



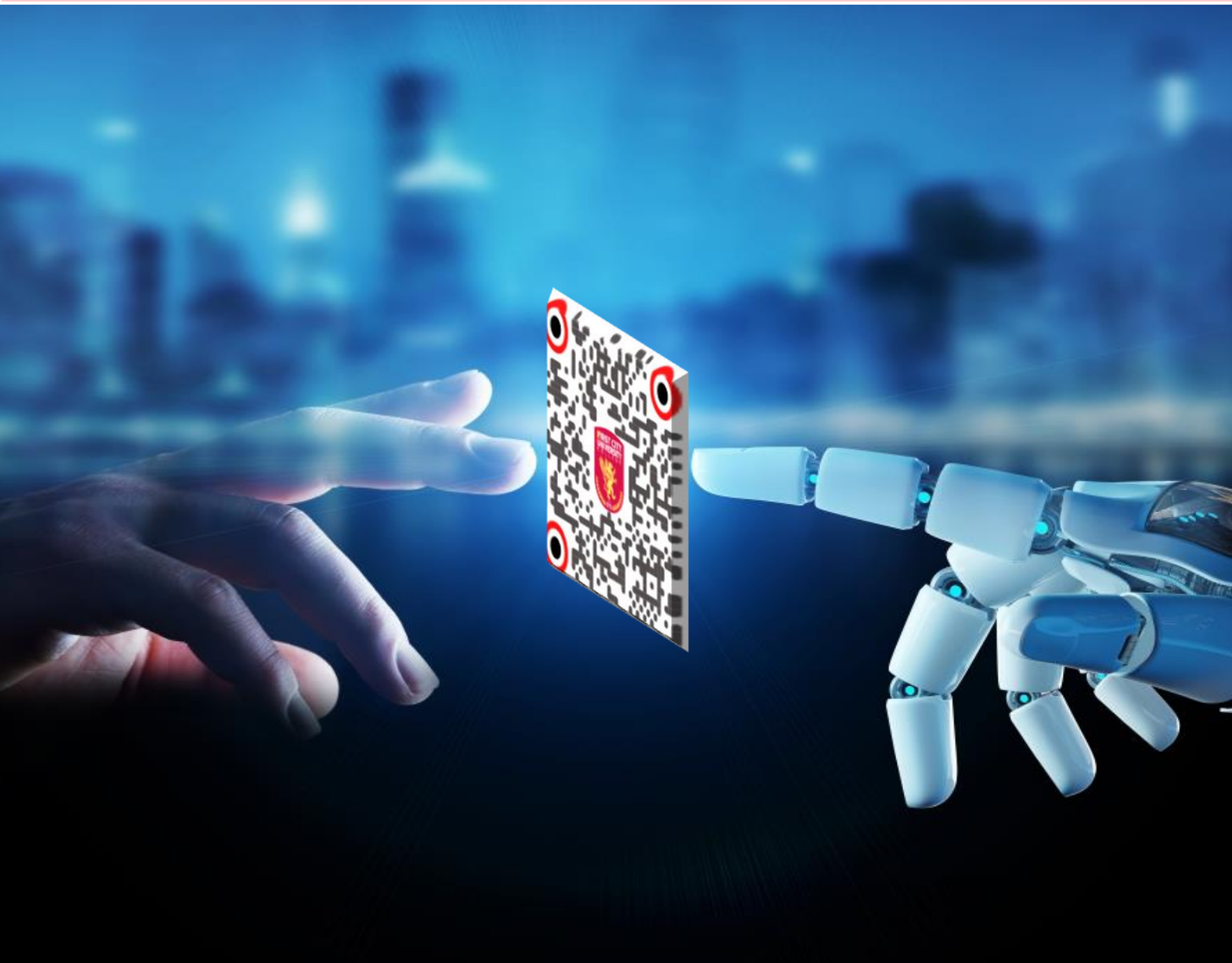
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Email: [lewis.leong@firstcity.edu.my](mailto:lewis.leong@firstcity.edu.my)

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## **PREFACE**

Welcome to the Journal of Business, Design & Technology, a platform dedicated to the exploration and dissemination of cutting-edge research in business, accounting and finance, hospitality and mass communication to design and built environment, engineering, and computer science and technology. As the preface to this journal's latest edition, I am pleased to introduce a collection of articles that reflect the passion, dedication, and intellectual curiosity of our contributors.

At the Journal of Business, Design & Technology, we believe in the transformative power of knowledge and the importance of fostering a community of scholars, researchers, and thinkers who push the boundaries of human understanding. This journal serves as a conduit for the exchange of ideas, the presentation of groundbreaking research, and the collaboration of individuals from diverse backgrounds and disciplines.

In the pages that follow, you will find a diverse array of topics and studies, ranging from business, design to technology. These articles underscore the multidisciplinary nature of our field and the global reach of our contributors. We are committed to maintaining the highest standards of quality and rigor in the research we publish.

Our heartfelt appreciation goes out to our authors, whose work represents the culmination of tireless research, rigorous analysis, and a dedication to advancing knowledge in business, design and technology. We are also deeply indebted to our dedicated team of reviewers, whose expertise and thoughtful evaluations ensure the integrity and excellence of the articles presented here.

To our readers, we extend our warmest gratitude. Your curiosity, engagement, and support are the lifeblood of this journal. We invite you to explore, question, and reflect upon the research contained within these pages. It is through your engagement that we continue to thrive and evolve as a scholarly community.

The Journal of Business, Design & Technology stands as a testament to the collective efforts of scholars and researchers from around the world. It is through this journal that we contribute to the broader discourse in business, design and technology, shaping the future of our field one publication at a time.

As we embark on this intellectual journey together, I encourage you to embrace the spirit of inquiry and discovery that defines our community. The pursuit of knowledge is a shared endeavor, and we are grateful to have you as part of our community.

Thank you for your continued support, and I hope you find this edition of The Journal of Business, Design & Technology to be a source of inspiration, insight, and scholarly enrichment.

Sincerely,

Dr. Leong Wee Phin  
Editor-in-Chief  
The Journal of Business, Design & Technology

## CHIEF EDITOR'S NOTE

Dear readers and contributors,

It is with great pleasure that I introduce the latest issue of The Journal of Business, Design & Technology, a platform that continues to be at the forefront of advancing knowledge in business, design and technology. As the Chief Editor, I am honored to present to you a collection of outstanding research articles that demonstrate the commitment of our authors to pushing the boundaries of scholarship and inquiry.

This issue brings together a diverse range of research topics, each offering fresh perspectives and insights into the ever-evolving landscape of business, design and technology. From Using Gamification for Business Related Modules, Practical Range of Ozone Concentration Simulation for Transmissive Gas Cells and Social Media Influencer, our contributors have showcased their dedication to rigorous research, innovative methodologies, and thoughtful analysis.

As the Chief Editor, I am continually impressed by the caliber of work that graces our pages. The process of peer review is central to maintaining the high standards that our journal upholds, and I extend my sincere appreciation to our dedicated team of reviewers who have rigorously evaluated each submission. Your expertise and commitment to excellence are invaluable to our publication.

I would also like to express my gratitude to our authors, whose dedication to their respective fields enriches the intellectual discourse within our community. Your research, dedication, and passion are what make The Journal of Business, Design & Technology a respected platform for the dissemination of knowledge.

In addition to our contributors and reviewers, I would like to thank our readers for your continued support. It is your engagement with the content we publish that drives us to maintain our commitment to scholarly excellence.

The Journal of Business, Design & Technology stands as a testament to the collaborative efforts of scholars, researchers, and academicians from around the world. It is through the exchange of ideas and the dissemination of knowledge that we continue to make meaningful contributions to business, design and technology.

As we immerse ourselves in the thought-provoking articles presented in this issue, I encourage you to engage, question, and reflect. The pursuit of knowledge is an ongoing journey, and it is through the collective efforts of our scholarly community that we continue to progress.

Thank you for your continued support, and I hope you find this issue of The Journal of Business, Design & Technology as enlightening and inspiring as I do.

Sincerely,

*Dr. Leong Wee Phin*

## CONTENTS

| <b>BUSINESS</b>   | <b>Page</b> |
|---|-------------|
| 1. The Academician's Motivational Experiences in Handling Classroom in Private Institution<br>- <i>S Komlavathy</i>   | 1           |
| 2. Impact of Transformational Leadership on Organizational Performance Through Employee Engagement<br>- <i>Rowence R Y Tan</i>  | 16          |
| 3. Factors Influencing Purchase Intention on Private Label Brands (PLBs) of FMCG Products in Malaysia<br>- <i>Jackie C F Wong</i>                                       | 31          |
| 4. A Study on the Effect of Governance Factors Towards Financial Performance in Petroleum Industries During Pre- and Post-Covid in Malaysia.<br>- <i>Joyce J L Fong</i> | 43          |
| 5. Factors That Affect the Purchase Intention Towards Luxury Brand Among Millennials<br>- <i>Eada Y L Ting &amp; Vincent E K Wee</i>                                    | 60          |
| 6. Local Government in Malaysia: The Changing Landscape<br>- <i>E H Lim</i>   | 77          |
| 7. Internal Quality Assurance at an Academic Institution: Pain versus Gain?<br>- <i>R Yanti &amp; H L Hing</i>  | 83          |
| <br><b>DESIGN</b>   |             |
| 1. Social Media Influencer -The 'following' strategy<br>- <i>Vincent E K Wee</i>  | 85          |
| 2. Sentiment Analysis in Media and Communication Research: The Concept of Media Influences Sentiment Builds Up<br>- <i>S Nursyamira</i>                                 | 92          |

---

## **TECHNOLOGY**

1. “Plasma Focus Ion Beam Properties - Validation of Lee Code Computations by Faraday Cup Measurements” 102  
*- S Lee , V Damideh, O H Chin, S H Saw, P C K Lee, R S Rawat & A Singh*
2. Practical Range of Ozone Concentration Simulation for Transmissive Gas Cells 115  
*- Tay Ching En Marcus , I Mohd Haniff, N Nor Hafizah, A Asrul Izam & D Michael*
3. Systematic Review of Using Gamification for Business Related Modules in Higher Education. 122  
*- R Saraswathy & S Komlavathy*



# The Academician's Motivational Experiences in Handling Classroom in Private Institution

Komlavathi Subramaniam

*Faculty of Business, Hospitality and Communication*

*First City University College, Bandar Utama, 47800 Petaling Jaya, Malaysia*

## **Abstract**

The study aimed to provide an in-depth understanding of academicians' motivation in handling classrooms. Classroom handling is one of the most important factors that gives an impact on teaching and learning. However, good classroom management and student achievement cannot happen without academicians' motivation. The purpose of this research is to study the motivational experiences of academicians in handling classrooms. The study was adopted as a qualitative research method and a single case study approach was used. The data of the study were collected from two participants using structured interviews and observation. This research identified 2 themes and 6 sub-themes. The first theme of the study is 'Motivation' and the sub-themes under these themes are 'passion', 'positive attitudes', 'Institution support', and 'maintain motivation. The second theme is 'Handling classroom' and the sub-themes are 'challenges' and 'approaches. The academicians are motivated by their passion, students' positive attitudes as well as institutional support in handling the classroom despite there being challenges. This research shows that there is an influence of work motivation on academicians' performance.

**Keywords:** Motivation; Handling classroom; Academicians

## **Introduction**

Academicians play an important role in the contribution of teaching and learning excellence. Motivated academicians are more likely to motivate the learners in the classroom for the best performance (Nyakundi, 2012) as well as for effective classroom management by putting more time and effort into teaching (Daumiller, Stupnisky & Janke, 2020). When academicians are highly demotivated, the impacts are on achieving the educational goals and it tends to perceive their student's motivation level low.

Moreover, the quality of higher education academicians is very important to society because effective teaching in higher education is linked to the quality of a student (Dias et al., 2021). Malaysia Education Blueprint 2015-2025 (Higher Education) mentioned that, with the support of the academic community, the Malaysian higher education system has achieved global recognition in institutional quality (Ministry of Education [MOE], 2013). The quality of the Higher Learning Institutions of Malaysia can only be high standard as the quality of academicians, researchers, institutional leaders, practitioners, and academic support staff. This shows how important an academician is to the institution as well as to the country.

Furthermore, motivated academicians are will

ing to use various techniques and strategies to keep the students focused and productive in classrooms. According to Boru (2018) stated “teachers who are responsible for coping with student’s diversity and limited opportunities, despite unfavourable environmental factors, should be taken into consideration keeping their motivation in terms of sustainable development goals of the country” (p. 761). Boru (2018) also mentioned academicians’ motivation is an important component in ensuring the handling classroom effectively. On top of that, Han, Yin, and Wang (2015) mentioned that concerning teacher motivation factors, the learning outcome of students is dependent on teaching quality and effectiveness in terms of teaching styles, teacher approaches to teaching, and teaching practices.

In providing effective and quality teaching and learning, institutions must ensure academicians are continuing their services with motivation. There are a lot of factors that impact the motivation of academicians in higher education to teach, such as, the requirement of extensive research (Visser-Wijnveen et al., 2014), no appreciation, low salary, delay in paying salary, low remuneration (Victor & Babatunde, 2014), paperwork, students, national education policies, colleagues and as well as better working hours (Boru, 2018). Research by Harding and Sweeney (2013) found as the teaching load increases, the motivation to teach declines and the personal interest in students also decreases.

### *Problem Statement*

Research on academician motivation has been analysed over the past decade. An Academician’s performance is an important aspect of achieving the educational goals of an educational institution (Dais et al., 2021). There are many factors and reasons that motivate academicians to perform efficiently and effectively (Guay, 2022). Every people have their reasons why they are involved in educational fields, such as an increase in personal income, higher living standards, intellectual development, and social upbringing (Boru, 2018). Hans and Yin (2016), mentioned that intrinsic, altruistic, and extrinsic motivations are the main reason why academicians choose to teach. According to Shamina & Dr. Mumthas (2018), the teaching profession is complex and challenging for a beginner and experienced academicians and requires academicians to be effective in balancing the implementation and maintaining order while teaching.

As we know lecturers are valuable assets for a college as a driving force for the learning process and a key element in determining the success of higher education. “Lack of motivation among teachers has been manifested in teachers’ unwillingness to participate, absenteeism, late coming, lack of training, non-stimulating teaching, and resist contributing and unhelpful attitudes” (Jackson, 1997). Academician work motivation will impact the academician’s ability to perform, the individual condition as well as the environment (Dais et al., 2021). Therefore, academicians’ motivation is vital to improve the enthusiasm to teach, and therefore the learning process will be more effective as well as will improve the performance of the institution.

The finding of this study will be important to the institution and the ministry of education to get to know the factor affecting academician motivation in handling classrooms effectively. This also helps the academician to decide to adjust to the prevailing situation to improve the performance of students. At the same time, the management also can come up with better

ways of improving the academician's motivations and give a hand in helping the academician with effective classroom management. This research is to provide the understanding that is applicable to all higher education academicians and also to identify how different the working environment of an academician. At the same time, it will stop the false assumption or judgments on academicians' performance and motivation, and this will help the institution and the other stakeholders to understand the academicians' roles and their situations better

However, only a limited investigation on motivational experiences in handling classrooms among academicians in higher education has been done. Besides, most of the motivational research has used quantitative research methodology as well as the sample used is mostly primary and secondary school teachers. Moreover, based on the explanation given above on motivation, can be seen that motivated academicians be successful individuals and continue to make every effort to achieve. Therefore, the research on the motivational experiences of academicians is very important as this can affect the performance of the academicians and indicates the interaction between the academician's "attitudes, needs, perceptions and the decisions made during carrying out their duties" (Hanggara, 2018). Accordingly, the purpose of this research is to study the experiences in handling classrooms of private college lecturers in a Private Institution of Higher Education, Kuala Lumpur by considering the aspects of motivation.

### *Research Objectives*

- i. To find the aspects that motivate academicians in handling classrooms in a private institution of higher education in Kuala Lumpur, Malaysia.
- ii. To identify the approach used by academicians in handling classes based on their motivational experiences in a private institution of higher education in Kuala Lumpur, Malaysia.

### *Research Questions*

The study was guided by the following research questions:

- i. What aspects motivates academicians in handling classroom in Private Institution of Higher Education in Kuala Lumpur, Malaysia?
- ii. How do academicians handle the class based on their motivational experiences in a Private Institution of Higher Education in Kuala Lumpur, Malaysia?

### **Literature Review**

Boru (2018) found, 'Motivation leads people to act in order to reach their goals and to make efforts toward their aims.' Teachers' motivation enhances classroom effectiveness and improves schools. Lack of motivation among academicians is believed to have affected the performance of students. Motivated and committed staff can be determining factors in the success of an organization (Nyakundi, 2012). Ihtiyaroglu (2019) suggested increasing academician motivation levels and creating an environment in schools where academicians feel valued. The finding of T. Haruthaithanasan (2017) explained, that administration reform focuses on decentralization and good governance, and instruction reform focuses on

constructivist learning and improving the achievement of students increasing academician motivation. Though, if the reform is seen as an extra workload for academicians, this could reduce motivation.

Research by Ozen & Yildirim (2020) defined classroom management based on academician's perspectives as a skill in creating an effective learning environment. Handling a classroom is how an academician provides opportunities for students to learn everything by organizing students, space, time, and materials so that effective learning can take place (Nagler, 2016). Nagler 2016 also mentioned that 'effective classroom management and positive classroom climate creation are essential goals for all teachers. In certain circumstances, academicians need to handle unexpected issues or events, such as discipline (Nagler, 2016). Several research indicates that teachers with good control of the class and shows care for the students have higher cognitive achievements and have positive attitudes in the classroom.

According to Kumar & Liu (2019), classroom handling is an art that varies from academician to academician even though there are common classroom practices, every single academician has their own style of managing the classes. Every academician has their way of handling the classroom, creating the setting, decorating the room, arranging the chairs, speaking to the students, and managing their responses, developing rules, and communicating the rules to the students (Nagler, 2016). Academicians in handle the classroom more effectively, they must understand their students' interests and styles of learning. Handling the classroom in an effort of building up a conducive and interactive learning environment that motivates students to learn based on their abilities (Iswan et al., 2020)

## **Theoretical Framework**

### *Self-determination theory*

Self- Determination the motivational theory was developed by Deci and Ryan in the year 1985. According to Ryan & Deci (2020), Self-determination theory (SDT) focuses on positive growth, particularly the desire in contributing to society as well as understand the challenges around them. SDT is desired for personality development within the social context and if the three basic psychological needs, autonomy, competence, and relatedness are achieved, optimal performance and personal growth will occur (Wang & Liu, 2008). If the academician's motivational needs are supported, they are happier and more willing to challenge and engage in new activities (Brenner, 2022).

### *Autonomy*

Wang & Liu (2008) defined autonomy as "the need to feel ownership of one's behaviour". It can be argued that a person needs to feel control over their own behaviour, view, and goals. According to Brenner (2022), academicians "need the freedom and space in exploring how practices align with their existing values, beliefs, and practices about teaching. In this research, the finding indicates the academician's autonomy needs are fulfilled when they are allowed to make changes and make amendments to their teaching strategies and students' assessment according to the student need by the management.

*Competence*

It can be explained as the need of a person in mastering a task or learn a new skill that is needed for success and to achieve their goals. Brenner (2022), identified that the academicians’s competence is supported when they are allocated with reasonable workload and provided training for self-development. As well as positive feedback from management, colleagues and students provides guidance and enhances their teaching practices. Viewing this research from SDT perspectives, academicians use less classroom controlling techniques, let students discuss and decide on their own problems and solution, and provide challenging and interactive classroom activities with had high level of perceived competence for teaching. Research also indicates that positive feedback and evaluation from students and management increase the level of competence.

*Relatedness*

Whereas relatedness is the need of a person in experiencing a sense of belonging to others. In this research, the finding indicated the relatedness through how the academicians respond to the student’s needs and problems, the interaction between academicians and students by providing one-to-one consultation and the relationship with the management and the support and encouragement from the peers support their sense of relatedness (Brenner, 2022).



Figure 1: Conceptual Framework

**Research Method**

*Research Design*

A qualitative research method, single case study approach was used to explore the motivational experiences of academicians in handling classrooms. Qualitative research is a social action that interprets experiences to understand the social reality of an individual as well as to explore how and why certain phenomena occur in a particular setting. A case study approach is a type of design qualitative research to explore a real-life, contemporary bounded system, or multiple bounded systems over time, through detailed, in-depth data collection involving multiple sources of information (Creswell et al., 2018). The case study approach is the best way to explore the uniqueness of an individual as well as focus on the participant’s point of view (Mohajan, 2018). Yin (2014) describes a case study as an “investigation of a contemporary phenomenon within a real-life, contemporary context or setting and collect direct evidence” The primary purpose for using a case study approach is to explore the

motivational experiences of academicians in handling classrooms. Since this is a single case study and one location basis researcher focuses on the issue of the motivational experiences of academicians, the research was done at only a Private Institution of Higher Education, in Kuala Lumpur, Malaysia to illustrate the issue (Creswell et al., 2018; Gustafsson, 2017). According to Gaya & Smith (2016), a single case study does provide compelling data to test theories and for an in-depth investigation.

