0 which has brought about changes in the way of life, work and their interrelation has also enabled the human's tasks to be performed by machines. As a result, the demands on human skills requirements have changed accordingly. Innovative behaviour in responding the fast-changing and unpredictable business environment is one of the keys to the success of an organization. Yet, to possess an innovative behavior cannot be attained instantly. Rather, it requires efforts of stimulations to realize it. Using qualitative methods through a session of focus group discussion (FGD) attended by six functionaries of lecturers from three institutions of higher education in Jambi, this study aimed to explore what and how to stimulate lecturers' innovative behaviour based on their experience in their respective field. The findings from the FGD showed that innovative behaviour was an interaction between the internal factors of the lecturers themselves and the stimulating external factors. The innovative behaviour is only attributed to the lecturers who have competences and are risk-takers. Therefore, support from the leaders in developing lecturer's competence is vital in shaping innovative behaviours.

Keywords
Focus group discussion; lecturers; innovative behaviour; managerial perspective

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Introduction

The era of the industrial revolution 4.0 marked by the integration of the virtual world and the digitalization system, has brought changes to the way humans live, work and relate to one another around the world (Schwab, 2016). One result is that a lot of human power has been replaced by machines so that some jobs that used to exist are no longer needed. On the other hand, some jobs that were not there are now jobs that promise great opportunities. Of course, this phenomenon also affects the inputs, processes, outputs and outcomes required by a business entity, be it in the form of a profit-oriented business or universities that focus on educational services.

The advancement of internet-based information technology makes it imperative for universities to provide IT-based education, but that does not mean that it is able to shift the role of lecturers in the teaching and learning process. Internet-based information technology is just a tool. A tool is just a piece of equipment to facilitate work, but it still has to be moved and controlled by humans. Especially in the field of education, there must be a touch of emotions, values, morals and ethics that must be conveyed to students rather than just knowledge transfer. This is because the aim of education is essentially to form a change in behavior for the better permanently.

Various aspects of education in tertiary institutions such as curriculum, ways of interaction between lecturers and students, institutional aspects of higher education and university assets must also adapt to technology-based, for example online learning, paperless in office administration and learning activities, and systemized information systems. There are three major groups involved in the teaching and learning process in Higher Education, namely lecturers, students and educational staff. However, those who are directly involved in dealing with students as outputs and outcomes in the teaching and learning process are the lecturers. Therefore, the focus in responding to the changes in the 4.0 revolution era for Higher Education is directed to Lecturers first. Referring to Times Higher Education (THE) Asia University Ranking 2020, the dominance of the top 10 ranking is in China, Singapore and Hong Kong. The University of Indonesia is ranked 162, defeated by the University of Malaysia at rank 43 and Brunei Darussalaam which is ranked 60. Seeing this fact implies the need for changes in the management of universities in Indonesia to be more competitive at the Asian and even world level. To gain a sustainable competitive advantage, innovative behavior is needed from all elements

involved, from students, lecturers and education staff. The importance of innovative behavior can be identified from its impact on increasing work and producing innovative outputs such as competitiveness (Aslam, Aslam, Ismail & Cheema, 2017).

The role of a lecturer, which initially became a one man show when standing in front of the class, has now changed to become a facilitator in the teaching and learning process. Lecturers must be able to provide a stimulus to students to be more actively involved in the teaching and learning process which can be done offline in class or online from anywhere. To address this phenomenon, various strategies have been carried out by higher education institutions, both pro-active, inter-active and adaptive strategies. However, whatever the choice of strategy, innovation and innovative behavior are essential factors. Therefore, many academics and practitioners discuss it through various studies and scientific meetings. As such, a number of research on innovation have been carried out to address to the issue (Hakimian, Farid, Ismail, & Nair, 2016).

The previous studies on innovation were more focused on manufacturing industries related to technological aspects (Özaralli, 2015). In the midst of the growing demand for the improvement in the process, output and outcome of tertiary educational institutions, and the increasingly intense competition among state, private and foreign institutions, teachers' innovative behavior is considered as key to educational innovation (Li, Liu, Liu & Wang, 2016; Gkorezis, 2016). If all this time the teaching and learning process is carried out in a fully structured manner based on the Study Learning Plan which is carried out face-to-face in front of the class, then in the era of the 4.0 revolution based on information technology this can provide great opportunities for lecturers to innovate in carrying out the teaching and learning process by using various media. Teaching and Learning does not have to be done in front of the class. Teaching and learning can be done from home or from anywhere with the help of information technology that can be accessed from anywhere.