### *Research Participant*

In this study, purposive sampling methods were used. According to Creswell et al. (2018), purposive sampling in case studies to select unusual cases in collective case studies and employ maximum variation as a sampling strategy to represent diverse cases and to describe multiple perspectives about the cases. Additionally, purposive sampling techniques are also called judgment sampling whereby intentionally choose a participant because of the qualities of the participants (Etikan, 2016).

In selecting the research participant there were few criteria were used. The first criteria were someone who participated voluntarily because this can prevent withdrawal while the data collection happens. other than voluntary participation, a good quality relationship between the researcher and the research participant is also important for the reason in collecting information-rich data. This is because the research participant has the trust and feels convenient in providing information. Another criteria for research participants are academicians who have experience in teaching for more than 2 years. Rice (2019) stated that academicians with more than years of experience are more effective than academicians with no experience. Perhaps, academicians with more than 2 years of experience would be able to reveal their motivational experiences in handling classrooms.

### *Data Collection*

The researcher played a role as the main instrument for this research and the data were collected through in-depth interviews, indirect observation, and document analysis. The research was conducted in a Private Institution of Higher Education, Kuala Lumpur, and this institution was chosen based on the nature and the purpose of this study, easy to access and enter. Moreover, considering the willingness of the academicians to participate in this study. Data was collected from two academicians who were working in a Private Institution of Higher Education in Kuala Lumpur, Malaysia. In justifying the number of study participant selection as only two academicians is based on the fully obtained information on all the important elements being studied as well as it became sufficient and there no new concepts are developed from the new interviews and this named as saturation point or end point (Sargeant, 2021). This shows the sample size is adequate and the interview responses provided in-depth and saturated data which enable me to explore the motivational experiences of academicians. Moreover, there is no specific guideline on how to determine saturation for the purposive sampling method.

The data were obtained over an in-depth interview with the use of interview protocol to obtain data related to the motivational experiences of academicians in handling classrooms by completing 7 open-ended questions. Data was obtained from each participant using a form

(refer to Appendix 1) with two parts which consist of part 1, a structured interview question that includes demographic information such as position, gender, department, years of experience in academic service, years of experiences in this institution, average service hours per week, number of subjects taught (direct) and number of subjects taught (cross-teach). The first page covered demographic information and on the second and third-pages part 2 seven open-handed questions were asked from the participants:

1. How you became involved in the teaching field?
2. Explain your original motivation for teaching these courses.
3. Describe the first academic courses you taught.
4. What kind of rewards influenced your motivation to teach?
5. What are the challenges or issues you face in handling the classroom?
6. What are the approaches you use to handle the classrooms?
7. How do you maintain your motivation in handling class?

There are only 2 face-to-face interviews conducted with academicians as well as replicated recall interviews conducted with the same academicians after 2 weeks of the first interview session. The research participant was informed 2 months before the interview and reminded one week before. Discussed with both research participants and set a suitable day and time for an interview session with them. Each session took about an hour in completing.

Observation protocol and document analysis protocol was used by the researcher in collecting data from various forms of source and to check the data for coherence as well as to compare the data from the interview session with the participant's behaviour during indirect observation. Through observation and document analysis the data from the aspects of motivational experiences in handling the classroom of the research participant has been enhanced by supplementing the missing and incomplete data. The researcher requested a copy of the detailed internal use lesson plan for three different classes as well as a copy of the academician's schedule of the semester. This is because, document analysis is secondary data which able to justify the information collected through the stated types of activity and the strategy used in lecturing. Through the copy of the detailed internal use lesson plan, the researcher will be able to understand the strategy used in handling the classroom. In doing a recall interview after 2 weeks of the first interview one of the classes was selected based on the researcher's convenience and the class hours are chosen for doing interviews with the academicians. The class was selected purposely to do indirect observation and for this reason, the researcher went to the class half an hour earlier and researcher was allowed to be in class while waiting for the academician to finish their class session, the researcher observed the enthusiasm of the academician in handling the class. During the 20 minutes break for students, the recall interview was done.

Researchers make sure the trustworthiness of the interview by making sure no leading questions by having an audit trail. Therefore, every step from the beginning to the end was recorded and strictly adhere to the interview protocols by asking standardized questions to both participants (Carcary, 2009). The researcher also validated the data by conducting recall interviews or in other terms member checking after the first interview data was interpreted. This member checking is to identify the results of credibility (Birt et al., 2016). Triangulation was used in this research because it is important in checking the information provided by the

participant through interview session are not biased and inaccurate (Natow, 2020; Carter et al., 2014). Triangulated using data collection methods which are in-depth interviews, indirect observation, and document analysis.

### *Data Analysis*

In case study research, data analysing is conducted manually using six stages. The first stage is creating and organizing data files. The second stage is to read through the text and form initial codes. Then, in the third stage, describe the case and its context. The fourth stage is to use categorical aggregation to establish themes. The fifth stage is using direct interpretation and the last stage is naturalistic generalizations of what was obtained.

Since ethical principles are very important in qualitative research, the researcher was very sensitive and concerned about doing a face-to-face interview as well as getting the participant's information. The researcher informed the research participant in advance and get the consent to participate. Moreover, the researcher also took into consideration the effect of the research on participants and preserve their dignity (Cohen et al., 2020). Equally the privacy and confidentiality of research participant was given consideration.

### **Findings**

The finding of this research obtains from Participant 1 and Participant 2. Participant 1 is a lecturer for Fashion Design Programme and Programme Coordinator for the Certificate in Design. Participant 1 is 48 years old with 20 years of experience overall in academic services and 18 years of experience in Private Institutions of Higher Education. Participant 1 highest qualification is a Degree in Design. Participant 1 service hours per week are 20-24. Whereas Participant 2 is an English as a Second Language (ESL) and General Studies Subjects (MPU) lecturer. Participant 2 is 34 years old and has 10 years of overall academic service experience with 2 years of experience in a Private Institution of Higher Education. Participant 2 highest qualification is a Master in Education Psychology. Participant 2 service hours per week are 20-24.

The responses to the study questions were progressively analysed using sentence-based content analysis methods. As a result, 6 themes were found. The first 4 themes, 'passion', 'positive attitude', institution support', and 'maintain motivation' address the first research question. Whereas the themes 'challenges' and 'approaches' address the second research question.

### *Motivation*

#### Theme 1: Passion in Teaching

As for the code "interest in teaching" and "childhood ambition" Participant 2 said "becoming a teacher is my childhood ambition and that makes me complete my bachelor's degree in education (TESL). Later, I wanted a career advancement, thus I ventured into lecturing." Participant 1 said "I love teaching and the interest I had in teaching made me involved in the



teaching field. As for the code “make the student understand the content” participant 2 said that “my original motivation is the interest and to make the student understand the content and when the students respond positively towards my teaching style it gave me immense satisfaction”.

#### Theme 2: Student’s Positive Attitudes

As for the code “student’s improvement” participant 1 said “student’s academic achievement is the reward for me that influences my motivation to teach” while respondent 2 said, “the positive reviews from my students on my teaching through Teacher Evaluation sessions and the students high passing rates make me happy and influence my motivation.” This shows that the student’s positive performance and positive feedback towards the academician’s teaching strategy are important for academicians’ intrinsic motivation in handling the classroom. This is because the academician feels a sense of competence in teaching and handling the classroom.

#### Theme 3: Institution Support

As for the code “support and encouragement from institution” participant 2 said, “the rewards that influence my motivation to teach is the institution’s support and encouragement matters to me as well”. Whereas Participant 1 said “the number of subjects and the subject that I can teach allocated to me by SAS as well as the positive review and the feedback influence my motivation. This emphasizes on the importance of assistance from the institution, management, students, parents, and peers to support their sense of relatedness. This associates with great intrinsic motivation and improves the academician’s performance and engagement.

#### Theme 4: Maintain Motivation

As for the theme “maintain motivation” participant 2 said, “I try to amend or change the assignments according to current suitability and apply real-life practices which encourage students to participate actively in class.” Besides, Participant 1 said “when students showed the improvement on their artwork from the lower level improved to better level” This indicates the need for freedom of an academician and space to explore how to practice teaching aligning with their values and beliefs (Brenner, C. A., 2022). When the academician is given autonomy in practicing new methods, strategies, or approaches, academicians are fulfilled with intrinsic motivation, and this encourages them in performing better.

### *Handling Classroom*

Theme 1: Challenges As for code “Distraction”, “Assignment Submission” and “Attitudes and Behaviour” participant 2 said “ since I’m teaching young adults, they have numerous distractions which hinder them from giving continuous attention to the assignment and submission” whereas participant 1 said, “ I have difficulties in handling their attitudes and behaviour in the class and always have an issue in doing assignment submission on time”.

Even though there are challenges in handling the classroom, with a sense of autonomy and support from the institution, academicians are willing to take appropriate action in managing the situations. This denotes the importance of autonomy for academicians.

Theme 2: Approaches As for the theme “approaches” participant 1 said “pay more attention to students with a problem. Deals with students passionately and patiently.” Though participant 2 said “I usually call out and talk to those problematic students in private. I try to be approachable as possible so that students feel comfortable in my class.” This implies, when the academician has a sense of competence, a sense of relatedness as well as the sense of ownership they are greatly motivated and will show a positive effect in performing and will make sure the best for the institution.

|                    |                              |   |
|--------------------|------------------------------|---|
| Motivation         | Passion in teaching          | <ul style="list-style-type: none"> <li>• Interest in teaching</li> <li>• Childhood ambition</li> <li>• Make students understand the contents</li> </ul>   |
|                    | Student’s positive attitudes | <ul style="list-style-type: none"> <li>• Positive response to the teaching styles.</li> <li>• Positive reviews from students through teacher evaluation.</li> <li>• High passing rate</li> <li>• Student’s improvement</li> </ul> |
|                    | Institution Support          | <ul style="list-style-type: none"> <li>• Support and encouragement from the institution.</li> </ul>   |
|                    | Maintain Motivation          | <ul style="list-style-type: none"> <li>• Amend/change assignment according to current suitability</li> <li>• Apply real-life practices</li> </ul>   |
| Handling Classroom | Challenges                   | <ul style="list-style-type: none"> <li>• Distraction</li> <li>• Assignment submission</li> <li>• Attitudes and behaviour</li> </ul>   |
|                    | Approaches                   | <ul style="list-style-type: none"> <li>• One to one talk/ consultation</li> <li>• Be more approachable</li> <li>• Give more attention</li> <li>• Tolerant</li> <li>• Supportive</li> </ul>  |

Table 1: Theme and Subtheme

## Discussion

The primary focus of this research was to explore the motivational experience of academicians in handling the classroom. The result of this study indicates the importance of self-determined motivation in academicians. The finding from this research denotes that an academicians’ motivation towards handling the classroom can be an important indicator of

effective academician performance. The self-determination theory of motivation illuminates the source of academicians' motivation in handling classrooms. Wang & Liu (2008) stated that the more self-determined the academicians are they tend to show good performance and good engagement and value their job performance.

The first research question of this study is to find what motivates academicians in handling the classroom. The study found a variety of motivational components for academicians in handling the classroom such as, the academician's passion, students' positive attitudes, and positive feedback as well as support from the institution's management. Based on the finding of this study, the codes which are related to passion, student performance, positive feedback either from the students or the management, and institutional support, stand out as internal factors affecting academicians' motivations. As for the first research question, the findings are in line with the previous finding of what motivates academicians in handling the classroom effectively. Liu, Li & Zou (2019) found that intrinsic motivation or internal factors can be transformed from extrinsic motivation through academicians' existing value of development, teaching practices, and their feeling about the development. This shows when academicians feel good about doing something they are intrinsically motivated, and this will lead to a sense of accomplishment toward the institution or the student's performance. This reveals academicians' motivation does not affect by external factors. Academicians are grateful to see students learn and participate as well as perform well and this is the academician's best reward.

The second research question is to understand how academicians handle the class based on their motivational experiences. These findings suggest that in facing the challenges in handling the classroom, academicians need to understand the student's interest and their learning styles and preferences. Reeve and Cheon (2021) suggested that academicians with more autonomy support are shown interest in listening to the student's issues, being more responsive to students' questions giving more attention to students and showing more support for students. The most important finding in this study is that when considering their experiences, the academicians pointed out the importance of management support as a motivational factor.

The researcher reviewed evidence signifying that intrinsic motivation relate certainly important to academicians' performance. Based on Han & Yin (2016), academicians' motivation comes from the individuals' intrinsic values to choose and sustain teaching, and several circumstantial factors influence the effort used in teaching. Academicians' autonomy can be supported by the management and peers minimizing the noticeable pressure of appraisal and the pressure of handling classrooms and this will maximize the academician's engagement in voicing out their perceptions. The researcher also found that academicians' competence can be supported by the institution in introducing training, seminars, and workshop and thereby allowing the academicians to expand their capabilities. Further is it important for the institution to provide appropriate tools and feedback to promote attainment and the feeling of effectiveness?

### *Implication*

Another important aspect to investigate when conducting research is the implication of the

study. This research is very important for the academicians and the institution's management. Through this study academicians and the management can do the necessary adaptation to improve the academicians' motivation level and this could improve the student's performance.

The research is very important for academicians to understand how they can maintain and improve their motivation level in handling the classroom. They will be able to understand what kind of approaches to use in handling classrooms and to handle the challenges the academicians face in the classrooms. For the institution management that needs to support and assist the academicians, the research will provide them with the basic knowledge of how important is their support and encouragement to the academicians to maintain their motivation as well as to satisfy them. Indirectly it will help the institution to improve the quality of education and the quality of the students.

## Conclusion

In conclusion, the most important source of motivation for the academicians who are involved in this research is the student's positive attitudes. Nevertheless, their passion for teaching and the institution's support influences their motivation to be effective academicians as well. Passionate academicians not only contribute to being motivated, but they also contribute to better performance of academicians. This performance would influence the student's academic achievements. Yet the challenges the academicians face in handling class and generally the certain student's negative attitudes affect the academicians' motivation. However, Richardson and Watt (2015, as cited in Ivanec, 2020) assert different sorts of motivational profiles can react to various educational situations in different ways, and exhibit varying levels of professional commitment, accountability, and teaching effectiveness. In line with the study of Liu, Li, and Zou (2019), the researchers discovered that academicians are motivated by internal factors such as their existing value of development, teaching practice, and their feelings about development. This demonstrates that when academicians are intrinsically motivated to do something, it leads to a sense of accomplishment toward the institution or the student's performance. The greatest reward for academicians is when the students learn, participate, and perform well. Future research can be conducted on the causes of why academicians are not motivated and what are challenges the academicians face in handling post-millennials classrooms. Perhaps a research on relationship of academicians motivation and students attitudes can be done.

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## Appendix 1

### *Interview Questions*

#### Part 1

1. Respondent Name: \_\_\_\_\_
2. Position: \_\_\_\_\_
3. Gender: \_\_\_\_\_
4. Department: \_\_\_\_\_
5. Years of Experience Academic Service:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

6. Years of experience in Raffles College of Higher Education: \_\_\_\_\_
7. Average Service Hours per week: \_\_\_\_\_
8. Number of subjects taught (Direct):

\_\_\_\_\_

\_\_\_\_\_

9. Number of subjects taught (Cross teaching):

\_\_\_\_\_

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Part 2

8. How you became involved in teaching field?

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9. Explain your original motivation for teaching these courses.

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10. Describe your first academic courses you taught.

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11. What kind of rewards that influenced your motivation to teach.

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12. What are the challenges or issues you face in handling classroom?

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13. What are the approaches you use to handle the classrooms?

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14. How do you maintain your motivation in handling class?

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# The Impact of Transformational Leadership on Organizational Performance Through Employee Engagement: The Moderating Effect of Extrinsic Motivation

Rowence, Tan Rou Yen

*Faculty of Business, Hospitality and Communication*

*First City University College, Bandar Utama, 47800 Petaling Jaya, Malaysia*

## Abstract

Transformational leadership emphasizes the importance of vision, recognition and emotional support to implant optimism, sense of responsibility and innovative behaviour among followers. This leads to employee engagement which contributes to positive organizational outcome. When the extrinsic motivation such as basic needs of job security, satisfactory salary and career advancement are unfulfilled, the impact of transformational leadership on employee engagement is questionable. Hence, this research aims to investigate the effect of transformational leadership on organizational performance through employee's engagement, with the moderating effect of extrinsic motivation. IBM Statistical Package for the Social Sciences (SPSS) version 25 and Partial Least Square – Structural Equation Modeling (PLS-SEM) (SmartPLS 3.0) are used to conduct data analysis after data collection. As a result, all the hypotheses are supported. Transformational leadership has a positive impact on employee engagement and organizational performance. Employee engagement has a positive impact on organizational performance, and it mediates the relationship between transformational leadership and organizational performance. Extrinsic motivation strengthens the relationship between transformational leadership and employee engagement.

**Keywords:** transformational leadership, employee engagement, organizational performance, extrinsic motivation.

## 1.0 Introduction

According to Aarya Singh (2019), leadership affects the behaviour of others towards a realization of a goal. Transformational leadership is able to influence the employees' goes beyond the designated job responsibilities. Lack of intrinsic motivation can cause high density of work schedule and less enthusiasm among employees in work, leading to completion of tasks beyond the set deadline. All in all, this causes the organizational performance degradation.

Happy employees are an asset to a company as it has the ability to improve the individual performance which will lead to organizational performance (Nathan 2021). According to



study of Qualtrics, Malaysian ranked 7th in term of employee engagement in the world (Chai 2020). Mercer's Engagement Index found that 1 out of 4 employees in Malaysia were not engaged at work, highest among the Asia Pacific region which can badly affect the company and economic growth (Mercer 2022). According to Qualtrics 2020 study, the average employee engagement score in Malaysia is 54%, lagging behind India (79%), Thailand (72%) and Hong Kong (63%) (Writer 2020). Survey done by Ojo et al. (2022) suggested that Malaysian employees need more emotional support and recognition from superiors for them to stay creative and productive. According to Ismail et al. (2021), leadership is critical to produce a better workplace relationship which improve employee engagement.

It is meaningful to reveal if extrinsic motivation is amplifying or limiting the impact of transformational leadership in facilitating organizational performance. Extrinsic motivation such as salary is still a key consideration for most Malaysian (Aufa Mardhiah 2022). According to Workmonitor survey done by Randstad Malaysia, 74% of Malaysian workers are still first attracted to the employers who offers competitive salaries and benefits (Azalea Azuar 2022). 70% of Malaysian are expecting a good work-life balance (Azalea Azuar 2022). This research aims to investigate the effect of transformational leadership on organizational performance through employee's engagement, with the moderating effect of extrinsic motivation.

This research serves the limitation of Wang, Wang, Alam, Murad, Gul and Gill (2022) research which suggested to explore effects of other factors such as turnover intention and conflict on the relationship between transformational leadership and employee engagement. There are wide researches focused on impact of intrinsic and extrinsic factors on job-related outcomes (Watanabe & Kanazawa 2009), but without concluding how they play a moderating role in affecting the employee engagement. When extrinsic motivation such as basic needs of job security, satisfactory salary and career advancement are unfulfilled, the impact of transformational leadership on employee engagement is questionable. There is scarce research studying the effect of extrinsic motivation on relationship between transformational leadership which provides intrinsic motivation on employees' engagement.

The research questions are as following:

1. What is the impact of transformational leadership on employee engagement?
2. What is the impact of employee engagement on organizational performance?
3. What is the impact of transformational leadership on the organizational performance?
4. Does employee engagement mediate the relationship between transformational leadership and organizational performance?
5. Does extrinsic motivation moderate the relationship between transformational leadership and employee engagement?

The research objectives are as following

1. To examine the impact of transformational leadership on employee engagement.
2. To study the relationship between employee engagement and organizational performance.
3. To examine the impact of transformational leadership on organizational performance.
4. To examine the mediating impact of employee engagement between transformational leadership and organizational performance.

5. To determine the relationship between transformational leadership and employee engagement through extrinsic motivation as a moderator.

## **Literature Review**

### *Independent variable: Transformational leadership*

The theory of transformational leadership was founded by James MacGregor Burns in 1978 (Burns 1978). By inspiring a sense of mission and purpose, transformational leadership transforms the organizational culture to stimulate a new way of thinking, achieving higher organizational performance. Transformational leadership is said to be able to create trust, loyalty and admiration between subordinates and leaders to spur the voluntarily initiative to achieve the organizational goal. According to Robbins (2001), transformational leaders have the ability to inspire their followers to aspire bigger target and vision. Bass & Avolio (2000) has postulated that transformative leaders tend to emphasise on the importance of process and effort of followers, prioritise group interest rather than individuals and divert the needs of subordinates to a higher level such as pride and actualization. Overall value system of the employees, development of moralities, skills, and their motivation level are the main focuses of transformational leadership (Ebrahim Hasan Al Khajeh 2018).

### *Dependent variable: Organizational performance*

Performance as defined by Mangkunegara (2009) is the result of work quality and quantity by employees by carrying out their duties and responsibilities. Organizational performance is defined as a set of achievements following a set of practices. Hence, measuring the performance is evaluating the progress towards the set achievement. The standards of organizational performance include sustainability, profitability, pleasing the group, and willingness to deal with environmental changes. According to Gavrea, et al. (2011), the organizational performance involves three areas, namely financial performance, shareholder returns, and the product/service market performance.

### *Mediator: Employee engagement*

The concept of ‘employee engagement’ was founded by William Kahn in 1990s (Xu and Thomas 2011). Employee engagement is defined as ‘the emotional, cognitive and behavioral state of employees which pursue a desired organizational outcome (Shuck and Vollarad 2010). It is to describe the relationship between an organization and its employees. In simple words, it describes the intellectual and emotional involvement of employees in the organization (Amhalhal, Anchor & Dastgir 2015). Chalofsky and Krishna (2009) describe the engaged employees to be mentally and emotionally invested in their work and employer’s success. (Stopped 20.2.2023, 4.53pm)

### *Moderator: Extrinsic motivation*

Motivation refers to the reasons performing the behaviour (Parashar, 2016). Rokeach (1973) postulated motivation to be the most vital factor contributing to organizational behaviour. Motivated employees are more ambitious, innovative, determined and consistent which make them work efficiently (Parashar 2016). Extrinsic motivation is the motivation of worker from

outside the individual worker (Siagian 2014). According to Luthans (2015), extrinsic motivation is equivalent to the theory of hygiene factors by Herzberg. The hygiene factors include compensation, employment relationship and working condition. Compensation refers to rewards and benefits; employment relationship refers to healthy and friendly relationships in work environment; working condition refers to physical conditions and environmental conditions such as lighting, furniture and air temperature (Luthans 2015).

### *Hypothesis development*

Transformational leaders tend to stimulate the followers to work beyond expectations. The followers are produced to be unselfish, faithful, and connected to the organization. Hence, transformational leadership is also known as motivational leadership to fulfill the intrinsic needs of followers such as closer rapport and potential. This stimulates employees' self-confidence over specific jobs. Followers work towards a shared vision and work beyond the performance standards set by the organization (Anderson, Baur, Griffith & Buckley 2017). Transformational leadership is deemed to be an intrinsic factor which supports employees to maintain the mental health at optimum level through inspirational motivation and increase in confidence level. Ultimately, organizational performance increases (Diebig, Bormann & Rowold 2017; Swingmann, Wegge, Wolf, Rudolf, Schmidt & Richter 2014). In another words, transformational leadership facilitates intrinsic motivation to employees, directing employees to work towards a clear and shared organizational goal. Transformational leadership intrinsically motivates employees which in turn contributes the organizational performance (Khan, Rehmat, Butt, Farooqi & Asim 2020).

H1: Transformational leadership is positively related to organizational performance.

H2: Transformational leadership is positively related to employee engagement.

Previous research has revealed that there is a positive impact of transformational leadership on employee engagement (Li et al., 2019; Mi et al., 2019; Yang et al., 2020; Bui et al., 2017). A transformational leader improves the employee engagement in terms of individual employee's cognitive, emotional and behavioural state towards the organizational goal. By circulating a clear vision, employees internalize the organization's goals and value their contributions directed to the vision (Schwarz 2017). There is a connection between their efforts and the future of the organization. Hence, employee engagement is said to be a mediator between transformational leadership and employee engagement.

Prior research has revealed a positive impact of employee engagement on organizational performance (Gupta, 2015; Nazir and Islam, 2017). An engaged employee is said to be very much attached to their duties and responsibilities and is most likely to accept extra roles (Sahu et al., 2018). This is as Albrecht et al. (2018) described. Employee engagement produces positive work-related state of mind, with high level of energy. Such dedication involves a sense of significance and enthusiasm (Le & Lei 2017). The cognitive, emotional and behaviour output of this can be observed from their effort in working towards the organizational objectives (Reilly, 2018).

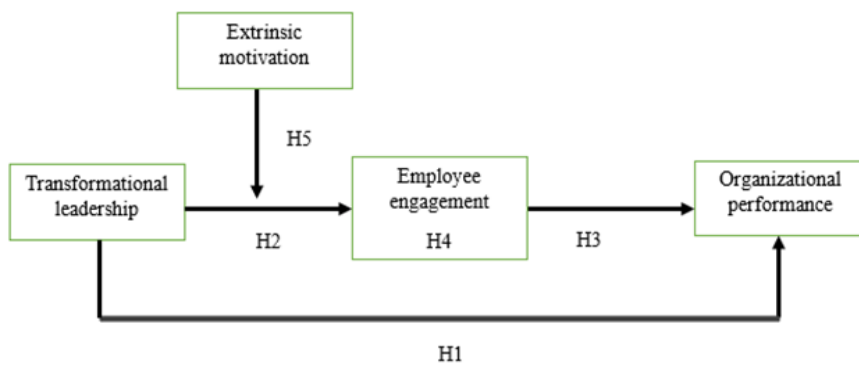
H3: Employee engagement is positively related to organizational performance.

H4: Employee engagement mediates the relationship between transformational leadership and organizational performance.

According to Deci and Ryan (1985), extrinsic motivation is the reason for an individual performing a behaviour other than an interest in the activity itself. In simple words, the employees use the job explicitly as a tool to achieve a work-related goal (Jong & Schalk 2009). In research by Fatima (2015), the impact of workplace spirituality which means for searching for meaning in work and getting connected with the inner self through work and job satisfaction is reinforced by intrinsic value and extrinsic value. Extrinsic value or motivation apparently seems in contradiction to the transformational leadership which enforces the intrinsic motivation. Transformational leadership contributes to employee engagement. However, when the extrinsic motivation such as basic needs of job security, satisfactory salary and career advancement are unfulfilled, the impact of transformational leadership on employee engagement is questionable. Hence, the impact of transformational leadership on employee engagement is diminished when the extrinsic motivation is absent (Fatimah 2015). The hypothesis is developed as below:

H5: Extrinsic motivation positively moderates the relationship between transformational leadership and employee engagement.

Conceptual framework



## Research Methodology

### *Research Design*

The quantitative research approach is adopted in this study because the purpose is to draw statistically significant conclusions by adopting samples which best represent the population. The primary survey data is needed in this study, giving a more comprehensive view to this study in examining consumer behavior if compared to transactional data and online secondary data (Kostyk, Zhou, Hyman & Paas 2021). This study is conducted based on a descriptive cross-sectional design. This research requires collection of data only once from the sample, instead of repeatedly (Malhotra 2019).

### *Data Collection Method*

Online self-administered survey will be conducted by using Google Form to display questionnaire. Its hyperlink and QR code can be distributed easily on social media platforms. Online self-administered survey incurs lower costs, faster turnaround, higher responses level and small respondent error (Forest 1999). The data collection process took two weeks from 1

February 2023 to 15 February 2023, and no interviewer was required. Respondents needed to allocate approximately 10 minutes to answer questions (Malhotra 2019).

### *Questionnaire Design*

In this study, questions are asked in a consistent way in a structured questionnaire. The questionnaire consists of two main sections which are demographic profile in Section A; and items to measure the 4 constructs in Section B. There are a total of 8 demographic questions and 27 measurement items in Section A and Section B respectively. Demographic questions are measured by using nominal scale and ordinal scale, while 27 items from 4 constructs are measured by using 7- point Likert scale. 7-point Likert scale provides more appropriate reliability and validity of construct (Foddy 1994). It has a greater division of scales' scores; ranging level of agreement from 1 (strongly disagree), 2 (disagree), 3 (slightly disagree), 4 (neither agree nor disagree), 5 (slightly agree), 6 (agree) to 7 (strongly agree) (Bearden & Netemeyer 1999).

### *Measurement of variables*

Transformational leadership is measured by 9 item indicators and adopted from Charoensukmongkol & Lamsam (2022). Employee engagement is measured by 5 item indicators and adopted from Ahmeda, Khanb, Thitivesab, Siraphatthadab, Phumdarab & Phumdarab (2020). Organizational performance is measured by 5 item indicators and adopted from Ahmeda, Khanb, Thitivesab, Siraphatthadab, Phumdarab & Phumdarab (2020). Extrinsic motivation consists of 9 item indicators and adopted from Engidaw (2021)

### *Sampling Design*

The target population in this study is defined as people living in Malaysia and are working adults. Hair (2014) suggested the minimum sample size can be dependent on number of indicators in all variables multiplied by 5-10, in case the data about number of population is unavailable. According to Hair's (2014) sample-to-item ratio, the minimum sample size for this research is 270 as this research has 27 indicators multiplied by 10. Purposive sampling is known as judgmental sampling where samples are selected to best represent the population. Purposive sampling is best appropriate for this study because participants must be working adults. The researcher will judge the subjects who will be the representative of the population to ensure the sample can better and accurately represent the population, fitting the research objective well (Etikan & Bala 2017).

### *Data Analysis Method*

IBM Statistical Package for the Social Sciences (SPSS) version 25 and Partial Least Square – Structural Equation Modeling (PLS-SEM) (SmartPLS 3.0) will be used to conduct data analysis. SPSS is a powerful statistical software which is widely used by researchers and academicians. In this study, preliminary data analysis and descriptive analysis will be conducted using SPSS. Due to the limitation of SPSS in dealing with structural equation modelling (SEM) techniques, measurement model, and structural model, mediating analysis and moderating analysis will be conducted by using PLS-SEM in this study. PLS-SEM is chosen for data analysis because the PLS-SEM focuses on the maximization of explained variance obtained by the researcher during the period of this research will be kept confidential and of the dependent variables (Hair, Ringle & Sarstedt 2011).

### *Research Ethics*

The questionnaire will be attached with a **participant information letter** and a **consent letter**. Voluntary participation is ensured. The researcher must accept the subjects' choice to participate in the survey; and ensure confidentiality of respondents' identity. The information purely for scholarly purposes instead of commercialisation.

### **Data Analysis**

#### *Preliminary Analysis*

This study adopts Collinearity Tolerance Value (CT-value) and Variance Inflation Factor (VIF) to detect multicollinearity. With EE as dependent variables; TL has CT-value and VIF of 1.000 respectively. With OP as a dependent variable, both TL and EE have CT-value and VIF of 0.470 and 2.126. In this study, the multicollinearity problem does not exist because CT-value of all constructs are above the threshold of 0.1; VIF of all constructs are all below threshold of 10 and 5 (Strestha 2020; Sarstedt, Ringer & Hair 2017). The independent variables in the study do not correlate with each other.

#### *Descriptive Analysis*

Sample size in this study is 270 respondents who are working adults. Demographic of respondents consists of 60.4% male and 39.6% female. In term of age, majority of respondents (63.7%) falls within the range between 20-30 years old. Majority of respondents (64.8%) have a Bachelor Degree. Half of the respondents (50%) earn RM5000 and above. Majority of respondents (80.7%) are full-time employee and 13.3% of respondents work as part-timer. Most of the respondents (48.5%) worked in multinational corporation. 38.1% work in their current company less than 1 year, followed by 25.2% work 1-2 years, 19.3% work 3-5 years, 11.5% work more than 5 years and 5.9% work 2-3 years. Lastly, nearly half (48.1%) of the respondents entitled a 4%-10% of annual salary increment and 38.5% entitled an annual salary increment of less than 3%. 8.9% entitled an annual salary increment of 11-20% while 4.4% of respondents entitled an annual salary increment of more than 20%.

#### *Correlation analysis*

Pearson's product moment correlation coefficient will be used in this study, to measure the strength and direction of linear relationships between two variables, denoted in  $r$  (Obilor & Amadi 2018). As shown in Table 4.3, the lowest  $r$  value is 0.437, a moderate magnitude of linear positive relationship between EE and OP, while the highest  $r$  value is 0.728, a strong magnitude of linear positive relationship between TL and EE. All the correlations are significant at the 0.01 level (1-tailed). Null's hypothesis is rejected. OP has the lowest mean score of 4.2348 whereas TL has the highest mean score of 5.7074. The standard deviations of all constructs range from 1.24 to 1.45.

#### *Table 1 : Correlation Analysis*

| Constructs | Mean          | SD             | TL             | EE             | OP             | EM       |
|------------|---------------|----------------|----------------|----------------|----------------|----------|
| <b>TL</b>  | <b>5.7074</b> | <b>1.35184</b> | <b>1</b>       |                |                |          |
| <b>EE</b>  | <b>5.0267</b> | <b>1.44661</b> | <b>0.728**</b> | <b>1</b>       |                |          |
| <b>OP</b>  | <b>4.2348</b> | <b>1.32501</b> | <b>0.479**</b> | <b>0.437**</b> | <b>1</b>       |          |
| <b>EM</b>  | <b>4.8727</b> | <b>1.23643</b> | <b>0.670**</b> | <b>0.668**</b> | <b>0.563**</b> | <b>1</b> |

\*\*Correlation is significant at the 0.01 level (1-tailed).

Note: TL (Transformational Leadership); EM (Extrinsic Motivation); EE (Employee engagement); OP (Organizational performance)

### Assessment of Measurement Model

#### Reliability Test

Conbrach’s alpha, Dijkstra-Henseler’s rho ( $\rho_A$ ) and Composite reliability ( $\rho_c$ ) of all constructs have exceeded the threshold of 0.70. Specifically, the Conbrach’s alpha of all constructs range from 0.791 to 0.984; Dijkstra-Henseler’s rho ( $\rho_A$ ) of all constructs range from 0.898 to 0.985; while composite reliability ( $\rho_c$ ) of all constructs range from 0.796 to 0.986. All the measures are reliable to be adopted for further analysis.

#### Validity test

##### Convergent validity

Hair et al. (2014) suggested that AVE and factor loadings are two main approaches to examine convergent validity of first-order measurement model. All the items except EM2, EM8, OP2, OP3, and OP5 have high variance explained by its own constructs or variables, with loading value lower than the desirable threshold of 0.708. Hence, EM2, EM8, OP2, OP3 and OP5 were removed from construct. The result is shown in Table 4.4.1.2.1 after removal. All loadings value and AVE exceeding the minimum threshold of 0.708 and 0.5 respectively. All the constructs have achieved requirements of convergent validity when all satisfactory loadings show the simple correlation between items and constructs; and the constructs explain at least 50% of the variances of its indicators (Hair et al. 2017).

Table 2:

| Constructs | Items | Loadings     | AVE   |
|------------|-------|--------------|-------|
| EE         | EE1   | <b>0.813</b> | 0.811 |
|            | EE2   | <b>0.917</b> |       |
|            | EE3   | <b>0.936</b> |       |
|            | EE4   | <b>0.937</b> |       |
|            | EE5   | <b>0.893</b> |       |
| EM         | EM1   | <b>0.739</b> | 0.624 |

|    |     |              |       |
|----|-----|--------------|-------|
|    | EM3 | <b>0.769</b> |       |
|    | EM4 | <b>0.769</b> |       |
|    | EM5 | <b>0.845</b> |       |
|    | EM6 | <b>0.817</b> |       |
|    | EM7 | <b>0.795</b> |       |
| OP | OP1 | <b>0.927</b> | 0.700 |
|    | OP4 | <b>0.736</b> |       |
| TL | TL1 | <b>0.925</b> | 0.888 |
|    | TL2 | <b>0.959</b> |       |
|    | TL3 | <b>0.960</b> |       |
|    | TL4 | <b>0.963</b> |       |
|    | TL5 | <b>0.944</b> |       |
|    | TL6 | <b>0.932</b> |       |
|    | TL7 | <b>0.940</b> |       |
|    | TL8 | <b>0.933</b> |       |
|    | TL9 | <b>0.923</b> |       |

Note: TL (Transformational Leadership); EM (Extrinsic Motivation); EE (Employee engagement); OP (Organizational performance)

### Discriminant validity

The square root of AVE of all the constructs is greater than its correlations with any other constructs. They range from 0.790 to 0.942. All constructs and their own measures have strongest correlations, explaining variance produced by its own indicators better compared to others (Vinzi, Chin, Henseler & Wang 2010).

Through cross loading, all the items have high loadings on its underlying constructs, compared to any other constructs. These items have weaker correlation with any other constructs. This indicates the uniqueness of constructs, where constructs capture the phenomena that is not shown in any other constructs. This study meets the cross-loading criteria in measuring discriminant validity.

### Assessment of Structural Model

Assuming a significance level of 5%, all hypotheses are supported, with *p* value lower than the threshold value of 0.05 and *t* value is larger than critical value of 1.65 in in a one-tailed



test. As shown in table 4.5.2, TL ( $\beta = 0.363, p = 0.000$ ) and EE ( $\beta = 0.465, p = 0.055$ ) are statistically significant in explaining OP. Besides, TL ( $\beta = 0.728, p = 0.000$ ) is statistically significant in explaining EE. The significant effect of TL on EE is the strongest. All direct relationships are in positive direction. H1, H2 and H3 are accepted.

Table: Assessment of Path Coefficient

| Hypothesis | Relationship | Std. Beta | Std. Error | t Values | p Values | Significance |
|------------|--------------|-----------|------------|----------|----------|--------------|
| H1         | TL -> OP     | 0.363     | 0.065      | 5.580    | 0.000    | Yes          |
| H2         | TL -> EE     | 0.728     | 0.037      | 19.622   | 0.000    | Yes          |
| H3         | EE-> OP      | 0.465     | 0.064      | 7.242    | 0.000    | Yes          |

Note: TL (Transformational Leadership); EE (Employee engagement); OP (Organizational performance)

In behavioural science and social studies, Cohen (1988) suggested  $R^2$  values at 0.2, 0.13 and 0.26 to be small, medium and large level of predictive accuracy.  $R^2$  for EE is 0.530 with p value of 0.000, which means 53.0% of variance of EE is explained by TL. Meanwhile,  $R^2$  for OP is 0.593 with p value of 0.000, which means 59.3% of variance of OP is explained by EE and TL. Both endogenous variables EE and OP are explained by their predictors at a large level.

Cohen (1988) recommended  $f^2$  values of 0.02, 0.15 and 0.35 showing that the exogenous constructs have small, medium and large effect on endogenous construct respectively. TL ( $f^2 = 0.152$ ) and EE ( $f^2 = 0.249$ ) have medium effects on OP respectively. Lastly, TL ( $f^2 = 1.127$ ) has a large effect on EE.

$Q^2$  value of an endogenous construct between 0 and 0.25 represents small predictive relevance;  $Q^2$  value higher than 0.25 and 0.50 indicates the medium and large predictive relevance (Hair et al. 2014). By cross-validated redundancy approach, all  $Q^2$  is above 0, revealing sufficient predictive relevance. Specifically, the model has medium predictive relevance for endogenous variable of EE ( $Q^2 = 0.485$ ); and medium predictive relevance for endogenous variable of OP ( $Q^2 = 0.393$ ).

### Assessment of mediation analysis and moderation analysis

$t$ -value larger than 1.96 and  $p$ -value lower than 0.05 shows the significance of mediator between the exogenous and endogenous construct (Memon et al. 2018). By bootstrapping procedure, TL ( $\beta = 0.338, t = 6.431, p = 0.000$ ) has a significant positive indirect effect on OP, through mediator EE. In addition, neither of confidence intervals of these indirect effects include 0 in between, indicating they are significant. Hence, H4 is supported. The moderation results indicate that the main effect of TL ( $\beta = 0.533, p < 0.05$ ) on EE is significant. The  $R^2$  has increased 0.123 after inclusion of the moderating effect, indicating medium effect size of moderating effect. The interaction effect of EM to EE is significant ( $\beta = 0.063, p < 0.05$ ). With an average level of EM, the relationship between TL and EE is  $\beta = 0.533$ . Higher level of EM by one standard deviation unit will strengthen the relationship between TL and EE by the size of interaction term ( $0.533 + 0.063$ ). On the other hand, lower level of TR by one standard deviation unit will weaken the relationship between TL and EE by the size of

interaction terms (0.533 - 0.063). Overall, the result shows that EM exerts a significant and positive effect on relationship between TL and EE. The H5 is supported.

## Conclusion and Recommendation

### *Discussion and Conclusion of Hypotheses and Research Questions*

In this study there are a total of 5 hypotheses and Research Questions. All hypotheses are supported. Hypotheses 1 and 2 are supported. Transformational leadership ( $\beta = 0.363$ ,  $p = 0.000$ ) significantly affects organizational performance. Transformational leadership ( $\beta = 0.728$ ,  $p = 0.000$ ) is statistically significant in explaining EE. Transformational leaders tend to stimulate the followers to work beyond the expectation. The followers are produced to be unselfish, faithful, and connected to organization. Hence, transformational leadership is also known as motivational leadership to fulfill the intrinsic needs of followers such as closer rapport and potential. This stimulates employees' self-confidence over specific jobs. Followers work towards a shared vision and work beyond the performance standards set by the organization (Anderson, Baur, Griffith & Buckley 2017).

Hypotheses 3 and 4 are supported. EE ( $\beta = 0.465$ ,  $p = 0.055$ ) is statistically significant in explaining OP. TL ( $\beta = 0.338$ ,  $t = 6.431$ ,  $p = 0.000$ ) has a significant positive indirect effect on OP, through mediator EE. A transformational leader improves the employee engagement in terms of individual employee's cognitive, emotional and behavioural state towards the organizational goal. By circulating a clear vision, employees internalize the organization's goals and value their contributions directed to the vision (Schwarz 2017). The cognitive, emotional and behaviour output of this can be observed from their effort in working towards the organizational objectives (Reilly, 2018). Hence, employee engagement is said to be a mediator between transformational leadership and employee engagement.