However, the understanding of innovative behavior itself is still operationalized in broad variations, even only more focusing on the creativity to stimulate the creation of new ideas (Purc & Laguna, 201 9). Most researchers distinguish that creativity is related to idea generation phase, while innovation is at the phase of implementation (Zacher, Robinson, & Rosing, 2016). Other researchers use the term "innovative behavior" which sometimes is used interchangeably with creativity (Purc & Laguna, 2019. There is still a confusing understanding of innovative behavior, especially among lecturers, while innovative behavior itself is one of the keys to the success of organizational effectiveness,

so it is necessary to explore the meaning of innovative behavior from the perspective of the lecturers themselves. Understanding this meaning will help to manage this innovative behavior from a managerial perspective. Although there have been a lot of studies that tried to examine the antecedents of employee's innovative work behavior, the inconclusiveness of the individual and contextual antecedents calls for future research. Thus, the leadership can stimulate the lecturers' innovative behavior so that the selection of learning methods and models can be done in an adaptive, flexible and competent manner according to the situation and needs.

1. Literature Review

1.1 Innovative behaviors

In higher education, the innovative behavior of the academic community consisting of students, lecturers and staff is the key to higher education excellence in providing services and producing competitive outputs. Innovative behavior is traditionally defined as an initiative type of individual or collective behavior associated with the systematic development of new technologies in various spheres of social life or with the creation of new objects of material and spiritual culture (Richmond & Tatto, 2016).

Innovation is often associated with the use of new technology in the creation of goods or services. Innovation behavior is not created instantly, but through three phases which consist of 1) idea generation which is based on brainstorming and problem solving, 2) idea promotion which mainly shares of ideas on formal platforms and 3) idea realization means application of ideas and converting them into reality (Shahab & Imran, 2018). Thus, starting from the creation, introduction, processing and application of new ideas about ways of doing things, technology, new product ideas, procedures or work processes that aim to increase the effectiveness of the organization or the wider community is a series of innovative behaviors (Bos-Nehles, Bondarouk & Nijenhuis, 2017; Odoardi, 2018).

The innovative behavior of lecturers is of course not the same as the innovative behavior of office employees. Innovation in teaching is also important for all teachers to meet current and future educational needs (Abdullah & Ling, 2016). Innovative teaching is defined as the ability of the teachers to engage students in the classroom, to improve students' ability to learn, to identify and address the different needs of students by applying strategies. Teachers who have innovative behavior have the characteristics of

being able to work creatively, contribute to ideas and be able to provide positive outcomes for their institutions (Baharuddin, Masrek & Shuhidan, 2019). This innovative behavior is formed from three components, namely (1) generation of ideas (2) idea promotion (3) realization of idea in teaching and learning. Ideation means the formulation of new ideas in teaching and learning while promotional ideas are associated to situations where teachers are bound by the obligations to generate new ideas for teaching and learning. Lastly, Realization refers to the process of innovation to realize an initial idea.

Other authors argue that innovative behavior begins with activities with their own initiatives such as creating, developing, implementing, promoting or modifying new ideas (Thurlings, Evers, & Vermeulen, 2015). Basically, innovative behavior appears as a person's reaction to changes that occur around him and as an action in which a subjective attitude towards change is manifested (Trapitsin, Granichin, Granichina, & Zharova, 2018). This innovative behavior is born through a stage which is the result of the interaction between the individual's own internal factors and external factors that stimulate individuals to behave innovatively.

1.2 Factors influencing innovative behaviors

Referring to the Social cognitive theory (Bandura, 1986) which suggests that individual behavior is the result of the interaction between individual cognitive aspects and the social environment around the individual. This means that the innovative behavior is the result of the interaction between the individual's own internal factors and external factors that stimulate individuals to behave innovatively. Therefore, the role of organizational leaders through the creation of an academic atmosphere with the support of various resources can stimulate lecturers to behave innovatively. A literature search reveals that workplace happiness, organizational climate, affective commitment and leadership style are some of the identified factors affecting innovative behavior of individuals at work.