Lastly, hypothesis 5 is supported. The interaction effect of EM to EE is significant ( $\beta = 0.063$ ,  $p < 0.05$ ). This aligned with the research from Fatimah (2015) which argued the impact of transformational leadership on employee engagement is diminished when the extrinsic motivation is absent. Extrinsic motivation strengthens the relationship between transformational leadership and employee engagement.

### Research implication

This study is based on relevant published research and has established a research model to examine the mediating influence of employee engagement between transformational leadership and organizational performance. This study contributes to human resource personnel identifying ways to engaged employee effectively. Leaders should view employees as the most important asset of a company because of their knowledge, skills and abilities are able to make a glorious time for companies in this competitive environment.

Empirical evidence of this research suggested transformational leadership which is an intrinsic factor to support employees to maintain the mental health at optimum level, to be important in creating a positive working environment which will produce employees' engagement. This can be observed from the coefficient determination of EE at a large level, as the independent variable is only transformational leadership. An engaged employee most likely spreads positive comments about the organization, has a sense of belongingness to be

part of company and consistently exerts efforts in work. This improves organizational performance. Besides, this study also agrees that extrinsic motivation plays an important role to magnify the effect of transformational leadership on organizational performance. All in all, transformational leadership and extrinsic motivation could not be excluded if a company is to do improvement in organizational performance.

### Research Limitation and Recommendations for Future Research

The sample demographic profile is not balanced where respondents in categories of age between 20-29 represents 63.7% of sample profile. The sample was selected only in Kuala Lumpur, which is the most prosperous city in Malaysia, ignoring the other areas in Malaysia. Hence, the sample may not best represent the population. Future research may use quota sampling together with judgemental sampling. A quota from different age group is set (Malhotra 2019). For example, within each age group, the samples are selected based on judgement that he or she is working adult. With this method, number of samples in different age groups will be included averagely. Future research must also include the working adult in different cities sample to best represent Malaysian's population. Secondly, this study has only one predictor which is transformational leadership. However, the factor affecting the employee engagement and organizational performance can be many. Hence, it is suggested to include other predictors such as organizational culture and knowledge sharing.

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# Factors Influencing Purchase Intention on Private Label Brands (PLBs) of FMCG Products in Malaysia

Wong Choon Fah, Jackie

*Faculty of Business, Hospitality and Communication*

*First City University College, Bandar Utama, 47800 Petaling Jaya, Malaysia*

## **Abstract:**

Armstrong, Kotler and Opresnik (2019) define private brand as “a brand created and owned by a reseller of a product or service”. Private label brands (PLBs) market share remains low across all Asian countries. In Hong Kong, Korea, Singapore and Thailand, the percentage of shoppers who actually buy any private label is typically only 30 to 50%. (Kotler, et al., 2016). The objective of this study is to examine the factors that influence purchase intention of private label brands of FMCG goods in Klang Valley, Malaysia. Respondents are selected via a non-probability convenience sampling method. The research model of this study holds purchase intention being the dependent variable which is tested against independent variables including price consciousness, perceived risks and product quality with mediation effect of consumer attitude. Perceived quality and perceived risks were found to have significant relationships with attitude toward purchasing PLBs product, which in turn, affected purchase intention. On the contrary, price consciousness has no effect on customers’ brand attitude towards PLBs. This study benefits the retailers’ strategies to improve the sales of private label brands.

**Keywords:** private label brands, price consciousness, perceived quality, perceived risks, brand attitude, purchase intention

## **Introduction**

Private label brands (PLBs) have significantly increased during the past few years all around the world. Currently, around 45% of products sold in supermarkets in Europe are private label products, compared to 25% in the USA. Wal-Mart, for instance, sells 40% of private labels at its retail locations. Australia, Singapore, and other Pacific Rim nations, as well as Japan, have a sizable presence of private labels on store shelves (Mehra, 2016)

Menon (2018) stated that PLBs have been progressively expanding their influence and domination. Retailers are planning to grow their own brands as the competition gets tougher. Retailers have a wide range of private labels available in a variety of areas, including clothes, food and grocery, personal care, consumer durables, and leisure.

### *Research Objectives*

The objective of this study is to examine the relationship between consumers' perception of price consciousness, perceived risks and perceived quality towards purchase intention of private label brands (PLBs) with mediation effect of attitude towards the private label.

### *Significance of Research*

It is crucial for retailers to raise awareness of, promote, and appropriately price their brands in a highly competitive grocery retail environment where consumers are presented with a variety of brand choices while making purchases (Ndlovu, S.G. and Heeralal, S., 2022). Retailers realized it is important to study the factors that influence customers making purchase decisions of private label brands. Introduction of private label brands enable retailers to gain higher profits through better margins, enhancing store image, creating customer loyalty and providing additional revenue streams (Mehra, 2016). It is becoming increasingly important to examine private label management, given the differences in the development and consumer acceptance of private labels in different parts of the world (Horvat and Ozretić Došen, 2013).

As there is currently limited research on PLBs, particularly in Malaysia, this study will provide significant insights to retailers to establish a better understanding of their target customers to provide better products to their customers. Therefore, it is crucial to investigate what influences customers' decision to purchase PLBs. By investigating the elements influencing purchase intention, this study aims to fill the gap of the earlier studies.

## **Theoretical framework and hypotheses development**

### *Price consciousness*

One of the most crucial marketing factors for private label products is pricing. Giving a favourable association between price conscious clients and private label brand purchases is crucial because it has been reported that too many times they pay more attention to cheaper pricing when evaluating the purchase of private label brands (Thanasuta, 2015).

Private label brand pricing significantly affects consumer purchasing decisions (Singh et al., 2018), thereby attracting consumers who are price conscious. Pricing plays a big part in the effective management of private labels as brands (Abril & Rodriguez-Cánovas, 2016; Steinmann et al., 2018; Thanasuta & Chiaravutthi, 2018), which is why they decided to cut their prices from rival manufacturer brands.

Price consciousness is variable that positively impact the usage of private label. (Mukherji, 2017), (Baltas and Argouslidis, 2007), (Norfarah, Nabilah and Koo, 2018). Previous research claims that customers' price attention is likely to have a favourable impact on PLB buying. Price conscious consumers prefer purchasing PLBs and have a favourable attitude towards them (Mukherji, 2017; Wu, Yeh and Hsiao, 2011). Additionally, the research by Jang and



Moutinho (2019) underlined the idea that consumers who are price conscious are happier to acquire goods at a discount because they are interested in the transaction value, in this instance, the purchase of private label goods.

In this study, price conscious customers are expected to have more positive attitudes towards PLBs. Therefore, the first hypothesis is as follows:

*H1: Price consciousness has a positive effect on private label brand attitude*

### *Perceived risks*

Beneke, Greene and Mallett (2012) examined the role of perceived risk of premium PLB purchase intentions in the South African market. It has been discovered that perceived risk is multimodal in nature, with the most frequent elements comprising time, financial, social, functional, and physical danger. PLBs typically display more functional risk than their national brand. When consumers evaluate a PLB product, they utilise an inference based on price and quality that includes financial risk (Beneke, Brito and Garvey, 2015).

Over time, consumers grow to trust, like, and be loyal to national brands because they know what to expect from the items. It can be inferred that buying a product from a reputable brand sponsor tends to reduce the risk of doing so for consumers (Mehra, 2016). The development of modern technology enables consumers to quickly look up information about products before making decisions in order to reduce their risks (Manikandan, 2020). In other words, the higher the perceived risk, the less the purchase intention.

Horvat and Ozretić Došen (2013) have empirically shown a negative relationship between perceived risk and attitudes of private labelling across all categories examined. Customers could have formed negative attitudes toward PLBs due to the nature of people to avoid risks in their purchases. Hence, the second hypothesis formulated is as follows:

*H2: Perceived risk has a negative effect on private label brand attitude*

### *Product quality*

Perceived quality measures the consumer's overall assessment of the goods and services provided by retailers (Kumar et al. 2020). According to Nielsen's shopper trend report 2019, 50% of Indian consumers say that the quality of private-label products is improving (Shah and Raval, 2021). Consumers frequently believe PLBs to be poorer quality than national brands, according to prior study (Bao, Bao and Sheng, 2011). National brands spend a lot of money on aggressive mass media advertising to develop their brand equity and high quality perceptions.

Van Loo, Minnens, and Verbeke (2021) demonstrate that PLBs sellers must raise quality standards to surpass clients' expectations in order to draw in business. This result is in line with that of Ndlovu and Heeralal (2022), who found that quality significantly influences

customers' propensity to make purchases. Purchase behaviour will increase if PLBs have a stronger product quality (Mishra, Malhotra and Saxena, 2020).

However, because the private label brand's pricing is lower, its packaging is simpler, and its products are typically less well-known due to less advertisements, consumers believe that the private label brand is riskier and the quality of these products are unreliable and uncertain (Sudhir and Talukdar, 2004). Hence, the third hypothesis is:

*H3: Product quality has a positive effect on private label brand attitude*

#### *Brand attitude / Consumer's attitude*

Menon (2018) defined brand attitude as the expression of a person's positive or negative thoughts towards a brand. According to Burton et al. (1998) as cited in (Horvat and Ozretić Došen, 2013), attitude toward private labels is the propensity to have a positive or negative reaction to the product evaluation, likelihood of making a purchase, and one's own appraisal of products sold under a private label.

Consumer expectations for benefits, such as competitive price, effectiveness, or a favourable price-to-quality ratio, help shape attitudes toward private brands (Horvat and Ozretić Došen, 2013). Attitudes were revealed to be the most significant determinant of purchase intention (Hwang, Chung, and Sanders, 2016). The study by Karampour and Ahmadinejad (2014) produced similar results. The study concluded that a more positive attitude will result in a higher intention to purchase PLBs.

According to a study by Wang, Tao, and Chu (2020), there is a considerable direct correlation between perceived quality and purchase intention. In this study, it is assumed that consumers will only express a stronger desire to purchase PLBs provided they have positive attitudes toward them based on the perceived quality of the product. Thus, the following hypothesis is formed:

*H4: Greater the mediating effect of private label brand attitude greater the purchase intention*

#### *Purchase intention*

Sallam and Wahid (2012) stated that purchase intention is a tendency to buy a particular brand or product. Purchase intention of private brands is positively influenced by price consciousness (Batra and Sinha, 2000).

According to Wells et al. (2007), the British retailer PLB's enhanced product quality increased the market share of private label brands. Additionally, Muruganatham and Priyadharshini, (2017) found that consumers evaluate products for risk aspects to make sure they are risk-free from a functional and financial perspective, which leads to the idea that they are smart consumers. They have a positive attitude toward PLBs when these conditions

are met.

*Research Model*

The research model for this study is shown in Figure 1. The independent variables taken in this study are Price consciousness (PC), Perceived risks (PR) and Product quality (PQ). The mediating variable is Brand attitude (BA) and Purchase intention (PI) is the dependent variable. The variables for this study are adopted from (Mostafa and Elseidi, 2018).

**Research Methodology**

Non-probability convenience sampling method with sample size of 122 respondents participated in this survey. The survey was conducted in person and via Google Form. A total of 50 responses were collected through personal interview and 72 responses via Google Form.

Prior to data collection, a screening question was asked to ensure qualify respondents taking the survey. Respondents must have used or purchased PLBs product before. Only respondents who fulfilled these criteria were allowed to take part in the survey.

*Measuring Instruments*

Table 2 shows the questionnaire items were adopted and adapted from literature with modifications to suit the study. All of the items used a 5-point Likert scale, 1 = strongly disagree, 5 = strongly agree. The data was analyzed using Statistical Package for the Social Sciences version 28 (SPSS).

*Figure 1: Research Model depicting consumer purchase intention towards private label brands of FMCG products*

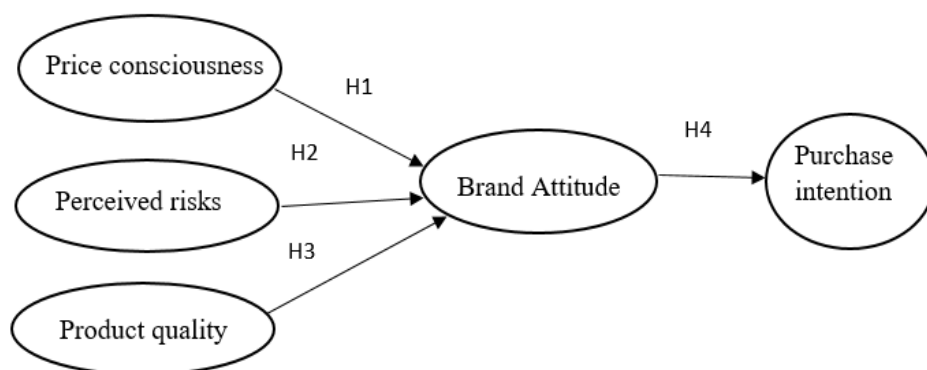


Table 2: Measurement of Scale

| <b>Construct</b>    | <b>Measurement Item</b>  | <b>Source</b>  |
|---------------------|--|--|
| Price Consciousness | <ul style="list-style-type: none"> <li>• I compare prices of PLBs with other brands before I make a purchase.</li> <li>• It is important to me to get the best prices for the products I buy.</li> <li>• Price is the most important factor when I am choosing private label brands.</li> </ul>  | Mishra, Malhotra and Saxena (2020); Mukherji (2017); Beneke and Zimmerman (2014) |
| Perceived risks     | <ul style="list-style-type: none"> <li>• I feel PLBs may have risks due to its low price.</li> <li>• I feel PLBs may have risks due to its low quality.</li> <li>• I worry that I will receive negative criticism from people who I value their opinions if I purchase PLBs.</li> <li>• I feel suspicious with the ingredients and materials used to manufacture the PLBs.</li> <li>• There is high probability that PLBs do not work / function as it should be.</li> </ul> | Diallo and Siqueira Jr (2017); Beneke and Zimmerman, (2014)                      |
| Perceived quality   | <ul style="list-style-type: none"> <li>• Private label products are high in quality.</li> <li>• Private label products are durable.</li> <li>• Private label products are reliable.</li> <li>• Quality is an important criterion when I purchase a product.</li> <li>• Private label products' quality are on the same level with other brands.</li> </ul>   | Sharma (2017); Bao, Bao and Sheng, 2011 Walsh and Mitchell, 2010).               |
| Brand Attitude      | <ul style="list-style-type: none"> <li>• Buying private label brands makes me feel good.</li> <li>• Private label brands are as good as other brands.</li> <li>• I like to try new PLBs products.</li> <li>• I love it when private label brands are available for the products I purchase.</li> </ul>   | Mishra, Malhotra and Saxena (2020); Mukherji (2017)                              |
| Purchase Intention  | <ul style="list-style-type: none"> <li>• I intend to purchase and use PLBs in the future.</li> <li>• Private label brands give you good value for money.</li> <li>• Although there are similar brands available, I would prefer to purchase private label brand.</li> </ul>  | Diallo and Siqueira Jr (2017); Mukherji (2017); Beneke and Zimmerman (2014)      |

*Validity and Reliability Test*

Table 3: Construct Validity

| <b>Construct</b>    | <b>Number of items</b> | <b>Cronbach's Alpha</b> |
|---------------------|------------------------|-------------------------|
| Price consciousness | 3                      | 0.998                   |
| Perceived risks     | 4                      | 0.992                   |
| Product quality     | 5                      | 0.947                   |
| Brand attitude      | 5                      | 0.910                   |
| Purchase intention  | 3                      | 0.774                   |

Table 3 shows the value of Cronbach’s Alpha coefficients range from 0.774 to 0.998 which exceeds the recommended value of 0.70. Therefore, we can conclude that there is adequate convergence validity of the constructed measurement model.

Table 4: Model Fitting Information

| <b>Model Fitting Information</b> |                   |            |    |       |
|----------------------------------|-------------------|------------|----|-------|
| Model                            | -2 Log Likelihood | Chi-Square | df | Sig.  |
| Intercept Only                   | 369.152           |            |    |       |
| Final                            | 328.100           | 41.052     | 3  | 0.000 |

Link function: Logit.

Table 4 shows model fitting information with  $P < 0.05$ . Thus, the model fit the data well.

Table 5: Goodness-of-Fit

| <b>Goodness-of-Fit</b> |            |     |       |
|------------------------|------------|-----|-------|
|                        | Chi-Square | df  | Sig.  |
| Pearson                | 596.447    | 567 | 0.190 |
| Deviance               | 293.933    | 567 | 1.000 |

Link function: Logit.

Table 5 shows model fitting information. In this analysis, both the Pearson chi-square test and deviance test were both non-significant ( $p > 0.05$ ). These results suggest good model fit.

## Discussion

Table 6 shows the profile of the respondents. 56.6% of the respondents are female while 43.4% are male respondents. Majority of the respondents are from 25 to 34 years old range (27%) followed by range of 35 to 44 years old (23.8%). Most of the respondents are married (54.9%) with qualifications of a bachelor’s degree (42.6%) and a monthly income ranging from RM2,000 to RM3,999 (32.8%).

| <b>Characteristic</b>  | <b>Number of Respondents</b> | <b>Proportion of Respondents</b> |
|------------------------|------------------------------|----------------------------------|
| <b>Gender</b>          |                              |                                  |
| Male                   | 53                           | 43.4                             |
| Female                 | 69                           | 56.6                             |
| <b>Age</b>             |                              |                                  |
| Under 18               | 10                           | 8.2                              |
| 18 - 24                | 20                           | 16.4                             |
| 25 - 34                | 33                           | 27.0                             |
| 35 - 44                | 29                           | 23.8                             |
| 45 - 54                | 23                           | 18.9                             |
| 55 or above            | 7                            | 5.7                              |
| <b>Marital Status</b>  |                              |                                  |
| Single                 | 55                           | 45.1                             |
| Married                | 67                           | 54.9                             |
| <b>Education Level</b> |                              |                                  |
| Secondary School       | 31                           | 25.4                             |
| Diploma                | 34                           | 27.9                             |
| Degree                 | 52                           | 42.6                             |
| Master                 | 5                            | 4.1                              |
| <b>Monthly Income</b>  |                              |                                  |
| Below RM2,000          | 30                           | 24.6                             |
| RM2,000 - RM3,999      | 40                           | 32.8                             |
| RM4,000 - RM5,999      | 38                           | 31.1                             |
| RM6,000 – 7,999        | 14                           | 11.5                             |
| RM8000 and above       | 0                            | 0                                |

Table 6: Distribution of respondents by demographic characteristics

| <b>FMCG Product Categories</b>     | <b>Number of respondents</b> |
|------------------------------------|------------------------------|
| Food and Beverages                 | 69                           |
| Baked goods                        | 54                           |
| Fresh food, frozen food, dry goods | 84                           |
| Cleaning Products                  | 81                           |
| Cosmetics and toiletries           | 52                           |
| Office supplies                    | 43                           |

Table 7: Distribution of respondents by FMCG product categories

Table 7 shows ‘fresh food, frozen food, dry goods’ is the most purchased product category, followed by ‘cleaning product’. The least purchased product category is ‘office supplies’.

Table 8: Multiple ordinal regression analysis results

|                |    | <b>Correlations</b>     |       |        |         |         |        |
|----------------|----|-------------------------|-------|--------|---------|---------|--------|
|                |    | BA                      | PC    | PR     | PQ      | PI      |        |
| Spearman's rho | BA | Correlation Coefficient | 1.000 | -0.045 | -.255** | .538**  | -0.074 |
|                |    | Sig. (2-tailed)         |       | 0.624  | 0.005   | 0.000   | 0.419  |
|                |    | N                       | 122   | 122    | 122     | 122     | 122    |
|                | PC | Correlation Coefficient |       | 1.000  | -0.093  | -.192*  | -.188* |
|                |    | Sig. (2-tailed)         |       |        | 0.307   | 0.034   | 0.038  |
|                |    | N                       |       | 122    | 122     | 122     | 122    |
|                | PR | Correlation Coefficient |       |        | 1.000   | -.616** | 0.134  |
|                |    | Sig. (2-tailed)         |       |        |         | 0.000   | 0.141  |
|                |    | N                       |       |        | 122     | 122     | 122    |
|                | PQ | Correlation Coefficient |       |        |         | 1.000   | -0.106 |
|                |    | Sig. (2-tailed)         |       |        |         |         | 0.247  |
|                |    | N                       |       |        |         | 122     | 122    |
|                | PI | Correlation Coefficient |       |        |         |         | 1.000  |
|                |    | Sig. (2-tailed)         |       |        |         |         |        |
|                |    | N                       |       |        |         |         | 122    |

\*\**. Correlation is significant at the 0.01 level (2-tailed).*

\**. Correlation is significant at the 0.05 level (2-tailed).*

*Note: BA = Brand attitude, PC = Price consciousness, PR = Perceived risks, PQ = Perceived quality, PI = Purchase intention.*

Table 8 shows the results of multiple ordinal regression analysis of the variables. Price consciousness among the consumers do not have significant relationship towards PLBs brand attitude. ( $p = .624$ ). This finding is consistent with Karampour, A. and Ahmadinejad, B. (2014) which emphasize that buyers choose PLBs that deliver value at a cheaper price rather than merely choosing PLBs for their low prices.

Findings showed that customers' decisions to buy store brand products are influenced more strongly by perceived quality than by perceived price. When the relationship was explored, it was surprising to find that perceived price was unrelated to buy intent. These results were in contrast to past research results, which indicated that store brand purchases were primarily motivated by price. These encouraging signs could offer some insights into how to assist the retailers to apply appropriate strategies to get customers to buy their store brand products and developing a more profitable business. (Alić, A., Peštek, A. and Merdić, E., 2019).

A Spearman's rank order correlation was run to determine the relationship between perceived risk and brand attitude. There was a negative correlation between perceived risk and brand attitude, which was statistically significant ( $r_s = -.255$  and  $p = .005$ ). This shows that risks could deter customers from purchasing PLBs.

According to the Spearman's correlation coefficient, there was a positive correlation between product quality and brand attitude, which was statistically significant ( $r_s = .538$  and  $p = <.001$ ). In consonance with the existing literature (Lin et al., 2009 and Bao et al., 2011), the hypothesised relationship between consumer's perceptions of PLB quality and attitude was

significant, and in the anticipated direction, where consumer perceptions towards PLB quality positively affected their attitude. This result implies that higher the PLB perceived quality, the more favourable the attitude is towards PLBs. This conclusion shows that retailers should continue investing in leveraging their PLBs' quality level.

Unexpectedly, there is no significant relationship between brand attitude and purchase intention of PLBs product. ( $p = .419$ ). This study unable to confirm that attitude mediated the relationships between price consciousness, perceived risks, perceived quality and purchase intention. This finding is contradict with existing literature Wang, Tao, and Chu (2020); Hwang, Chung, and Sanders, 2016 and Karampour and Ahmadinejad (2014).

## Conclusion

This research will help retailers in understanding how Malaysian consumers view PLBs purchases will spur companies to develop and market more of their own goods. Businesses may establish future plans by better understanding how different aspects affect behaviour and purchase, as well as which factors should be prioritised and how to influence customers' purchasing decisions. Additionally, it broadens the general public's knowledge and comprehension of PLBs.

## Limitations and Future Research

There are a few limitations in this study. Small sample size collected around Klang Valley area limits the generalizability of the data. In addition, this study is conducted on FMCG products of private label brand. Future research is needed for other product categories. Future research should include different product categories or sectors. Furthermore, this study focused on the PLBs and store-related characteristics. In the future, researchers could further examine variables such as consumers behavioural patterns (user status and buying pattern).

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# A Study on the Effect of Governance Factors Towards Financial Performance in Petroleum Industries during Pre- and Post-Covid in Malaysia

Joyce, Fong Jia Ling

*Faculty of Business, Hospitality and Communication*

*First City University College, Bandar Utama, 47800 Petaling Jaya, Malaysia*

## Abstract

This study aimed to investigate the governance factors affecting the financial performance of Malaysian petroleum industries during the pre and post covid era. Agency theory, resource dependency theory and stewardship theory serve as the bases of the conceptual model. In this study, the researchers have employed casual study due to the quantitative nature of data required to prepare the report of this study. The target population of this study is 20 Malaysian petroleum companies. The researchers selected the audited financial reports from 2017 to 2021. The researcher reviewed the financial statement and related published materials to collect secondary data to achieve the study's objective. Three governance factors are examined on the financial performance indicator, DuPont analysis, employing cross-sectional analysis. The conclusion drawn from this study showed an effect between the governance factor and the financial performance of Malaysian petroleum companies.

**Keywords:** Petroleum Industries, Governance, Board of Directors, Years of Establishment, DuPont Analysis, Financial Performance, Malaysia listed companies

## Introduction

The study aims to investigate the effects of governance factors towards financial performance of Malaysian petroleum industries. Corporate governance as collection of guidelines and institutional framework that serves as the foundation for managing and controlling the companies, as well as balancing the conflict of interest between stakeholders. (Urhoghide and Omolave, 2017; Naciti, Cesaroni and Pulejo, 2021)

Corporate governance has become the prominent issue confronting Malaysia since the Asian Financial Crisis 1997/8 to address the weaknesses in the corporate and financial system of Malaysia (Singam, 2003). In response to the issue, in 1998, Malaysian government established the Finance Committee on Corporate Governance (FCCG) to improve the overall quality, transparency and accountability of corporate management in Malaysia (Sallehuddin, 2016). In 2000, the Securities Commission introduced the Malaysian Code on Corporate Governance (MCCG), which serves as a significant tool for corporate governance reform and has influenced the corporate governance practices of companies positively (Securities Commission, 2021). According to the Securities Commission (2021), the MCCG and improvised version of MCCG outlines the best practices for corporate governance in Malaysia, which comprises of roles and responsibilities of board of directors, disclosure and

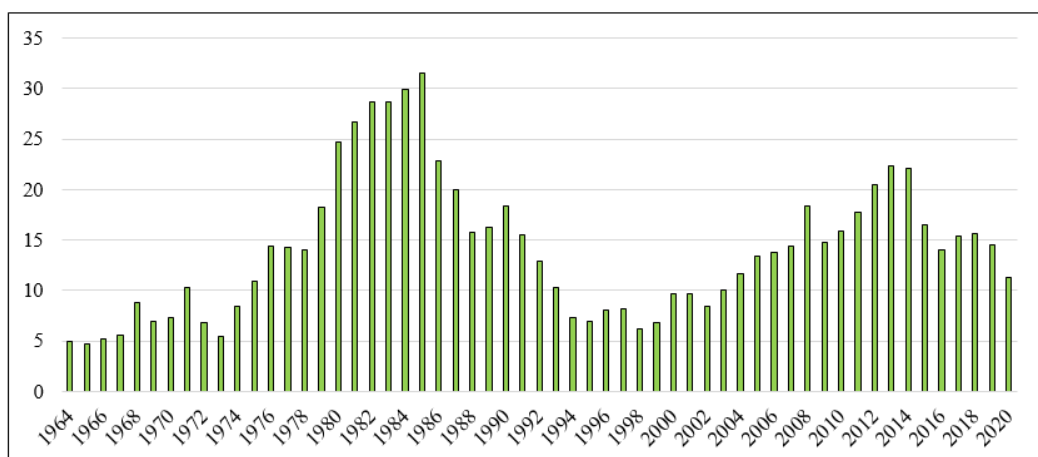
transparency requirements and principles of accountability and integrity. With the establishment of MCGG, Bursa Malaysia, Malaysia’s stock exchange, requires all the listed companies to comply with the MCGG.

Corporate governance has recently been the subject of significant policy decisions and a much-hyped issue in media across all countries regarding its potential role in enhancing the shareholders' value and firm performance (Handa, 2018). As companies expand, they use local raw materials, employ a local workforce, sell to the community, pay taxes, and so forth, that supposedly benefit the community. In addition, recent corporation scandals have been blamed mainly on "bad" corporate governance. The consequences of a firm's failure are enormous, affecting the entire society. For instance, investors will lose their capital investment, job losses can occur and many more (Mallin, 2016).

The petroleum industry is one of the prominent sectors of Malaysia, which serves as the cornerstone of economic growth and development. Malaysia serves as the Southeast Asia second-largest oil producer and the world's third-largest exporter of liquefied natural gas (LNG) (Bhattacharya and Hutchinson, 2022). At the end of 2020, the country held proven oil reserves of 2.7 billion barrels and natural gas deposits totaling 32.1 trillion cubic feet.

Since 1970s, establishment of Petronas and the operation of international oil production companies in Malaysia, the percentage of Malaysia’s fuel exports have remained relatively steady among the total merchandise exports. The total liquid fuel production of Malaysia was close to 655,000 barrels per day. It consists of approximately 556,000 barrel per day of crude oil and 49,000 barrels per day of natural gas plant liquids (NGPL). However, fuel exports have dipped during oil price slumps due to unfavorable external conditions (Figure 1). However, due to the event of oil gluts in mid-1980s, Asian Financial Crisis in 1997 to 1998, oil price crash in 2014 to 2016 and Covid-19 pandemic in 2020, there was sharp drop in Malaysia’s fuel exports.

Figure 1: Malaysia's Fuel Exports (as a Percentage of total Merchandise Exports), 1964 – 2020

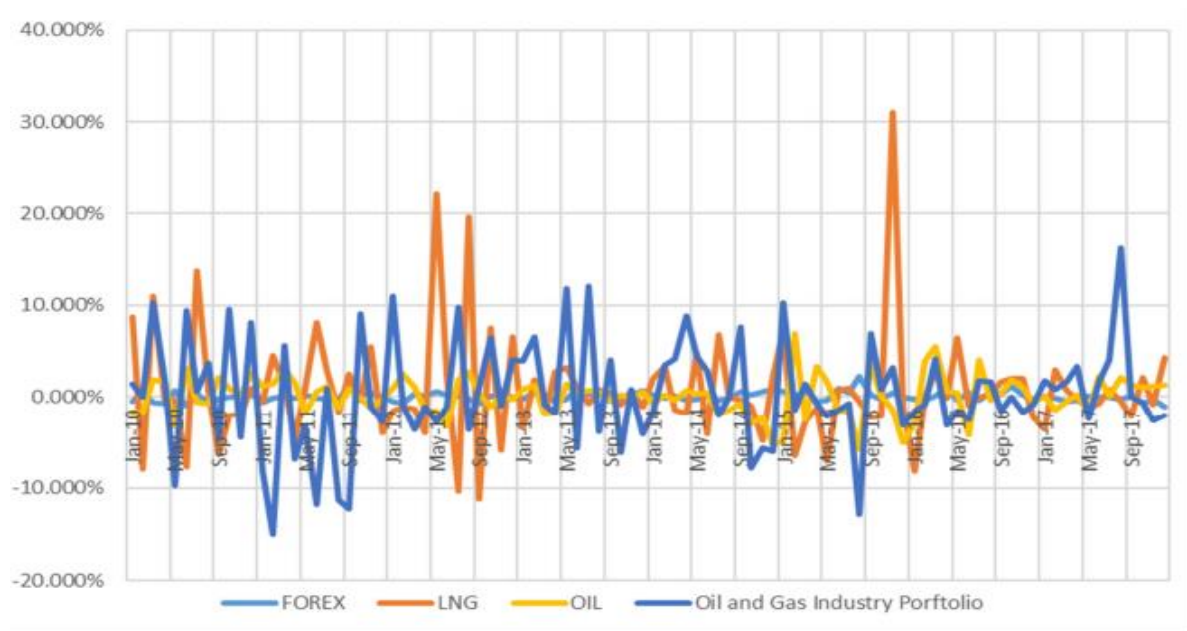


Source: Bhattacharya and Hutchinson (2022)

Malaysia’s stock market is particularly vulnerable to price volatility, with relatively high exposure to stocks in the Petroleum sector. It is due to the oil and gas industry stock having very high exposure intensity. As a result, the volatile nature of oil prices constantly breeds

uncertainty in the economy and how the petroleum business generates profits. Hence, the explosive change in the price of oil and gas might impact the stock performance of the industry (Hoque and Low, 2020).

Figure 2: Portfolio Return Change of Oil Business with the exchange rate, oil and gas return.



Source: Hoque and Low (2020)

Over the past decades, many academic researchers have studied the relationship between corporate governance and the financial performance of firms in general. Most of the researchers have focused on corporate governance, which is the dual roles of the chairman and CEO, board size, board meeting, stock and managerial ownership, percentage of independent directors, board gender, foreigner board, professional certification, government connection, audit committee size, debt policy, financial closure, ownership type, and joint venture ownership (Ramachandra Bhatt and Rathish Bhat, 2017; Hong, 2017; Iqbal, Nawaz and Ehsan, 2018; Alshbili, Elamer and Beddewela, 2020; Al-Sayani et al., 2020; Kiflee and Ali Khan, 2021; Khatib and Nour, 2021; Zelalem, Abebe and Bezabih, 2022).

However, few studies address corporate governance's impact on the performance of the petroleum sectors. According to Alshbili, Elamer and Beddewela (2020), board meetings it is discovered to have a favorable effect on corporate social responsibility. Disclosure on the composition of the board and the establishment of committees did not have significant impact on the Libyan Oil and Gas Company. However, Urhoghide and Omalaye (2017) found that board diligence and corporate governance changes are both reasonable but not statistically significant. Nawaz and Ahmad (2017) have found a relationship between ROE and all of the independent variables, including the board size, the number of shareholders, the short-term debt ratio, and the long-term debt ratio.

A preliminary examination of Ali et. al. (2021) revealed that research had been done on the Pakistanise company's establishment years as a part of the corporate governance component. However, the researcher discovered that no study had employed the DuPont model analysis as a yardstick for the financial performance of the petroleum industries. Thus, the researchers

studied the governance factors of Malaysia petroleum industries and used DuPont analysis as financial performance measurement metrics.

## **Literature Review**

### Theoretical Background

It has been recalled that difficulty in implementing some "good" corporate governance nowadays resides in the possible conflictual relationship between the shareholders and the board of directors. This has been addressed by agency theory, resource dependency theory and stewardship theory.

#### *Agency Theory*

Alchian and Demsetz and Jensen and Meckling (1976) proposed the agency theory of corporate governance. Traditional economics holds that businesses should be seen as nexuses for contractual interactions between people, even though they are typically seen as single-product organizations to make a profit (Tan, 2015). Agency Theory refers to principal-agent interactions at various corporate levels that impact decision-making, the creation and execution of strategies, and pursuit desired performance results (Naciti, Cesaroni and Pulejo, 2021). The size of the board, the board's makeup, the CEO's compensation, the directors' ownership stakes, and shareholder rights are the governance structures that the agency theory suggests (Fekadu, 2015). To resolve the conflict between the interest of the shareholders (principal) and managers (agents), agency theory assumes that management's role is to maximize the wealth of the firm's shareholders (Hakimah et al., 2019). The agency theory states that businesses may experience improved financial performance if costs are minimal. Due to the conflicting interests of managers and owners, shareholders may view the agency cost as a value loss (Kyere and Ausloos, 2020). The idea further contends that one individual shouldn't hold both the chairmanship and the CEO position, as doing so may restrict the board of directors' ability to supervise the company's performance (Fekadu, 2015). The underlying tenet of this theory is that the owners and management of the company have a fundamental conflict of interest (Kiel & Nicholson, 2003).

#### *Resource Dependency Theory*

Resource dependence theory focuses on the role of the board of directors in providing access to resources the company needs (Wanyama and Olweny, 2013). According to Ali et al. (2021) the inner structure of an organization must match the external environment, and the directors transfer information, talent, and various policies from the outside world to the company to improve firm performance. As mentioned by Wan Yusoff and Alhaji (2012) evaluate the possible results of connecting the business with external environmental factors and reducing uncertainty to reduce the transaction costs associated with external connections. Rou and Md Kassim (2022) significantly support the Resource Dependence Theory, which states that professional qualities brought to the business by the directors, such as knowledge and abilities, can help the firm's survival and performance sustainability.

#### *Stewardship Theory*

The stewardship theory suggests that companies should combine the roles of CEO and chairman, which contradicts the agency theory discussed. The stewardship hypothesis states that directors can achieve shareholders' organizational goals by acting philanthropically instead of selfishly in some ways and encouraging collectivism (Kyere and Ausloos, 2020; Zelalem, Abebe and Bezabih, 2022). When the companies they manage provide the highest possible financial outcomes, which also contain the value for shareholders, managers and directors establish and safeguard their reputation, a company's financial performance, shareholder value, and both parties' objectives (Kultys, 2016). According to stewardship theory, a principle-agency issue won't arise when stewards align their interests with the principal's (Chrisman, 2019). Given the significance of the stewardship concept in corporate governance, managers must be given specific and direct responsibility. The organizational structure should give management authority, worth, and power. Unlike agency theory, which presupposes that top management will act in their self-interest at the expense of shareholders, this theory adopts a different strategy (Abid et al., 2014).

### ***Empirical Framework***

#### *Financial Performance of Petroleum Industries*

A company's performance or value can be gauged by the benefits or advantages shareholders derive from their ownership of its shares. Companies with high share prices might succeed financially (Urhoghide and Omolaye, 2017). Financial performance assesses and keeps track of a company's operations in monetary terms to show how well it has performed financially over a predetermined period (Yusuf et al., 2018). One financial statement variable is divided by the other to get a financial ratio. It shows how two economic factors relate (Kim, 2016). Discounted cash flow, present value, equity cash flow, and the weighted average cost of capital approaches are often used metrics (Urhoghide and Omolaye, 2017). The DuPont analysis approach is used in this study to gauge financial success.

Researchers and experts frequently use the DuPont approach to describe the variables influencing a firm. The DuPont technique enables the discovery of tactics to boost performance based on increased turnover, margin, or leverage. Although the ratio numbers used in DuPont analysis are often not comparable across sectors, they allow comparisons between large and small businesses in the same industry (Saus-Sala, 2020).

According to Ong et al. (2015), they used return on equity (ROE), return on asset (ROA) and earnings per share (EPS) as a tool to measure the financial performance of the petroleum industries in Malaysia. On the other hand, another scholar who had studied the Nigerian oil and gas company used profit after tax as a financial performance measurement between governance factors (Urhoghide and Omolaye, 2017). Most scholars have adopted the ROE and ROA as the measurement of financial performance (Van Ness, Miesing and Kang, 2010; Dogan, 2013; Nawaz and Ahmad, 2017; Nwokwu, Atapattu, and Athambawa, 2019; Chen, Hsieh and Hsiao, 2021). However, no scholars have adopted the DuPont analysis as a financial performance measurement for the petroleum industries.

#### *Board of Directors and Performance of Petroleum Industries*

Scholars usually use the company board's independence to characterize board structure because it is critical to enabling effective board monitoring and tying the firm's strategic

policies to stakeholders' interests and expectations (Birindelli, 2018). Martin and Herrero (2018) recommend that the board of directors consist of five to fifteen members who, in our nation, fall under the following categories: executive directors (internal or insiders) who hold senior management positions, independent directors (external or outsiders) chosen for their personal and professional qualities, and proprietary directors who are shareholders with a stake greater than or equal to what is regarded as significant.

Independent directors should consist of at least 33% or 1/3 of the board of members and 2 Executive Directors, whichever is higher. Independent directors contribute significantly to governance efforts that lower agency costs and increase shareholder value, which improves financial performance (Xie et al., 2017). According to Lam and Lee (2012), boards are seen as more effective if they are made up of independent non-executive directors. One presumption is that many independent directors would result in greater oversight and responsibility, improving financial performance (Yammesri and Herath, 2010). It was concluded that the company's performance increases with the percentage of independent directors (Choi et al., 2007; Setia-Atmaja et al., 2009). According to Buallay, Hamdan and Qasim (2017), Besides that, empirical data shows that board independence has an insignificant or negative impact on a company's performance (Fuzi et al., 2016; Cavaco et al., 2017 and Unite et al., 2019). According to Hamdan and Al Mubarak (2017), Shan (2019) and Fan et al. (2020) found a the independent director and firm's performance have negative relationship, which is aligned with the stewardship theory.

#### *Board Size and Performance of Petroleum Industries*

Board size was first discussed in literature by Lipton and Lorch (1992) and Jensen (1993). According to Lipton and Lorch (1992), a board should include no more than seven or eight directors since any more would make it difficult for the CEO to exercise authority. Since it takes time and effort to voice one's thoughts in a large group and frequently results in a lack of cohesion, a huge board could also lead to less meaningful conversation (Shakir, 2007).

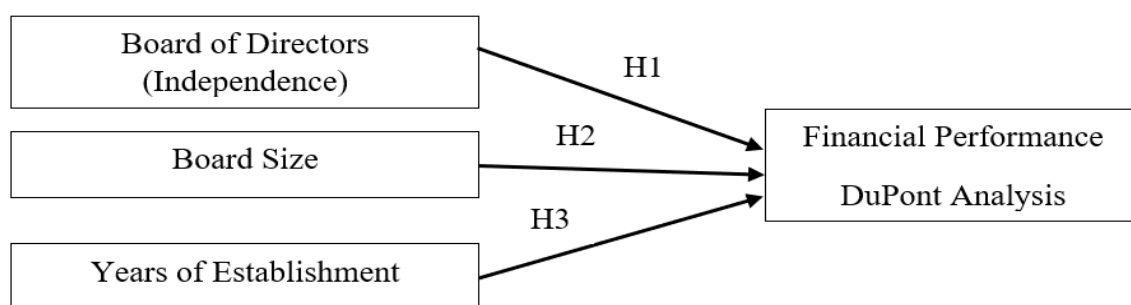
The size of the board does matter as it affects the monitoring, controlling, and decision-making of a company. Smaller boards are more effective at reducing the effort issue, while larger boards serve more as a status symbol than a part of the management process (Haniffa and Hudaib, 2006). However, Nwokwu, Atapattu, and Athambawa (2019) contended that there is a poor correlation between board size and a company's financial success. According to the negative connection, a bigger board would result in a negative impact on ROE. The finding was disputed by De Andres, Azofra and Lopez (2005) and Chan and Li (2008) who claimed that larger boards are associated with poor performance since doing so makes them less effective at monitoring. Andres and Vallelado (2008) contend that business owners should favor bigger board sizes because they encourage specialization, which affects how well the monitoring and advising tasks are carried out. This is further supported by Orozco, Vargas, and Galindo-Dorado (2018), bigger boards are associated with better business reputational performance. However, the studies that back huge boards are scarce and unsupported by actual data, which leads to ambiguous conclusions about their efficacy (Gatehi and Nasieku, 2022).