1.2.1 Workplace happiness

The concept 'happiness' refers to the feeling or experience of satisfaction, positive wellbeing, sense of joy combined with meaningful work (Fisher, 2010). There are two approaches to happiness identified by (Straume & Vittersø, 2012), namely: hedonic and eudaimonic approach. Hedonic approach focuses on pleasures of the mind and body by avoiding pain. While eudaimonic approach is a deeper level of perceived happiness that exist through involvement or doing something meaningful and noble that generate

progress. Past research has proven a positive relationship between happiness at the workplace on creativity (Csikszentmihalyi, 1997), job satisfaction (Fisher, 2010); emotional stability (Hills, & Argyle, 2001); intention to quit (Wang & Yi, 2011). Lecturers who teach happily can transmit positive moods to students so that students can enjoy lecture materials. The feeling of being happy can also stimulate the creativity of lecturers and students. Innovative lecturers will stimulate innovative students.

1.2.2 Organisational climate

The work climate is often equated with the work environment. A work climate that encourages innovation is formed from employees' perceptions of organizational support that encourage innovative behavior, for example rewarding employees for maintaining their innovation, providing learning opportunities to develop new ideas, tolerance for failures, empowerment and useful administrative practices to create suitable OC that fosters a sustainable climate for innovation (Imran, Saeed, Anis-ul-Haq, & Fatima, 2010; Dul & Ceylan, 2014). Other researchers also acknowledge that organizational support and rewards for workers are important factors for encouraging innovative behavior in the workplace (Yu, Yu, & Yu, 2013; Chen, Huang, & Hsiao, 2010). Imran, Saeed, Anis-ul-Haq, Fatima (2010) conclude that autonomy, encouragement by supervisor and team cohesion are the factors that support innovation.

To boost creativity and innovation of among the workforce, organizations should create a work environment with supportive features and reward strategy. Thus, creative and innovative teaching depend on the employee's working conditions and OC variables such as organizational support, management support, support by team members and challenging work. Fidan and Oztürk, (2015) explain that a positive working environment, opportunities for learning, fairness and well treatment encourages teachers to develop new teaching methods, and which in turn, serve as a challenge in the education process for their students. Similarly, Hénard & Roseveare (2012) confirm that features such as supportive school environment and good relationship with co-workers encourage teachers' innovative teaching. Consequently, a positive organizational climate perceive by teachers can encourage IB.

1.2.3 Organizational commitment

Meyer and Allen (1991) define OC as a tri-dimensional concept namely: continuous, normative, and affective dimensions. However, among the three components mentioned above, affective commitment has the strongest connection with the meaning of attitude

and employee outcome (Vandenberghe, Bentein, & Stinglhamber, 2004). Rhoades, Eisenberger & Armeli, (2001) describe AC as the employee's feeling of emotional bond or attachment to the workplace. Employees that are affectively committed are usually considered to be loyal and dedicated (Iqbal, Tufail, & Lodhi, 2015). Also, sense of belonging is connected with the emotional attachment of the employees and these employees have the willingness to work effectively and to be engaged in productive activities towards the attainment of goals (Casimir, Ngee Keith Ng, Yuan Wang & Ooi, 2014). In summary, affectively committed employees are more concerned with the wellbeing of their workplace and are more motivated to support the organisation. This is because, such employees align their visions and with the organisation's visions (Ng, 2015).

For example, developing innovative solutions to problems, putting extra effort to acquire innovative capabilities and improving innovative behaviour to increase performance. Therefore, from the perspective of bonding to schools, affective commitment refers to emotional affection of the teachers' involvement in work with the feeling of pleasure and identification (Abdullah & Ling, 2016). Also, it can be described as the willingness of the teachers to maintain membership in their school as the responsibility for achieving goals (LiLiu, Liu & Wang, 2016). The latter is in line with J. Meyer & N. Allen (1991) opinion that AC is related to emotional relationship with subordinate, identification with the involved members of the organisations. This implies that subordinates that have high level of AC will remain as members of the organisation because they are confident about the goals and values of the organisation (Mousa & Alas, 2016).

1.2.4 Leadership

The positive relationship between a leader and the employees is confirmed by numerous scholars such as (Masood & Afsar, 2017; Abbas, Iqbal, Waheed & Naveed Riaz, 2012; Choi, Kim, Ullah, & Kang, 2016; Torres, Espinosa, Dornberger & Acosta, 2017). The scholars supported that leaders are the driving force behind individual innovation. This implies that innovation stimulating leadership can encourage IB of employees. However, Basu and Green (1997) argue that the relationship between a leader and IB of employees would only be strong if the employees perceive that their IB will benefit their work. However, workplace happiness and affective commitment cannot be achieved without effective leadership style and positive organisational climate. Education is becoming a

leading factor in the sustainable development of the state, which determines the new requirements for it and its new basic characteristics, one of which is the innovative nature of modern education (Arkhipova & Kuchmaeva, 2018).