#### *Years of Establishment and Performance of Petroleum Industries*



The company's age indicates a company's reputation for amassing commercial experience. The ability of the firm to accept further debt or equity investments grows over the years of establishing the firm (Ayuba et al., 2019). Later, research began to include firm age explicitly as an independent variable in models looking at business dynamics from various aspects. Because younger businesses tend to be smaller and vice versa, early empirical research frequently used company age and size as indices of the same phenomena (Akben-Selcuk, 2016). According to Akben-Selcuk (2016), no matter the measurements and profits used, the findings indicate a negative correlation between business age and profitability, which means that older firms outperform. The age of the business and return on assets were found to be negatively correlated by Dogan (2013) using 200 listed firms' data from the years 2008 to 2011 to do a multiple regression. Evans (1987) investigates the link between business age, size, and growth using data from the Small Business Database and a sample of firms in the manufacturing industry, concluding that firm age harms firm growth rate and the chance of failure. The discrepancy between studies examining how company age impacts businesses' performance is considered a typical outcome since researchers don't have enough information on firms' ages, which is difficult to grasp how firm age influences performance (Ahmad and Fakh, 2021).

### 2.3 Proposed Framework



### Methodology

This section illustrates the statistical analysis of empirical data for the variables and indicators involved in this study.

#### *Timeframe and statistical analysis*

A sample of petroleum companies listed on Bursa Malaysia from 2017 to 2022 is analyzed. The researcher has chosen the period because the researcher wished to study the performance before and after the Covid-19 pandemic. In accordance with the relevant literature discussed in Section 2, multiple regression is employed to help capture the various variables involved in the study.

#### *Research and sampling design*

The study used the cross-sectional data method to test a sample of Malaysian-listed petroleum companies (20 companies) for the year 2027 to 2022. The study is restricted to Malaysian listed petroleum companies as their audited reports are published in Bursa Malaysia. Thus, there will be easier for the researcher to obtain the data. In addition, listed

companies will prepare their audited reports in compliance with the accounting standards.

### *Hypotheses development*

After reviewing the literature from prior studies, three hypotheses emerge:

Hypothesis H1: Board of directors does not affect the financial performance of Malaysian petroleum industries.

Hypothesis H2: Board size does not affect the financial performance of Malaysian petroleum industries.

Hypothesis H3: Years of establishment do not affect Malaysian petroleum industries' financial performance.

### *Description of Variables and Measure Indicators*

This section covers the description of the variables used in the study. These include the dependent and independent variables. The researcher indicates the measurement used to measure variables of corporate governance mechanism and their relationship with financial performance. The selection of variables is based on prior literature considering theoretical and empirical studies.

#### *Dependent Variables*

The researchers have used Dupont Analysis to estimate the financial performance of the Malaysian listed petroleum companies. According to Doorasamy (2016), The DuPont analysis is suggested to determine a company's market value. It demonstrates the leverage a business must raise future profitability through more efficient asset utilization, which would increase return to shareholders. The ratios are examined over time and the temporal trend that would indicate either an improvement or deterioration in the situation is highlighted, providing insight into the management of the business (Ahlam and Ali, 2021). The formula is as follow:

DuPont Analysis = Net Profit Margin X Asset Turnover X Financial Leverage Ratio

#### Net Profit Margin

Net profit margin (NPM), which quantifies the proportion of net profit generated by sales. Therefore, it can be argued that the firm is a more effective operation with a more significant value of NPM. This will increase investor trust in the company's ability to develop a business relationship based on investments. Additionally, the ratio of NPM can impact how quickly returns are generated (Kusmayadi, Rahman and Abdullah, 2018). The equation is as follow:

Net Profit Margin = Net Income / Revenue

#### Asset Turnover

Total Asset Turnover is a ratio demonstrating total asset turnover as determined by the number of sales or how effectively all assets contribute to sales. This ratio can indicate how

well a business uses its resources to produce profits. The exact quantity of assets can be added to the sales volume if the total asset turnover is raised. The greater the value of Asset Turnover, the greater the company's Return on Equity (Nasution, Putri and Dunga, 2018). The equation is as follow:

$$\text{Asset Turnover} = \text{Revenue} / \text{Total Assets}$$

### Financial Leverage Ratio

Financial leverage is a company's combination of stock and debt to finance its assets. A company may finance its investments with both debt and equity. A different choice for the company is preference capital (Innocent, Ikechukwu and Nnagbogu, 2014). A financial leverage ratio of less than 1 is typically regarded as favorable by industry standards. If a company's financial leverage ratio is greater than 1, lenders and potential investors may consider it a risky investment; if it is greater than 2, they should be concerned (Bock, 2022). The equation is as follow:

$$\text{Financial Leverage Ratio} = \text{Total Assets} / \text{Shareholders' Equity}$$

### *Independent Variables*

The governance mechanism recalled in the empirical framework session will be the independent variable of this study. They are:

- i. Board of Directors (Independence). In this study, it refers to the composition of independent directors. Independent directors contribute significantly to governance efforts that lower agency costs and increase shareholder value, which improves financial performance (Xie et al., 2017). It is measured by:

$$\text{Board of Directors (Independence)} = (\text{Number of Independence Board Directors} / \text{Board Size}) \times 100\%$$

- ii. Board Size. The board size refers to the number of members on the board. Some research suggests that a large board size results in better decision-making than a small one, increasing the companies' financial performance.

$$\text{Board Size} = \text{Number of the board of directors on the company's board}$$

- iii. Years of Establishment. The years of establishment refer to the number of years that the companies incorporated. Some evidence suggests that the "older" companies result in more experience managing the companies, thus leading to high financial performance.

$$\text{Years of Establishment} = \text{Number of years the companies incorporated}$$

### **Data Analysis and Discussion**

This section contains a discussion of the empirical data used in the study. A correlation coefficient analysis is employed to show the relationship between corporate governance variables and the financial performance of Malaysian-listed petroleum companies, measured by DuPont analysis.

*Descriptive Statistics*

The table below summarizes the descriptive statistics of the dependent and independent variables for five years from 2017 to 2022. The researchers used key descriptive statistics analysis techniques including minimum, maximum, mean and standard deviation, to elaborate the study's findings.

Table 4.1.1 Descriptive Statistics of the Variables Incorporated in the Model

| <b>Descriptive Statistics</b> |     |          |         |          |                |
|-------------------------------|-----|----------|---------|----------|----------------|
|                               | N   | Minimum  | Maximum | Mean     | Std. Deviation |
| Board of Directors            | 100 | 2        | 7       | 4.20     | 1.082          |
| Board Size                    | 100 | 4        | 13      | 7.99     | 1.720          |
| Years of Establishment        | 20  | 10       | 130     | 38.15    | 32.534         |
| Financial Performance         | 100 | -1599.00 | 126.00  | -22.5700 | 174.18023      |
| Valid N (listwise)            | 20  |          |         |          |                |

Source: SPSS Output based on secondary data from 2017 to 2022

The data indicates that the independent board of directors has at least two members and seven at most. The independent board of directors' standard deviation is 1.082 and its mean is 4.20. This suggests that the average independent board of directors of listed petroleum industries is 4.20 members. The number of members on a board has at least four members and thirteen at most. The board size mean is 7.99 and the standard deviation is 1.720. According to this, there are approximately 7.99 members on the average board size of listed petroleum industries. The year of establishment has a minimum of 10 years and a maximum of 130 days. As for the mean is stated as 38.15 years and the standard deviation is 32.534. According to this, the listed petroleum industries were established on average for 38.15 years. The minimum DuPont analysis value is -1599.00, and the maximum is 126.00. The DuPont analysis's standard deviation is 174.18023, and its mean is -22.5700. The mean value of -22.5700 shows that the listed petroleum industries generate net losses on average.

*Pearson Correlation*

Table 4.1.2 Pearson Correlation Analysis for Board of Directors and Financial Performance

| <b>Correlations</b>   |                     |                       |                    |
|-----------------------|---------------------|-----------------------|--------------------|
|                       |                     | Financial Performance | Board of Directors |
| Financial Performance | Pearson Correlation | 1                     | -.003              |
|                       | Sig. (2-tailed)     |                       | .976               |
|                       | N                   | 100                   | 100                |
| Board of Directors    | Pearson Correlation | -.003                 | 1                  |
|                       | Sig. (2-tailed)     | .976                  |                    |
|                       | N                   | 100                   | 100                |

Source: SPSS Output based on secondary data from 2017 to 2022

The correlation coefficient of -0.003 indicates a weak and negative relationship between the board of directors and the financial performance of the companies. When the board of directors increased, the financial performance of the companies through Dupont analysis decreased. The significant value (p-value) of 0.976 (>0.05) implies that the relationship is insignificant. Hence, accept H0.

Table 4.1.3 Pearson Correlation Analysis for Board Size and Financial Performance

|                       |                     | <b>Correlations</b>   |            |
|-----------------------|---------------------|-----------------------|------------|
|                       |                     | Financial Performance | Board Size |
| Financial Performance | Pearson Correlation | 1                     | .063       |
|                       | Sig. (2-tailed)     |                       | .534       |
|                       | N                   | 100                   | 100        |
| Board Size            | Pearson Correlation | .063                  | 1          |
|                       | Sig. (2-tailed)     | .534                  |            |
|                       | N                   | 100                   | 100        |

Source: SPSS Output based on secondary data from 2017 to 2022

The correlation coefficient of 0.063 indicates a weak and positive relationship between board size and the financial performance of the companies. When the board of size increased, the financial performance of the companies through Dupont analysis increased as well. The significant value (p-value) of 0.534 (>0.05) implies that the relationship is insignificant. Hence, accept H0.

Table 4.1.4 Pearson Correlation Analysis for Years of Establishment and Financial Performance

|                        |                     | <b>Correlations</b>   |                        |
|------------------------|---------------------|-----------------------|------------------------|
|                        |                     | Financial Performance | Years of Establishment |
| Financial Performance  | Pearson Correlation | 1                     | .058                   |
|                        | Sig. (2-tailed)     |                       | .808                   |
|                        | N                   | 100                   | 20                     |
| Years of Establishment | Pearson Correlation | .058                  | 1                      |
|                        | Sig. (2-tailed)     | .808                  |                        |
|                        | N                   | 20                    | 20                     |

Source: SPSS Output based on secondary data from 2017 to 2022

The correlation coefficient of 0.058 indicates a weak and positive relationship between the years of establishment and the financial performance of the companies. When the years of establishment increased, the companies' financial performance through Dupont analysis also increased. The significant value (p-value) of 0.808 (>0.05) implies that the relationship is insignificant. Hence, accept H0.

### Regression Analysis

Table 4.3.1 Model Summary

**Model Summary**

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1     | .399 <sup>a</sup> | .159     | .001              | 19.01636                   |

a. Predictors: (Constant), Years of Establishment, Board Size, Board of Directors

Source: SPSS Output based on secondary data from 2017 to 2022

The R square value is 0.159. It can also be interpreted as 15.9%. This suggests that the board of directors, the board size, and the years of establishment all contribute to variations in financial performance. Other factors outside the scope of the study account for the remaining 84.1% of the explanation.

Table 4.3.2 ANOVA

**ANOVA<sup>a</sup>**

| Model |            | Sum of Squares | df | Mean Square | F     | Sig.              |
|-------|------------|----------------|----|-------------|-------|-------------------|
| 1     | Regression | 1092.998       | 3  | 364.333     | 1.007 | .415 <sup>b</sup> |
|       | Residual   | 5785.952       | 16 | 361.622     |       |                   |
|       | Total      | 6878.950       | 19 |             |       |                   |

a. Dependent Variable: Financial Performance

b. Predictors: (Constant), Years of Establishment, Board Size, Board of Directors

According to the ANOVA illustration in Table 4.3.2, the p-value is 0.415. The regression is not statistically significant because the p-value is higher than 0.05. As a result, the null hypothesis (H0) will be approved. Therefore, it concluded that there is a link between financial performance and the governance factor, which includes the number of directors on the board, the size of the board, and the company's founding year.

Table 4.3.3 Coefficients

**Coefficients<sup>a</sup>**

| Model |                        | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. |
|-------|------------------------|-----------------------------|------------|---------------------------|--------|------|
|       |                        | B                           | Std. Error | Beta                      |        |      |
| 1     | (Constant)             | 24.853                      | 20.137     |                           | 1.234  | .235 |
|       | Board of Directors     | 9.558                       | 7.133      | .642                      | 1.340  | .199 |
|       | Board Size             | -8.141                      | 4.802      | -.801                     | -1.695 | .109 |
|       | Years of Establishment | -.002                       | .139       | -.003                     | -.013  | .990 |

a. Dependent Variable: Financial Performance

Source: SPSS Output based on secondary data from 2017 to 2022

The significant value of the board of directors is stated at 0.199 ( $p > 0.05$ ) in Table 4.3.3. This implies an insignificant relationship. This means that board directors have a positive effect on financial performance. Board size has a significant value of 0.109 ( $p > 0.05$ ). This also implies

a negligible connection. This indicates that board size affects financial performance favorably. Years of establishment have a significant value of 0.990 ( $p > 0.05$ ). It follows that having been in business for a while improves financial performance.

## **Conclusion**

This study aimed to determine how governance factors affected the financial performance of the petroleum industries during pre and post-COVID in Malaysia. Descriptive analysis, normality test, Pearson Correlation analysis, and Simple Regression Analysis were used to test the hypotheses. 20 listed Petroleum Industries make up the sample, which was taken from the annual report made public on Bursa Malaysia. By observing the results, it indicated that the governance factor components, including the board of directors, board size and years of establishment, significantly impacted the financial performance of listed Petroleum Industries in Malaysia during pre- and post-COVID.

## **Recommendation for Future Research**

This study only focused on 20 listed petroleum companies for the years 2017 to 2021. The sample size is too small for this conclusion to be regarded as a significant analysis representing all Malaysian Petroleum Industries. Therefore, it is advised that larger sample sizes will lead to more accurate and reliable results in future research. Also, this study focused only on three governance factors affecting the financial performance of Malaysian petroleum industries. By taking this study as a standing point, future researchers could extend the research to more elements of corporate governance. Also, future researchers can study the effect of corporate governance on non-financial performance. As the petroleum industries are one of the major income providers for Malaysia, other mediating factors such as the role of culture can be studied in shaping the relationship between the corporate governance and financial performance of the Malaysian petroleum industry. Besides, the other researcher can do research on the same topic by taking evidence from other industries, increasing the number of observations using longer years of data, and including primary data that will be collected through questionnaires and interviews.

## **Acknowledgments**

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# Factors That Affect the Purchase Intention Towards Luxury Brand Among Millennials

Eada Y L Ting & Vincent E K Wee

*First City University College, Bandar Utama, 47800 Petaling Jaya, Malaysia*

## **Abstract**

There is growing luxurious goods obsession has catch up and find replacement on the dearth of satisfaction in life among youth. Sense of pride that give individual significant value such as success and accomplishment and these complete complies status, wealth and exclusion among the society. The customer concern today has shown preference on brand spanking new concepts and different luxurious interpretation. This study would focus study on the purchase intention towards luxury brand. Millennials group will be chosen as the user group of this study. The study covers objectives to investigate the selected predictor such as brand loyalty, social media engagement and perceived trust on the significance predictor on purchase intention towards luxury brands in addition to the associations among three factors. Moreover, the research ought to find on whether gender is a moderator for the listed factor on the luxury brand purchase intention among millennials. This study aims to provide a thorough understanding on the importance of the factors mentioned for a better marketing strategy for the millennials today. The target sample population would the millennials in Bandar Utama, Petaling Jaya, Malaysia. Descriptive and Inferential analysis are done based on quantitative data collection approach. Discussion and recommendation follow by conclusion as a wrap up for the study.

**Keywords:** purchase intention, luxury brand, millennials, brand loyalty, social media engagement, perceived trust

## **Introduction**

### *Background of the study*

International Longevity Centre (ILC) state explicit fashion industries these days positioning hyper-focused Generation-Z consumers for a remunerative future forming a youth-obsessed style commercial fashion business (The fashion Law, 2021). Luxury manufacturers have end up achieved more brand preferably amongst younger generation even though they might not afford the merchandise (Tyler, 2018). Growing Luxurious goods obsession has catch up and find replacement on the dearth of satisfaction in life among youth. According to Shaari et al (2022), luxury brands demand shows rapid increase among millennials cluster and are expected to rise in Asian nation. Youngster today anticipates and has a personal assumption that costlier merchandise performs higher quality that shaped a higher self-esteem, self-accomplishment which act as short-run boost to the happiness (Ross, 2021).

Na (2022) states Young folks in Asian country today foresee less importance and concern in saving where they pursue instant gratification via luxury purchases. For instance, Korean star- Ms “Song Ji-ah” can be a walking symbolic star for the youngster today materialistic goals who owned an elegant stylish wardrobe. Malaysia with its unique “Truly Asia” business sector has shown trendy riding fashion influence globally with its contemporary diversity that boost up the luxury status of the Malaysian consumer (Manes, 2020). Youngster today believe a luxury brand that they are obsessed with unveil an identical identity where brand convey that perfect match to their true self. Luxury brand inspire a deep connection with the brand lovers with its premium costs that signifies the individual rank and power. (Mrad et al., 2020). Sense of pride that give individual significant value such as success and accomplishment and these complete complies status, wealth and exclusion among the society.

Business Wire (2022) stated the Global Luxury Goods Market Report 2022 shown the significant growing with the growth rate of 8.52% among millennials and young working-class population. Youngster today are keen on the quality product usage and the spending power availability. There is consideration where youngster today prefer online shopping indicates the online luxurious shopping is expected to grow significantly (Dwidienawati et al., 2020). Approximate 80% of the global luxury market are digital technology driven where 20% in these are online sales based which consumers are expected to be millennials (Chu et al., 2019). Young consumers are continuing redefine luxury which the luxury brand need to continue put effort finding ways make the brand accessible to youngster today (Ypulse, 2022).

### *Problem Statement*

Unprecedented global scale due to coronavirus outbreak halt production that affects and pressured on luxurious company sparking worldwide delays (Klich, 2022). This pandemic has assured the company to be proactive to stay away from traditional marketing strategies for the target consumer while electronic gadget playing important role among people especially youngster. According to Mallon (2018), Social media and influencer driven selling strategy has contributed to the tons of the client base building trending now among luxurious brand with stars collaborations or co-branding series integration in new product release and marketing. In addition, Kim and Reed (2021) stated there is a large marketplace for millennials today where heaps of luxurious manufactures having heavy investment in social media platform as one of the marketing strategies. As an example, Louis Vuitton (LV) enlists the “Squid Game” Korean drama 2019 actress Hyeon Jung to star in 2022 latest LV iconic twist bag. (Sophie-Ha, 2022). Cobranding like BMW- Louis Vuitton which maximize profit between two parties that achieve symbiosis. Brand collaborations bring brand engagement and generate a new interest in the society. The collaboration between brands is mean to be a credible way that promote brand awareness and brand exposure that reach potential new customer (Blight, 2022).

Euromonitor (2021) stated the demand of luxury brands among customers and vacationers in Malaysia has continued to rise with the economic growth. Research found that pandemic has promote the innovative and creative among luxurious brands where they transform their traditional business strategy to the digital revolution which can reach the target customer

globally with no constraint (Shaari et al., 2022). Danziger 2019 has forecast about 55% of the millennials who born between 1980s to 2000 are contributed to the purchase percentage of luxurious products marketplace in 2025. Millennials today are searching for innovative and distinctive design collections that differentiate themselves and present the individuality upon purchasing. The customer concern today has shown preference on brand spanning new concepts and different luxurious interpretation. Youngster today align their purchase preferences as Beauloye (2021) mentioned aesthetic choices in addition their personal value that match with the purchase branding value which brought to the society. Luxurious branding would share their design ideas upon the new product launching and convey the value through social media that create the purchase passionate among the youngster. Customer would prefer gaining equal benefits under customer-brand engagement where their purchase offers some value return.

Apart from that, ETX Daily up (2022) reveal generation Z shopper perform purchase behaviour on social community platform like TikTok or Youtube. They purchase based on the social influencers' advertorial or unboxing video that explain thorough the product specification online which Luxury brands effort today in the digital transformation to grab the younger consumer group. Agency (2021) stated luxury sector big players today ought to agitate new customer expectations about valuable product and innovative transformation to boost for the luxury fashion market with business sustainability. Research as Leong (2021) stated there is an upward push and rise in search traffic on luxurious branding during the pandemic time compared to before like Chanel (275%), Saint Laurent (306%), Rolex (161%), and Louis Vuitton (555%). This indicates the increment on the search volume has located accrued interest in luxurious brand. Youngster today has brought new necessities to the luxurious market where every big brand manufacture adapts to the ancient luxury values to cater the market needs and the expectation. 45% out of total luxury merchandise sales are expected on millennials by 2025 which is one of the significant stakeholders of the luxurious market (The Drum, 2021).