2. Methodology

We conducted a qualitative study using a single focus group discussion (FGD). The motive of the FGD was to reinforce and validate the outcomes from literature by the scholars. An FGD can generate discussion or debate about a research topic that requires collective views and identifies the meanings that lie behind those views (Nyumba, Wilson, Derrick, & Mukherjee, 2018). Therefore, to gather informative data in our FGD, we focused on recruiting study participants based on their experiences and willingness to engage in a candid discussion, to explore what and how to stimulate lecturers' innovative behavior in the era of industrial revolution 4.0 as a model of influential factors of innovative behavior.

Participants of the discussion were selected using purposive sampling techniques based on certain criteria. Referring to the opinion of (Adams, Khan & Raeside, 2014), the participants in the FGD must be homogeneous, i.e. comparable grades, experience and age. Therefore, the criteria of selected participants were permanent lecturer aged 50 years and over, possessing a doctoral degree and having additional duties as officials in their respective faculties. It was expected that they had working experience with lecturers so they were able to understand innovative behavior. The participants were invited from representatives of three well-known higher educational institutions in Jambi City, namely Universitas Jambi (University of Jambi, state-owned), Universitas Islam Jambi (Jambi Islamic University, state-owned) and Universitas Batanghari (Batanghari University, private-owned). In addition, there was also a professor in the field of psychology as a resource person who understands the science of human behavior. The number of participants was determined referring to Krueger's argument (1988) that participants should be 7 to 10 people in number; but it can still be increased up to 12 people. In this study, only 9 participants were involved considering that if there were too many people, it would hamper the chance of each participant to convey their opinion. Meanwhile, the simultaneous time of arrival of participants to the venue was also difficult to manage. Odd number was chosen to facilitate the voting process when necessary to take decision.

The main factors considered while selecting participants were: (1) Knowledge of the subject matter. (2) Spread, in terms of the faculty representation.

The procedure for the enlistment of participants included sending of official invitation letters and afterward telephone confirmation of appearance when invited for participation. The objective of the Focus Group Discussion was to provide a platform for stakeholders to discuss what is the meaning innovative behavior for lecturer and what factors influencing innovative behavior.

Table 1: *Participants' characteristics*

No	Name	Age (year)	Education (degree)	Position
1	(E)	61	Doctoral	Professor in educational psychology
2	(T)	53	Doctoral	Deputy Dean of Animal Husbandry, Unja
3	(Sy)	52	Doctoral	Head of QA Division, FEB
4	(An)	55	Doctoral	Head of LPPPM, Unja
5	(J)	52	Doctoral	Head of LPTIK, Unja
6	(O)	51	Doctoral	Deputy Dean 1 FEB, Unbari
7	(Az)	53	Doctoral	Dean of Postgraduate Program, Unbari
8	(K)	50	Doctoral	Dean of Postgraduate Program, UIN
9	(R)	50	Doctoral	Deputy Dean 1 FEBI, UIN

The data collection was conducted via the method of focus group discussions (FGD) in which a group of people discussing a particular issue or topic which is guided by a facilitator or moderator to collect qualitative data. The method was chosen since it was required to obtain in-depth information about participants' perceptions of lecturer behaviour. During the session of discussion, two main and open-ended questions related to the understanding of innovative behavior and how to stimulate it were raised. All interview results were recorded and rewritten verbatim. Furthermore, the transcript will be analysed by first triangulation to the resource person. The FGD session took place at a hotel in Jambi city, a comfortable place, enabling them to focus on providing answers to the open-ended questions.

All audio-records were transcribed verbatim and translated into English by an experienced translator for analysis. We provided both the transcriber and translator with a brief description about the research scope and objectives of the data to enhance their understanding of the subject matter. The transcripts and translations were cross-checked for consistency. Translated notes were read and re-read by the principal investigator with

qualitative research experience to define categories and sub-categories guided by the objective of the study.

3. Findings

3.1 Lecturers' understanding on innovative behavior

The first participant (E) argued that innovative behavior comes from innovation, which means that with innovative behaviour, something new is produced. The term 'new' does not necessarily mean that it must be original; rather, it can be novelty by modifying the existing ones which can be beneficial. It was also further explained that innovative behavior is formed from creativity and risk-taking behavior. Creativity is the ability to develop new ideas, consisting of three aspects, namely expertise; flexible and imaginative thinking skills; and internal motivation. Meanwhile, risk-taking behavior is the ability to push new ideas to face obstacles which confront them; therefore, risk-taking behavior is a way to transform the creative ideas into reality.

The behavior may also arise from the necessity; therefore, lecturers who behave in innovative manner will provide what their students need, not limited to what they know. Lecturers who behave innovatively will also answer any challenges or obstacles in their works. For instance, the lecturers are currently required to publish scientific papers on Scopus-indexed journals. For this purpose, the government provides opportunities by rewarding who have published papers of research in internationally indexed journals. Accordingly, the creative lecturer will grab the existing opportunity and turn it into a real work. Thus, by possessing the innovative behaviour, lecturers who carry out tasks with full creativity dare to take risks in experimenting to try something new. The following paragraph is an interview result with participant E,

> "Innovative behavior can only be performed by intelligent people. It is because innovative behavior consists of two elements, namely creative and dare to take risks. Having a creative idea without courage cannot be said to behave innovatively".

Subsequently, second participant (T) explained that the level of innovative behavior of lecturers varies according to particular university's classifications. For advanced universities, lecturers are regarded to have innovative behavior if their works are widely recognized. Innovative behavior means it can produce something creative which benefits the community. For example, they invent a tool which can assist small and medium

enterprises' operation, rather than from the academic perspectives. The following passage is an interview result with participant T,

> "Innovative behavior is observed from what someone has done. Is he able to produce a work, copyright which is useful for people in general? For example, Pak Dede Martino, a lecturer in Faculty of Agriculture, Unja. Although he has not yet gained a doctoral degree, his work has been widely used by many people and has been patented. The most recent tool he invented is an electric canting for batik-making".

Furthermore, the third participant (Sy) explained that innovative behavior is manifested in the form of real and down-to-earth actions, not restricted to the concept of creative ideas which have not yet materialized and is still imaginative in nature. The following are excerpts of interview with participant Sy.

> "It has not been said to be innovative until the creative ideas have been implemented. For instance, there are a myriad of creative ideas for creating various activities or software applications. But, if they have not been implemented in a reality, they cannot be called innovative yet".

The fourth speaker (An) explained that the innovative behavior was seen from a scientific insight that someone had but could be portrayed as a role model. This means that innovative lecturers are lecturers who are able to encourage their students to be innovative by turning a concept into a concrete result. The following is an interview with participant an:

> "Innovation is a keyword for entrepreneurs. Innovative lecturers are those who have the spirit of entrepreneurship and are able to become role models for their students to encourage them to be innovative "

In line with the opinion of the second participant (Sy), the fifth participant (J) thought that innovative behavior means being able to create something and implement it. During the Industrial Revolution 4.0, when all are automated, what distinguishes humans from robots is that humans have innovation, while robots are innovative products but cannot carry out innovative behavior. The following is an interview with participant J,

> "Innovation belongs only to humans, not robots. In the era of industrial revolution 4.0, the humans' role still outperforms robots. Humans can create technology and apply it".

Meanwhile, the sixth participant (O) argued that innovative behavior does not always mean to create new products. Instead, using a new technique in teaching is also considered

innovative behavior. Lecturers who are able and willing to implement new ideas, practices and models in teaching activities can also be regarded as those with innovative behavior. The following paragraph is result of interview with Participant O.

> "... For example, teaching using the latest journals, instead of being monotonous using traditional lecture methods can also be regarded as lecturers with innovative behaviour".

The seventh participant (Az) argued that the innovative behavior of lecturers is related to their performance. It is more directed to the results of research and community service that they perform since not all lecturers, especially in the private sector, are able to innovate in conducting researches and community service. It is now particularly the case that a university's ranking is influenced by the number of lecturers' journal publications both in a national and international scale.

> "If someone is able to make research and service with new ideas, they are innovative," concluded participant (Az).

The eighth participant (K) argues that the innovative behavior of lecturers can be seen from their disciplined attitude at work, willing to find information themselves to do something creative. Thus, the innovative lecturer must have intellectuals, understand how to use IT to find new information and opportunities.

> "The innovative lecturer has intellectuals and masters IT for self-development. So being innovative does not mean waiting for the leadership or the university, but starting from their own for self-development and produce creative works, "said Participant K.

The ninth participant (R) also supported Participant K's opinion that the strongest power for innovative behavior starts with oneself. But it also depends on individual demographic categories, such as age. The age of senior, innovative behavior has been reduced, because senior researcher's enthusiasm has usually declined.

> "The innovative behavior of the lecturer is more directed towards research and service activities, rather than just teaching. Because teaching already has standards. Research and dedication require more creativity," explained participant R.