Moreover, Monteros (2022) mentioned that Gen Z (millennials) would have the potential to build up the brand loyalty even they are not ready to step into the luxury market. There are psychological and behavioural loyalty that can formed the brand loyalty which is under investigation for the youngster today (Hassanzadeh and Namdar, 2018). This indicates that luxury brand attempt to build partnership with social media for strong base among millennials for the overall luxury market performance. It is important to recognize the unique brand identity for millennials today to build up their brand loyalty as it has different retailing approach compare to different consumer group (Su and Chang, 2018). Youngster today crave for brand authenticity and creativity on the luxury good investment. Luxury brand are aware that strong brand loyalty would promote customers' higher spending power. Millennials and generation Z today expect value returned upon purchase the luxury brand and to earn their loyalty and long-term investment (Siapartners, 2022). Brand value and product authenticity would be one of the elements in building up customer brand loyalty that extend to brand engagement that promote the purchase intention of millennials on luxury brand.

Therefore, this study would focus study on the purchase intention towards luxury brand. Millennials group will be chosen as the user group of this study. Questionnaires will be used for these investigations. The predictor is listed such as brand loyalty, social media engagement and perceived trust.

### *Research Hypotheses*

HA1 = Brand Loyalty is a significant predictor on the purchase intention towards luxury brands among millennials.

HB2 = Social Media Engagement is a significant predictor on the purchase intention towards luxury brands among millennials.

HC1 = Perceived Trust is a significant predictor on the purchase intention towards luxury brands among millennials.

HD1 = Gender is a moderator of brand loyalty, social media engagement and perceived trust that drives on the purchase intention towards luxury brand among millennials.

### *Significance of the study*

The outcome of this research provides a simple evaluation guideline for measuring the purchase intention among millennials today towards the luxury brand. It can be used for marketers to have a thorough understanding on the importance of the factors mentioned for a better marketing strategy for the target potential customers. This outcome would provide a new direction especially during the post pandemic outbreak where customer concern on how they get the value upon spending. Collaborations with the key opinion's leaders would drive the long-term performance in luxury market that benefits both parties. The outcome would play as a reminder for the marketers in luxury brand to be proactive to the changing market demand and focus on future dominant spender in the market.

## **Literature Review**

### *Brand Loyalty (Attitude)*

Jain et al (2018) state attitude delivers a person strong faith regarding the performance of the behaviours (purchase intention towards luxury brands. Arora and Kishor (2019) stated that consumer attitude towards luxury brands has a considerable influence on the purchase intentions towards the brand. In this study, brand loyalty served as the attitude context under TPB.

Barbara et al (2022) defined brand loyalty as strong brand positioning and effort on brand promoting tools that result in positive interaction-based relationship among consumers and brand. Every luxury brand core aim to deliver exclusive luxurious experiences to each customer cluster that build up the brand loyalty. Brand loyalty is defined as the constant and frequent purchase of a particular brand as it formed the primary preference and choice of the customer (Celik and Yazar, 2022).

Luxury brand embrace the technology advancement and media that deliver their brand value systematically starting from zero to completion. Voorveld (2019) defined brand loyalty as strong emotional, inherent experience or feelings that consumer interacting with the luxurious brand. Strong emotional bonding result in customer loyalty for the brand with better

satisfaction of needs.

Consumer bond to the brand that fit their emotional needs in this competitive luxury market with identical quality among all luxury brands form brand loyalty (Bishnoi and Singh, 2021). Consumer with higher brand loyalty will have a positive impact on customer purchase intention.

Thus, brand loyalty in this study formed by effective customer-brand relationship, strong emotional influences and great perceived value on the brand.

#### *Social Media Engagement (Subjective Norm)*

Ajzen (1991) defined subjective norm as a catalyst that drive an individual to perform or not a behaviour according to the factors that is most significant. Subjective norm focusses on perceived social pressure on the behavioural performance as Jain et al (2018) stated which the research brings social media engagement as one of the predictors of the purchase intention among millennials today.

The Drum (2021) state luxury brand use social media to present their brand histories and experiences that convey the brand value to all the potential customers. Social media platform anticipates open opportunity to handle omnichannel relations and luxury businesses to optimize the synergies between online and offline (Husain et al., 2022). Millennial's surf digital media about luxury fashion brand pages, unbox reviews by influencers for their purchase decision (Deloitte, 2017).

Customer reviews and influencer reviews as electronic words of mouth (eWOM) contribute falls under social media engagement. There are experience sharing and product evaluation under eWOM for marketing purpose through social media where the diffusion of WOM is the essential mechanism for information gathering and brand awareness (Dwidienawati et al., 2020). It had become an essential tool for promoting luxury brands to younger audiences.

Deployment of instafamous people for branding has contribute to social media engagement today (Veirman et al., 2017). Social media engagement contributes to one of the keys on purchase intention to luxury brand today.

Thus, social media engagement in this study consists of eWOM and influencers (key opinion leader) on brand awareness through social media communication.

#### *Perceived Trust (Perceived Behavioral Control)*

Perceived behavioral control is defined as the difficulties of an individual discern when preforming the behavior (Ajzen, 1991). Perceived trust factor would represent these in the research.



Perceived trust can be defined as the positive attitude towards transaction behaviour that promote the transaction intention (Lu et al., 2016). Trust is an important predictor of brand commitment. Perceived trust is customers' faith on the purchased brand that is authentic with consistency (Zhang et al., 2020). Brand would create authenticated official fan page on Facebook, Instagram or tik-tok and provide reliable material which delivery directly from original marketers would develop strong perceived trust.

Credible internet evaluation by influencers or we-media would contribute to the perceived trust of the customer on the new product release that affect the consumer's purchase intention (Dwivedi at al., 2019). Quality assurance and consistency enhance consumer confidence in the product. Chowdhury (2017) stated that product quality is the capability of a product or service to persuade and convince the customer needs.

Research on Danibrata (2019) mentioned product quality enhance customer perceived trust. Brand promotional strategy creates communication synergy that can enhance the consumer trust (Seric et al., 2020). In this study, perceived trust is a brand trust that related to product authenticity and quality.

### *Purchase Intention (Behavior)*

Luxury brand purchaser experience heightened hubristic pride upon consumption of the luxurious item. Azjen (1991) defined purchase intention as the enthusiasm and motivation of consumer's performance to acquire goods or services. This drives the luxury brands paradox.

Customer purchase intention is deemed the gesture or indication of a consumer actual purchase (Shaari et al., 2022). It is described as the top level of reputable brand that bound physical and psychological values. Purchase intention is a key point for consumers to evaluate specific product that result purchase behaviour formation (Mirabi et al., 2015).

Purchase intention may be change and affects by social and environmental factors. Purchase intention can be described as the consumer subjective probability that one will make purchase on a given product (IGI Global, 2022). Positive purchase intention is formed when Luxury goods become preferable alternatives to having the unique characteristic to fulfil the individual desire (Ha, 2021).

## **Method**

### *Paradigm of Enquiry*

Research philosophy offer simple justification on research methodology with hypotheses and assumption given during the research process (Saunders et al., 2016). Positivism research philosophy as one of the ontological frameworks is implemented in this research. Positivism coheres to the view that empirical research gained through data collection and interpretation to promote an objective analyst (Blackwell, 2018). Positivism made an assumption where knowledge can be only true or false with no relationship to the reality, result made based on

research (Phair and Warren, 2021).

Deductive research approach is used in this study. Saunders et al. (2016) stated that true conclusion goes after true premises in deductive reasoning during the theory verification process. The proposed hypotheses are verified with a research strategy in this research. Deduction approach is used where the research development focus from a general scope narrow down to a special scope. This research studies on customer purchase intention (general) with four factors such as gender, brand loyalty, social media engagement and perceived trust (narrow scope).

### *Research Strategy*

Saunders et al. (2016) defined research strategy as a method where a researcher executes the research. Quantitative research is initiated in this study which is connected with positivism philosophy and deductive reasoning. Quantitative research examines the relationship among measurable variables such as brand loyalty, social media engagement, perceived trust, and security variables, purchase intention on luxury brands.

Numerical and statistical data would be involved in the analysis stage in this research. Quantitative approach is more appropriate in this research because the data covers millennials population in Bandar Utama area. Single data collection technique with quantitative analytical approach is proposed for the methodological choice under this research. This is categorized under mono-method quantitative research (Phair and Warren, 2021)

### *Research Design*

Research design is a framework that encompasses the procedure to collect, analyse and data interpretation (Bouchrika, 2022). Research design refers to extensive planning on how it acknowledges the research questions which containing research objective clarification that derived from research questions (Saunders et al., 2016). The study utilizes survey (questionnaires) techniques which matches to the deductive and quantitative approach with positivism approach. In addition, Quantitative data collected using survey enabling analysis done using descriptive and inferential statistics like Saunders et al. (2016) states that is more recommend and standard strategy that can used to response to the research question.

### *Time Horizon*

Saunders et al (2016) defined time horizon as the time framework or timeline covered upon the project completion. Cross-sectional time horizon was chosen in this study. The research data collection would be collected at one point in time where Phair and Warren (2021) addressed cross-sectional time is the choice. Thus, this research uses cross sectional with concern on millennials populations in Bandar Utama area selected and involves data collection in this study.

### *Data Collection*

This study brings specific purpose which study the purchase intention among millennials towards the luxury brand thus primary data is used. Saunders et al. (2016) states that data collection is vital to examined the proposed hypotheses. Primary data is known as the unique and original data that directly collected by the research from respondent chosen (Ajayi, 2017).

Moreover, multistage sampling such as combination of cluster sampling and convenience sampling is implemented in this study. Multiple sampling method is recommended for higher accuracy in data analysis compared to census. Saunders et al. (2016) define cluster sampling as one of the probability sampling techniques that promotes ease of accessibility and low cost while convenience sampling as a non-probability sampling technique that promote the ease of access.

Cluster sampling implemented in this research from Millennials in Malaysia > Millennials in Selangor > Millennials in Petaling Jaya > then finally focus bandar utama area. Apart from that, convenience sampling is practiced in targeted sampling area, Krejcie and Morgan (1970) suggest the sampling size on using convenience sampling focus on sample size (S) = 384 participants from population size (N) in millennials reported in Bandar Utama is more than > 10000.

A self-administered questionnaire will be implemented for data collection in this study. This research drives data collection in targeted population Malaysian millennials in Bandar Utama area. The location where the questionnaire would be distributed would be shopping centre in Bandar Utama area such as One Utama, Centrepoint, and Atria Mall. This is because the researcher can reach the respondents in short time frame.

| <b>Questionnaire Construct</b> | <b>Factors</b>                          |
|--------------------------------|---|
| Section A: 6 Questions         | Demographic                             |
| Section B: 5 Questions         | Brand Loyalty                           |
| Section C: 6 Questions         | Social Media Engagement                 |
| Section D: 5 Questions         | Perceived Trust                         |
| Section E: 5 Questions         | Purchase Intention Towards Luxury Brand |

*The table 3.1 shows the questionnaire design summary which cover the demographics information and variables in this research.*

### *Data Analysis*

Data collection from the distributed questionnaires will undergo analysis using the Statistical Package for the Social Sciences 20.0 (SPSS 20.0). Data will be tested to ensure its validity and reliability coefficient and correlation among the factors before undergo inferential analysis.

Variables presented in this study are ‘Brand Loyalty’, ‘Social Media Engagement’, ‘Perceived Trust’ and ‘Brand Engagement’. ‘Interval data’ represent different values in a single variable that enable this study acquire the difference for further analysis (Saunders et al., 2016). This research chooses ‘interval’ level of measurement where ‘Likert Scale’ is

implemented in the study to analyze those variables for obtaining deduction based on analysis result.

Saunders et al. (2016) states that “Mean is one of the central of tendencies that gives the numerical mean data of the variables.” This research need ‘mean’ for representing the value present in each variable with different survey questions in the presented variable. Moreover, ‘standard deviation’ gives descriptions and define how much is the data values diverge from the mean value which is practical in this study. There is various analysis carried out in this research which will be explained at Chapter 4 later.

### *Research Ethics*

The attendance participants exist for those who contribute data under data collection process using survey in this study. The researcher thus carries responsibility in preserve the privacy concern of the respondents and the data they commit in this study. There are two foremost ethical concerns listed for ensuring the participants are being appreciated and protected which are:

1. Respondents’ anonymity
2. Data Confidentiality

Data Anonymization is the procedure for protecting sensitive information with data encryption to protect personally identifiable information (CFI Team, 2022). This is utmost important as the research participators and data contributor have the rights to avoid themselves from any identity disclosure threats and uncertainties that raise undetectable impact to them in the future. Thus, this research would exclude the identifier of the participant such as such as biodata namely (Name and date of birth) at the biography section in questionnaires. Besides, this research would practice generalization under biography section where only gender would take place for the fairness and research valuable data.

Data Confidentiality is one of the ways in data protection from public exposure though the participants’ identity is known by the researcher. According to ASA (1999) appropriate steps must be practiced to the safest and date privacy protection assurance of the research under the code of ethics. There are some procedures practiced in secreting the relationship between data and respondents.

Furthermore, letter of consent is attached together upon the survey is distributed. Proper protection is vital to shield the respondents’ privacy and their information from unauthorized access, use and disclosure (Saunders et al., 2016). The sections include in the consent letter include the clear statement on the research details and signature of the participants are obtained. This is to ensure that participants are aware of:

- a. Participation in the survey is kept anonymous.
- b. All measure will be captured to assure the data confidentiality
- c. All identifying information kept confidential (data is protected from public exposure)

**Result**

This chapter utilize SPSS software to carry out few statistical tests on the data collection from 384 completed questionnaires. Researcher use descriptive analysis, validity test, reliability test and inferential analysis (Multiple Linear Regression) for the data analysis.

*Validity Test*

| <b>Rotated Component Matrix</b>  |           |      |      |      |
|--|-----------|------|------|------|
| PI- Purchase Intention; BL- Brand Loyalty<br>PT- Perceived Trust ; SM- Social Media Engagement                             | Component |      |      |      |
|  | PI        | BL   | PT   | SM   |
| B4C: I intend to purchase luxury fashion goods within next year  | .801      |      |      |      |
| B4E: Whenever I need to buy goods, it is very likely that I will purchase a luxury fashion brand product                   | .745      |      |      |      |
| B4D: I plan to buy luxury goods that is promoted by the social media influencer  | .648      |      |      |      |
| B4A: I intend to keep purchasing luxury brand  | .626      |      |      |      |
| B1D: There is a long-lasting bond between luxury brand and people like me  |           | .771 |      |      |
| B1B: I consider myself to be a loyal patron of one luxury brand  |           | .765 |      |      |
| B1C: I follow the brand page because of my attachment to the brand   |           | .741 |      |      |
| B3B: I can expect superior performance from luxury brand   |           |      | .778 |      |
| B3C: Luxury brand can be relied on to keep its promise on quality  |           |      | .778 |      |
| B3A: Luxury brand is dependable and has quality  |           |      | .757 |      |
| B2C: I frequently gather information from influencer review to help me choose the right product                            |           |      |      | .879 |
| B2E: I took the initiatives in seeking out various influencer's product review on luxury brand                             |           |      |      | .713 |
| B2D: I often read other consumers' posts on social media to have confidence in my buying decision for luxury fashion brand |           |      |      | .658 |

Table 4.1 shown the result of the validity test where each of the component presented in each factor are examined and relevant component is converged into a single variable.

| <b>Total Variance Explained</b> |                     |               |              |                                     |               |              |
|---------------------------------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
| Item                            | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              |
|                                 | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % |
| 1                               | 5.961               | 45.851        | 45.851       | 5.961                               | 45.851        | 45.851       |

|  |       |        |        |       |        |               |
|--|-------|--------|--------|-------|--------|---------------|
| 2  | 1.646 | 12.662 | 58.513 | 1.646 | 12.662 | 58.513        |
| 3  | 1.093 | 8.406  | 66.918 | 1.093 | 8.406  | 66.918        |
| 4  | .832  | 6.397  | 73.315 | .832  | 6.397  | <b>73.315</b> |
| Extraction Method: Principal Component Analysis. |       |        |        |       |        |               |

Table 4.2 shows that 73.315% of the variables is explained by the remaining items of the 4 variables. Balance of 26.685% is due to the removed items that have not considered the variable.

*Reliability Test*

|                         | Cronbach's Alpha | No. of Items | Mean  | Variance | Standard Deviation |
|-------------------------|------------------|--------------|-------|----------|--------------------|
| Brand Loyalty           | 0.853            | 3            | 13.29 | 3.618    | 1.902              |
| Social Media Engagement | 0.730            | 3            | 13.57 | 1.813    | 1.346              |
| Perceived Trust         | 0.759            | 3            | 13.51 | 2.015    | 1.420              |
| Purchase Intention      | 0.881            | 4            | 17.86 | 4.791    | 2.189              |

Table 4.3 shows the final item total statistics.

*Multiple Linear Regression*

| <b>Coefficients</b>                       |                             |            |                           |        |      |                         |       |
|---|-----------------------------|------------|---------------------------|--------|------|-------------------------|-------|
| Model                                     | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig. | Collinearity Statistics |       |
|   | B                           | Std. Error | Beta                      |        |      | Tolerance               | VIF   |
| (Constant)                                | .045                        | .222       |                           | .202   | .840 |                         |       |
| Brand Loyalty                             | .462                        | .034       | .535                      | 13.559 | .000 | .657                    | 1.522 |
| Social Media Engagement                   | .361                        | .043       | .296                      | 8.487  | .000 | .842                    | 1.188 |
| Perceived Trust                           | .159                        | .043       | .137                      | 3.703  | .000 | .743                    | 1.346 |
| Gender                                    | .044                        | .036       | .040                      | 1.243  | .215 | .999                    | 1.001 |
| a. Dependent Variable: Purchase Intention |                             |            |                           |        |      |                         |       |

Table 4.4 presents coefficients table with the VIF < 5, showing there is no multicollinearity amongst the independent variables.

**Regression Model:**

$$\text{Purchase Intention} = 0.069 + 0.461 (\text{Brand Loyalty}) + 0.363 (\text{Social Media Engagement}) + 0.159 (\text{Perceived Trust}) + \text{error.}$$

$$\text{Purchase Intention} = 0.045 + 0.462 (\text{Brand Loyalty}) + 0.361 (\text{Social Media Engagement}) + 0.159 (\text{Perceived Trust}) + 0.044 (\text{gender}) + \text{error.}$$

Based on the equation above, there is only B value for brand loyalty show increment after moderator, gender added in the equation. The value for social media engagement decreases while for value remain unchanged for perceived trust. Thus, gender is a mediator for brand loyalty that affect the purchase intention towards luxury brand among millennials whereas gender is not for that of social media engagement and perceived trust. This indicates the hypothesis D1 is not supported in this study.

## **Discussion**

Research Objective 1: To investigate the associations among the three factors and the purchase intention towards luxury brands among millennials.

The hypothesized relationship between the attributes (brand loyalty, social media engagement and perceived trust) and purchase intention towards luxury brand among millennials was supported. There are positive correlations in all three attributes that contribute to the overall purchase intention towards luxury brands. Each attribute is unique but they are dependent that affect the millennials' purchase intention.

In overall, the results were consistent with the existing research and theory supported. Only HD1= Gender is a significant predictor on the purchase intention towards luxury brands among millennials is not supported gender is only the mediator for brand loyalty but not social media engagement and perceived trust. This indicates that brand loyalty would affect the purchase intention on luxury brand among male and female shopper. Apart from that, gender was not necessarily predicting on the purchase intention towards luxury brands among millennials. Male and female shoppers would have equivalent possibility on the purchase intention towards luxury brands among millennials as luxury brand signifies individual status and individual favourable.

Research Objective 2: To investigate whether brand loyalty, social media engagement and perceived trust a significant predictor that affect the purchase intention towards luxury brands among millennials.

HA1 = Brand Loyalty is a significant predictor on the purchase intention towards luxury brands among millennials.

HB2 = Social Media Engagement is a significant predictor on the purchase intention towards luxury brands among millennials.

HC1 = Perceived Trust is a significant predictor on the purchase intention towards luxury brands among millennials.

Based on the multiple linear regression analysis, brand loyalty, social media engagement and perceived trust has a positive relationship with purchase intention on luxury brands among millennials. This indicate that the research study on Zollo et al (2020) is supported where the brand social connection bonding can promote by the brand community's participation (social media engagement) which in turn generates brand trust (perceived trust) and loyalty (brand

loyalty). These attributes are proved to be interconnected with each other that enable company generates financial benefits and return on future innovation idea.

Customer today form emotional connection to the brand where Hussain et al (2022) stated customer-related business awareness that is helpful for the company to build up brand loyalty. Customer can be one of the mediators that deliver brand value and bring in new customer. Celik and Yazaar (2022) research has proved once again with empirical evidence in this study where the synergy emotional interaction is an important condition in boosting the brand loyalty among millennials today. Consistent brand message to the right people, strong interaction, firm relationship maintenance will form a strong brand loyalty. Bishnoi and Singh (2021) research is supported in this study where customer today emphasize the emotional needs together with indistinguishable quality goods and services especially in this brutal competitive luxury brand market.