From the opinions of the nine participants, a recapitulation can be made that the lecturers' innovative behavior is characterized by:

Table 2: *Characteristics of lecturers' innovative behavior*

No.	Characteristics of lecturer's innovative behavior
1	Creative and risk-taking
2	Be able to create useful work
3	Implement creative ideas
4	Be able to become a role model
5	Create something and implement it
6	Use new techniques in teaching
7	Be able to conduct quality research and service
8	Have intellectuals and competency in IT for self-development
9	Reflected from the research and service activities they carry out

Looking at Table 2 above, the innovative behavior of lecturers can be characterized into 3 aspects as follows:

1. Be able to carry out tridharma activities in the form of teaching with new and creative methods;
2. Be able to carry out research activities with creative ideas;
3. Carry out community service activities by producing real and beneficial outputs.

Therefore, in order to behave in an innovative manner, creativity is required to invent something new and have courage to implement it, willing to develop and improve self competences.

3.2 Driving Factors of Innovative Behaviors

Regarding the driving factors of innovative behavior, the first participant (E) explained that innovative behavior is influenced by the internal factors of the lecturers themselves, such as types of personality, willingness and ability; and external factors, such as leadership, support for innovation, workplace demands and organizational climate. These two aspects are interrelated as a driving factor of innovative behavior. For example, when there is a willingness to innovate, but it is not supported by the leadership and the organization; as a consequence, the innovative behavior will not optimally coexist. In university's perspective, stimuli for the innovative behavior of lecturers may require several steps, namely the role of leadership, support for innovation in the form of supporting infrastructure and clear work targets which will become demands in the workplace. A lecturer can behave innovatively because of demands from his/her works, knowing that his/her innovative behaviour will be appropriately rewarded. The following passage is the excerpts of interviews from participant E:

> "...influenced by internal factors originating from their own individual aspects of lecturers and external factors within the respective university. Therefore, from

external factors, the leader is responsible for stimulating lecturers' innovative behavior".

Meanwhile, the second participant (T) argued that innovative behavior is more influenced by the organizational culture which has been created in their respective university's environment. When there is alive the organizational culture for innovation, the academics will be motivated to innovate. Thus, the role of leadership is only as a trigger. So, to stimulate innovative behaviour, an innovative work culture should be created, thus, a willingness to innovate will emerge from individuals as stated by participants T.

"When the innovative culture is created, the leader's role is only as a trigger".

The third participant (Sy) argued that to stimulate innovative behavior, the supportive academic atmosphere which provides a place for innovative lecturers must be created.

"There should be an academic atmosphere which encourages people to innovate," explained by Participant Sy.

The fourth participant (An) elaborated the role of the leadership in stimulating lecturer's behavior, including providing support for innovation, giving rewards for those who are innovative, providing facilities needed to innovate, and assigning tasks or positions to the right people. A leader who does not behave innovatively will result in poor stimulation for innovative behavior. Eventually, the participant emphasized,

"The innovative behavior of the leadership will influence the similar behavior of individual employees"

Meanwhile, Participant J suggested that the first stimulus initially comes from oneself. However, without the support of all parties, creative ideas would later turn to imagination. Whether leaders have a powerful influence on stimulating greatly depend on the individual commitment of the employees themselves. The Participant gave an example:

"In the implementation of paperless system in Unja, some faculties have applied it even though there are no instructions from the leadership. On the other hand, other faculties have not yet implemented it even though the software application has been prepared. So, it again depends on each of people's commitment"

The sixth participant (O) explained that to stimulate innovative behavior of lecturers, in addition to the role of the leadership, there must also be provision of infrastructure to support creativity, such as financial support and commitment from the leadership.

"Facilities and infrastructure, among others comfortable classrooms with appropriate numbers of students, pleasant lecturers' workplaces and a excellent

internet network. In addition, financial support for creativity programs is a stimulus for innovative behaviour"

The seventh participant (Az) asserted that the leader is not the only one who has to stimulate the lecturer to behave innovatively. Instead, the lecturer himself must also be self–motivated or willing to innovate. The participant explained,

"On one hand, the leadership has offered various research schemes; on the other hand, lecturers are not interested. It must be useless and there will not be innovative behaviour"

Furthermore, the eighth participant (K) suggested that innovative behavior should begin with a stimulus, a good one will stimulate a good response. The stimulus comes from oneself and from the leadership. The leaders provide lecturers support to innovate both funds and rewards. Subsequently, the lecturers also have the competence to innovate personally.

"Financial support from the leadership, willingness and ability of the lecturers themselves are the stimuli for innovative behavior"

In line with the opinion of the eighth participant (K), the ninth participant (9) argued that innovative behavior must initially originate from oneself. Besides having the competence and commitment, they must also possess confidence.

"The role of the leadership is to nurture the lecturers's confidence in order that they are also able to innovate. They are comparable to those of more advanced universities"

Based on the nine participants' opinions, it can be summarized the driving factors of innovative behavior of lecturers as follows:

Table 3: *Summary of Lecturers' Innovative Behaviors*

No	Driving factors of lecturers' innovative behavior
1	Internal and external factors
2	Established innovative working environment
3	Academic atmosphere
4	Recognition and reward from the management
5	Commitment to universities
6	Funding and infrastructure
7	Self motivation
8	Self competence
9	Self confidence

From the summary table, it can be concluded that the driving factors for innovation may come from both internal and external sides of the lecturers. The internal side may comprise self-willingness, self-commitment, motivation, self-competence and self-confidence. Meanwhile, the factors from outside of the lecturers may arise from leadership behavior that supports the generation of innovative behavior of lecturers by creating innovative culture of the workplace, financial support, facilities, infrastructure, and rewards. In the discussion, the majority of the participants admitted that internal factors were more dominant to stimulate innovative behavior based on their experience in their respective working area.

4. Discussion

Based on the record of FGD results with the participants, it shows that the lecturers' innovative behavior is reflected in their behavior in carrying out their duties and obligations as lecturers in teaching, conducting research and community service using new and creative breakthroughs. For example, teaching by inviting students to solve real-world problems or successfully guiding students to become studentpreneurs. This means that lecturers are free to express themselves in using teaching methods as long as they do not violate the agreed study learning plan.

However, majority of the participants regarded that innovative behavior is more perceived as the output or real work they provide, such as inventing a device, software application, method or anything which is directly beneficial to the community. Innovative behavior can also be viewed from the number of research publications. Meanwhile, in their perception, teaching and learning process is not regarded as innovative behavior since these activities have standard of procedures and are regarded as main duty of each lecturer. In fact, innovative behavior is not necessarily defined as creating new products. Yuan and Woodman (2010) argued that innovative behavior is all individual activities which lead to creation, process and application/implementation of new ideas related to how to do something icluding new ideas of product, technology, procedures or work processes aiming to enhance the effectiveness and success of an organization. Similarly, in line with the explanation of the sixth participant (O), teaching in such a way, different from the previous methods is also considered an innovative behavior even though in such a case, it is not publicly known as an innovative lecturer.

Essentially, innovative behavior, as perceived by the participants, entails the implementation of creative ideas that lead to outputs reflecting novelty. However, this does not always imply absolute originality, as innovation is context-dependent and influenced by temporal and spatial factors. What is considered innovative in one context may already be well-established in another. This aligns with previous research indicating that innovation involves both initiation and implementation (Jog & Hartog, 2007). Initiation refers to the process of generating creative ideas, while implementation involves the realization of these ideas (King & Anderson, 2002). Consequently, innovative behavior is a multidimensional construct that includes both idea generation and execution. While innovative behavior often originates from lecturers' intrinsic motivation, capabilities, and confidence, external factors also play a crucial role in fostering innovation. Leadership behaviors that encourage innovation—such as financial support, provision of infrastructure, recognition, incentives, an academic atmosphere conducive to creativity, and a stimulating work environment—significantly influence the emergence of innovative behavior.

Innovative behavior emerges from the interaction between internal and external factors experienced by employees. Higher education institutions play a vital role in fostering lecturers' innovative behavior by cultivating an academic culture that supports innovation. Several strategies can be employed to achieve this. One crucial approach is encouraging intellectual freedom and experimentation in teaching and research methodologies (Rizalullah et al., 2024). When lecturers have the autonomy to explore new pedagogical and research techniques, they are more likely to develop creative solutions and novel approaches in their fields. Additionally, universities must provide access to facilities and technology that support innovation, such as international journal databases, advanced laboratories, and research funding opportunities (Victor & Babatunde, 2014). These resources enable lecturers to stay updated with the latest advancements and contribute meaningfully to their disciplines. Furthermore, offering financial incentives for lecturers who secure external research funding beyond university-provided grants can serve as motivation for them to engage in high-impact research projects (Safriyani & Asmiyah, 2023).

Facilitating collaborations with industries and small and medium enterprises (SMEs) is another important strategy to ensure that innovations have practical applications in society (Audretsch et al., 2023; Guimarães et al., 2021). By partnering with external organizations, universities can create an environment where research and

innovation are aligned with real-world needs. Implementing competency development policies through workshops and training focused on innovation in teaching, research, and community engagement also plays a key role in fostering an innovative academic culture (Darmawan et al., 2023). These professional development opportunities help lecturers stay updated with the latest pedagogical strategies and research methodologies, enhancing their ability to contribute creatively to their fields. Moreover, promoting digital technology integration in learning—such as e-learning platforms, simulations, and artificial intelligence (AI)-based tools—can further support innovation by enabling more dynamic and effective teaching and research practices (Cardona et al., 2023; Japee, 2023).

Additionally, higher education institutions can build reward and motivation systems that recognize and appreciate lecturers who contribute innovative ideas (Urdabayev et al., 2024; Victor & Babatunde, 2014). This can be achieved through academic awards, career advancement opportunities, and formal recognition of their contributions. Establishing performance-based remuneration models, such as special allowances for lecturers who develop patents or research-based startups, can also serve as a strong incentive for faculty members to engage in innovative activities. Such initiatives help create a culture where innovation is valued and rewarded, encouraging lecturers to continuously push the boundaries of their disciplines (Rotty et al., 2024).

To optimize innovation-driven community engagement, universities should integrate research and innovation into community service programs (D'Este & Robinson-García, 2023). For example, lecturers can assist SMEs by introducing new technologies and business strategies that improve efficiency and competitiveness. Encouraging interdisciplinary approaches to solving societal challenges can also lead to more comprehensive and impactful solutions, as combining expertise from various fields often results in groundbreaking innovations.

Finally, fostering research and innovation teams can be instrumental in enhancing lecturers' innovative capacity (Gawade, 2019). One way to achieve this is by establishing cross-disciplinary research groups focused on real-world problem-solving (Heitzmann et al., 2021). These teams can collaborate on projects that address pressing societal needs, thereby increasing the relevance and impact of academic research (Jan, 2019). Providing mentoring for the commercialization of research outputs is another essential strategy, as it ensures that innovations developed within universities are effectively translated into industry or societal applications (Nundulall, 2010; Yani et al., 2024). Moreover, increasing student involvement in innovative projects can help cultivate a culture of

creativity and research-driven problem-solving (Chen & Chang, 2024; Fredagsvik, 2023; Jaenudin et al., 2020). When students actively participate in research and innovation, they do not only gain valuable skills but also contribute fresh perspectives and ideas.

By implementing these strategies, universities can create an ecosystem that supports lecturers' innovative behavior, ensuring that innovation becomes an integral part of their academic and professional responsibilities. Through a combination of internal motivation, institutional support, and external collaborations, higher education institutions can cultivate a culture that nurtures continuous innovation, ultimately benefiting both academia and society.

From an organizational culture perspective, innovative culture refers to a system of values, beliefs, attitudes, and assumptions that support and facilitate innovation. The socialization of an innovative culture within universities indicates institutional commitment to fostering and recognizing creativity and innovation (Dobni, 2008). Employees are more likely to pursue innovation when they perceive that their organization values and supports their creative contributions. Ultimately, while external factors play a significant role in encouraging innovative behavior, internal factors such as intelligence, imagination, and creativity remain the primary drivers of innovation (Mumford, 2000).

Thus, for universities to fully cultivate innovative behavior among lecturers, they must focus not only on external enablers but also on fostering an environment where internal motivation and creativity can thrive. The interplay between individual and institutional factors will determine the extent to which innovation is embedded within academic culture.

Conclusions

Innovative behaviour has two aspects, i.e. generation and implementation of creative ideas. The innovative behaviour of lecturers is reflected in the novelty of the teaching methods, creativity in research, and beneficial outputs in community service. The lecturer’s innovative behaviour can be performed through leadership behavior within an innovative working environment, vibrant academic atmosphere, recognition, reward, financial support, facilities and infrastructure. However, the behaviour of lecturers also depends on some of their internal factors, such as willingness, competence, commitment, courage and confidence in self ability.

As the implication, the research results put emphasis on the importance of the objectivity during the process of new lecturers recruitment is carried out. It is because that internal factors of lecturer are innate, influenced by individual mindset, perception, character, attitude and personality. Therefore, being an innovative lecturer should set forth at the early stage during recruitment process of new lecturers by conducting objective psychological tests. Given a good procedures and methods, a qualified input will result in a good output and outcome.

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