In addition, Sokolova and Kefi (2020) stated luxury brand company today should play strong collaborative processes of product-related information sharing with potential customer is proved on this study where more than 50% customer they prefer still shopping for luxury brand in the physical store. Informativeness as Dwidienawati et al (2020) research is proved where trusted source gives product reliability where a well-trusted platform is important for customer to have a better engagement in online platform. There are still gap of improvement to be done for the social media and internet utilization for the luxury brand to connects their customer online and offline. Key influencers like Key Opinion Leader (KOL) is emerging that are foreseen to be one of the factor that can boost the interaction with potential customer and significant marketing impact that helps company in generate revenue return for business performance in these 5 years.

Moreover, the result on perceived trust match Danibrata (2019) emphasize that product quality such as performance, unique features, durability and customer serviceability promoted the perceived trust that can influence the customer brand loyalty indirectly. Positive brand image is built up and impacted by product quality and brand trust that strengthen customer loyalty in business long run. Seric et al (2020) has significant finding that support this study where perceived trust is highly influenced by brand trust where consistency in product quality and strong coordination with on brand image and quality is important in luxury brand markets. Luxury brand are meant to be highly reliable and professional in product and services that promote to strong perceived trust which creates positive purchase intention towards luxury brands among millennials.

Therefore, brand loyalty, social media engagement and perceived trust are the keys to unlock the purchase intention towards luxury brands among millennials which each single attribute plays important role that build up long-term customer purchasing power for the luxury brand survival and sustainability. All the three Research Objectives together with five Research Questions has been answered with the findings.

Thus, Understanding the importance and influences of emotional needs among millennials help luxury brand in producing premium service that serve customer satisfaction and excellent brand value. Marketers should pay attention on the significance effect on social media engagement and crystal-clear communication on the new product launching that reflects their premier social status in society. Millennial consumers can be educated on the



brand value and image through strong social media engagement in enhancing perceived trust on luxury brand that indirectly building up the brand loyalty. Strong brand loyalty is expected that creates a competitive advantage in promoting brand value with the products and services, perceived brand trust with premium pricing that helps in generating revenue income.

### *Limitations and Future Research*

Limitation on this research study is data collection is limited in Bandar Utama area only. It is recommended that future research can expand to other cities that acquire wider population and demographics information. For instance, a different living lifestyle population like Sarawak are explorable with different spending power and priorities. A mixed method with questionnaire plus open-ended question and in-depth individual interview is suggested to enrich understanding on the purchase intention towards luxury brand. Combination on qualitative and quantitative approach are recommended with more precise data collection for a better data analysis. It is also worth noting to narrow down the luxury brand to fashion, digital, apparel or accessories for a more in-depth exploration for a better result in the future.

### Acknowledgments

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# Local Government in Malaysia: The Changing Landscape

Lim Eng Hoe

*Faculty of Business, Hospitality and Communication*

*First City University College, Bandar Utama, 47800 Petaling Jaya, Malaysia*

## Abstract

The Federation of Malaya and its successor, the Federation of Malaysia, which comprised of sovereign states, came in existence as a federal state under the Federation of Malaya Agreement 1948-1957 and the Federation of Malaysia Agreement 1963 respectively. The states, forming the Federation of Malaya, consented to adopt the national constitution, the Federal Constitution of Malaya, and the constitution was amended to take cognisance of the subsequent formation of the Federation of Malaysia. Under the Constitution, the Federation of Malaya and later the Federation of Malaysia adopted a three-tier government: Federal, State and Local governments. The powers and functions of the Federal and the States are enshrined in the Federal Constitution. That of the local authority were stipulated in the Town Boards Enactments and later superseded by the Local Government Act 1976. The Constitution stipulated that the State governments shall have exclusive jurisdiction over local government in their respective States. However, soon after independence the Federal government, like an in-coming tide, began to flow into the rivers and tributaries of the States and Local governments or local authorities as the latter are often referred to. The Federal government began to intervene into State and local government jurisdiction through policies, legislations and constitutional changes resulting in the three-tier government becoming a mirage. This paper will argue that the Federal intervention into the State and local government jurisdiction is an affront to the law and the amendments to the Federal constitution are unconstitutional constitution legislations.

**Keywords:** Federal, State and Local governments, Federalism, Federal policies, Maneuvering and Federal Constitution

Malaya and its successor, Malaysia, has a three-tier government, Federal, State and Local governments<sup>1</sup>. Local government, as enshrined in the Federal Constitution, falls within the exclusive jurisdiction of the State government<sup>2</sup>. Prior to the advent of the British, local affairs including the sanitation of the village were under the charge of the district chief or 'Penghulu'. Local administration then, though, lacked the concept of modern public administration, could be reckoned as a feudal system of administration. With the advent of the British, the country witnessed the colonial system of local government. In 1801 they introduced the Committee of Assessors to administer Penang township. The Committee was tasked with proper planning of the town<sup>3</sup>. The British did it, possibly, to have control over local administration and defray their local administrative cost. In 1856 the country witnessed the extension of local government to the other states, Malacca and Singapore, in the Straits Settlement, of which Penang was one, though with wider powers and functions.

Subsequently, as the British penetrated their colonization of the country, they introduced local government to the Federated Malay States in 1907 and the Unfederated Malay States in 1937, firstly as Sanitary Boards and later metamorphosed to Town Boards<sup>4</sup>. In 1976, the Federal government introduced the Local Government Act to supersede the earlier Enactments. Today, local authorities are categorized into City Hall or Councils, Municipal Councils and District Councils as summarized in Table 1.

But over the years, the local government landscape has changed. State governments have lost their jurisdiction over local authority to the Federal government<sup>5</sup>. Federal government have intervened into local authority powers and functions<sup>6</sup>, though, for the present, not for the States of Sabah and Sarawak<sup>7</sup>. They two States are thus not bound by the Federal National Council for Local Government’s decisions. The Federal have jurisdiction over 3 federal territories, Kuala Lumpur, Putrajaya and Labuan. The first two and the third were carved out from land that belonged to Selangor and Sabah respectively. Federal policies witnessed the takeover of fire services<sup>8</sup>, town libraries, sewerage<sup>9</sup>, solid waste management<sup>10</sup>, federal road maintenance in local authority areas, urban landscaping<sup>11</sup>, and urban planning<sup>12</sup>.

1. Article 74 read together with Ninth Schedule, Federal Constitution
2. *supra*
3. Ahmad Atory Hussain & Malike Brahim, (2005), Administrative Reform in Local Government in Malaysia, Journal of Ethics, Legal and governance, Vol 1/2005; M.H.Lim, (2020), Local Democracy Denied?, SIRD, p.15.
4. Town Boards Enactment 1937,
5. Article 95A Federal Constitution
6. Article 95A (1)
7. Article 95E
8. Federal took over Fire Services effective 1 January 1976 and it put under Ministry of Housing and Local Government
9. Solid Waste and Public Cleansing Management Act 2007, Solid Waste and Public Cleansing Management Corporation Act 2007.
10. 1 January 1976 and put under Ministry of Housing and Local Government
11. Landscaping Bukit Kiara, Kuala Lumpur, Kuala Terengganu Waterfront Development
12. Town and Country Planning Act 1976

Table 1 - Local governments by state and type

| Type                               | Johor | Kedah | Kelantan | Malacca | Negeri Sembilan | Pahang | Penang | Perak | Perlis | Sabah | Sarawak | Selangor | Terengganu | Federal Territories | Total |
|------------------------------------|-------|-------|----------|---------|-----------------|--------|--------|-------|--------|-------|---------|----------|------------|---------------------|-------|
| Cities                             | 3     | 1     |          | 1       | 1               | 1      | 2      | 1     |        | 1     | 3       | 3        | 1          | 1                   | 19    |
| Municipalities                     | 7     | 4     | 1        | 3       | 2               | 2      |        | 4     | 1      | 2     | 4       | 8        | 2          |                     | 40    |
| Districts                          | 6     | 6     | 11       |         | 4               | 8      |        | 10    |        | 22    | 19      | 1        | 4          |                     | 91    |
| Special or modified local councils | 1     | 1     |          |         |                 | 1      |        |       |        |       |         |          |            | 2                   | 5     |
| Total                              | 16    | 12    | 12       | 4       | 7               | 12     | 2      | 15    | 1      | 25    | 26      | 12       | 7          | 3                   | 155   |

*Local Government Department, Ministry of Housing and Local Government, Malaysia.  
23 December 2020.*

The Federal even expressed an intention to takeover public toilets in local authority areas<sup>13</sup>. Many of these services are now under federal jurisdiction. Local authorities have become impotent. They merely act as departments or agents to execute federal policies.

Many of these polices have now crystalized through plethora of legislations: the Solid Waste and Public Cleansing Management Act 2007 and Solid Waste and Public Cleansing Management Corporation Act 2007. The Federal Constitution, in particular, Article 95, has been amended to establish a pseudo-body, the National Council of Local Government, which is empowered to make decisions and the States are mandatorily required to comply with those decisions.

Despite the plethora of legislations and amendments to the Federal Constitution, a number of authors have opined that the Federal government have no way intervened or eroded States and their local government's powers or functions. Cheema and Hussein<sup>14</sup>, who conducted an autopsy of the various federal acts on policies, regulations and amendment to the Federal Constitution, opined that:

13. The New Straits Times dated November 23, 2014

14. Cheema and Hussein, G. Shabbir Cheema and S. Ahmad Hussein, Source: Asian Survey, Vol. 18, No. 6 (Jun, 1978), pp. 577-591, Published by: University of California Press, pp.586-587; (My emphasis in bold)

*'the Federal government have not intervened or eroded States and their local authorities' jurisdictions but rather acted in advisory role and changes made to local government have instead increase States and their local authorities' power in the administration of local councils...The reform to local government in Malaysia have deemphasized political party involvement in the activities of local authorities and reduced the role of Federal government (in local government administration). The Federal government's introduction of the National Council of Local Government under the Constitution would be, for most part, advisory and the State governments would have absolute authority to supervise and control the activities of local authorities in Malaysia'.*

Similarly, Ahmad Atory and Malke Brahim<sup>15</sup> opined that;

*'the reforms were introduced mainly to improve and upgrade effectiveness, image and the quality of the administration of government including local governments. .... The reform of local government 'should be observed within the framework of the national political system'.*

The opinions of both Cheena and Hussein and Atory and Malke do not reflect the changing landscape of local government introduced by the policies and plethora of legislations. As mentioned earlier, the Federal have taken over fire services, town libraries, solid waste disposal and public cleansing management and sewerage service, federal road maintenance in local authority area, urban landscaping, and urban planning. The introduction of the Solid Waste and Public Cleansing Management Act 2007, Solid Waste and Public Cleansing Management Corporation Act 2007 and the Sewerage Service Act 1993 witnessed the takeover by the Federal government the solid waste and public cleansing services from the local authority. The Federal, having taken over those services, granted solid waste management concession in local authority areas to Alam Flora Sdn Bhd, a subsidiary of Malakoff Corp Bhd and SW Corporation, another federal agency set up under the 2007 Act by the Ministry of Housing and Local Government. Local authority has often been faced with

dilemma to account for the poor service to the community. When solid waste was uncollected, the local authority could not answer to the community because the service was provided by the Federal government's concessionary. For that reason, several local authorities had to request for the termination of the concessionary's service. This has happened in Sepang Municipal Council. When the Council took over the service, they were able to save RM9 million<sup>16</sup> from the amount they had to reimburse the Federal towards their payment to the concessionary. The Federal government granted sewerage service management to Indah Water Konsortium, a company owned by Ministry of Finance Incorporated. In Kuala Terengganu City Council area, it was discovered that property owners were compelled by Indah Water Konsortium to pay annual sewerage rate despite the township has no sewerage system<sup>17</sup>. Urban beautification, the function of local authority, had been taken over by Ministry for Housing and Local Government. Beautification of Kiara Park in Kuala Lumpur was undertaken by the Ministry for Housing and Local Government, though it could had been done by Kuala Lumpur City Hall. Similarly, the beautification of Kuala Terengganu Water Front was taken over by the Federal government instead of being executed by Kuala Terengganu City Council.

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15. Ahmad Atory Hussain & Malike Brahim (supra)

16. The Star dated 24 January 2013

17. Interview with local residents

Aside from the Federal's introduction of policies and new legislations, the most far-reaching federal act was the amendment<sup>18</sup> to Article 95 of the Federal Constitution. It has several serious repercussions. The introduction of Article 95A to amend Article 95 empowered the Federal to set up a pseudo-body, the National Council of Local Government<sup>19</sup>. It is chaired by a federal minister; in this case, the Minister of Housing and Local Government, who has a casting vote<sup>20</sup> in the Council consisting of one representative from each State and 10 representatives from the Federal government. The Council, dominated by the Federal, is empowered to make policy which shall be abided by the States and Local authority<sup>21</sup>. This means the States, which had jurisdiction over their local authority, have now lost that jurisdiction. However, the Council's decisions do not apply to Sabah and Sarawak<sup>22</sup>. Similarly, the intervention of federal into local authority powers and functions means they have become federal departments or agents. The issue, thus, is whether Article 95A amendment is an unconstitutional constitution amendment.

Tun Abdul Hamid Mohamad<sup>23</sup> said;

*'Parliament's prerogative to amend the constitution, in the context of Malaysian law, is premised on the arguments that 'the power to amend the constitution is vested in Parliament, secondly, nowhere does it say that certain articles form the basic structure of the Constitution and cannot be amended and thirdly, nowhere does it say that the court may decide, case to case basis, which articles form part of the basic structure of the Constitution or not'.*

Tun Abdul Hamid's argument that the power to amend the constitution is vested in Parliament cannot be denied because 'the legislative authority of the Federation shall be vested in a Parliament'<sup>24</sup>. The legislative power, though is vested in Parliament, its legislative power is constrained by the Constitution. Under Article 4(1), it states;



*‘This Constitution is the supreme law of the Federation and any law passed after Merdeka Day which is inconsistent with this Constitution, shall, to the extent of the inconsistency, be void.’*

So, it means Parliament does not have unfettered power to amend the Constitution. Unlike in the United Kingdom, Parliament is supreme because the country does not have a constitution. Even then, Parliament in the United Kingdom do not have unfettered power to make law. Parliament, if it has unlimited power, may misuse their power to enact unjust law or the Executive may galvanise further power to entrench their duration in power or even stifle the power of other organs of government. This, oftentimes, prevails in a situation, where political party that has the majority seats in Parliament, might misuse their power to enact law they

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18. Article 95A

19. Article 95A (1)

20. Article 95A (2)

21. Article 95A (5)

22. Article 95B and 20 Points (Sabah) and 18 Points (Sarawak) Agreement

23. 22. Interview with local residents

23. Tun Abdul Hamid Mohamad, (12.6.2017), Not for Judges to Rewrite the Constitution. <https://www.tunabdulhamid.my>

24. Article 44

like. The people who have to obey the law must be given some remedy against attempt to enhance and entrench executive power or stifle the power of other organs of government, namely the Judiciary<sup>25</sup> or the Legislature<sup>25A</sup>. Even in country that does not have a constitution, arguments have been put forward to justify that parliament do not have unfettered power.

In the United Kingdom, it has been argued that where parliament abuse its power, remedy must be available to the people. As Lord Coke<sup>26</sup>, about 400 years ago, said;

*‘When an Act of Parliament is against the right and reason, or repugnant, or impossible to perform, the common law will control it and adjudge that Act to be void.’*

Professor Wade<sup>27</sup> in his lecture on ‘Constitutional Fundamentals, said;

*‘There can be abuse of legislative power, not indeed in the legal sense, but in a distinct constitutional sense, for example, if Parliament were to legislate to establish one-party governments, or a dictatorship, or in some other way to attack the fundamentals of democracy.’*

Yaniv Roznai<sup>28</sup> holds a similar view that;

*‘the constitution delegated the power to Parliament. Since it is a delegated power, Parliament acts as a trustee to the people, who possess primary constituent power. Having delegated power, Parliament is in a fiduciary relationship to the people and possess only secondary constituent power. By the very nature of the fiduciary relationship, the delegated power of Parliament to amend the constitution is limited. There exists a vertical separation of powers between the people having primary constituent power and Parliament having secondary constituent power’.*

Malaysia’s Parliament is subservient to the Constitution. It is, therefore, sacrosanct and any

amendment contrary to the Constitution ought to be subjected to judicial review. The Judiciary is, under the doctrine of separation of power, another organ of government which exists to act as check and balance in the exercise of government power.

The constitution provides protection to the people against the abuse of power. It is imperative that amendment, if it is to be made, must be congruent to the spirit to which the Constitution was formulated. The fabric upon which the Constitution was written should not be allowed to be altered though if, there are creases it could be ironed out. The ironing out of the creases is the function of the Judiciary or Legislature and not the Executive. The Executive should not

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25. see Article 121

25A, see use of ouster clauses in legislations

26. Dr Bonham's case (1608) 8 Co Rep 11b, 118a

27. H.W.R. Wade, (1980), 'Constitutional Fundamentals', The Hamlym Lectures, 32 Series, Stevens

28. Yaniv Roznai, (2017), Unconstitutional Constitutional Amendments: The Limits of Amendment Powers, OUP, pp.133-134

be allowed to make use of Parliament to make amendment to the Constitution contrary to the rule of law. If the Executive could be allowed to make use of the Legislature to amend the Constitution, then the people will remain at their mercy. As it has been said as early as 350 BC by Plato:

*“Where the law is subject to some other authority and has none of its own, the collapse of the state is not far off. But if law is the master of the government and the government is its slave, then the situation is full of promise and men will enjoy all the blessings that the gods shower on a state.”*

Simply put in conclusion, the introduction of legislations and amendments to the Federal Constitution may be a reflection of the Federal Executive to not only galvanize its power but to extend and centralize its power in its jurisdiction over the States. It is, perhaps, time re-set Federal-State jurisdiction to allow leeway for the States to exercise initiatives to leapfrog their socio-economic development.

# Internal Quality Assurance at an Academic Institution: Pain versus Gain?

Assoc Prof Dr Yanti Rosli<sup>1</sup> & Dr Hing Hiang Lian<sup>2</sup>

<sup>1</sup>*Biomedical Sciences Programme, Faculty of Health Sciences,  
Universiti Kebangsaan Malaysia, 50300 Kuala Lumpur*

<sup>2</sup>*First City University College, Persiaran Bandar Utama, Bandar Utama,  
47800 Petaling Jaya, Selangor*

Internal quality assurance (IQA) systems have proliferated worldwide, becoming one of the most important catalysts for higher education reform. The term quality assurance was not a popular term and may ignite auto-anxiety to many academics in colleges and universities settings. Prior to the statutory body known as LAN (Lembaga Akreditasi Negara/National Accreditation Board) in mid 1990s many assumed that quality assurance was a concept applicable only for the business world and not for an education institution. However with the advancement in education industry, LAN was then changed to MQA (Malaysian Qualification Agency) to streamline the quality of education in Malaysia (1). Majority of the colleges and universities in Malaysia then do not well-planned internal quality assurance activities because little was known about the benefits of quality assurance and the lack of knowledge on how to establish an internal quality assurance system.

In the absence of strong and enforced internal quality assurance system, a clear translation of the colleges or the universities' mission and vision were not cascaded into the business process and reflected by the quality of the graduates produced. Each institution would be striving according to their own definition of good practice, requirements, output standards and in most cases failed to address the needs of the nation for quality workforce in certain areas, for example. High skilled knowledgeable engineers for the 4 IR revolution and biomedical scientists for advanced technological diagnostics & treatments.

At the institutional level, the standard operation procedure that ensure qualities knowledge deliveries to the students may be disjointed to other procedures as the process is owned by a separate unit; the failure to identify the actual process owner would then in turn contribute to further repercussions down the chains of corrective actions, preventive measures and procedural actions. (COPIA 2009) (2) The separate, disjointed units may also produce further administration procedures; the most imminent would be each unit may have personnel working on a certain process, hence many units may churn separate data sets with many personnel on duplicated, generic work scope in many units, that were unregulated and not monitored. A general, overall institutional data is critical in making good administrative and business strategic decisions and institutional financial planning. The last two critical points may include the missing institutional client's satisfaction and the failure to identify the stakeholders and their needs in the absence of internal quality assurance system.

Internal quality assurance refers to policies and practices used by the higher education institutions (ISO9001:2015) (3) to monitor and improve the quality of their education. In comparison, external quality assurance relates to policies and practices set up by external parties to assure the quality of higher education institutions and programs (COPPA 2008) (4). For an institution, this may translate into creating the Internal System of Quality Assurance, Implementation of Internal Quality audit and Inculcation of the Quality Culture.

The transition period to be introduced to the institutional members is to ensure acceptance of new work culture and smooth migration into the system. The internal audit can be carried out once the transition is fully embraced and focuses on PDCA (Plan Do Check Action) cycle. The next phase of internal audit will then be expanded to education, research and community services standards. At this stage the integration of all quality assurance processes within the institutional can be expected. The consolidation of the Internal Quality Assurance system has allowed the development of the learning capacities and the better utilization of the resources and opportunities provided by the national quality assurance system. Now it is supported by an institutional culture oriented towards quality, commitment to high institutional performance, and an appropriate organizational structure.

Students' and graduates' involvement in the internal quality assurance process is a strength for an institution. When students' concerns were addressed, their satisfactions on the academic deliveries, support and services and infra-structures were measured and continuously enhanced, the institution will benefit in terms of larger numbers of clients. Graduate tracer studies assess the job situation of graduates from an institution to ensure the continuous improvement of education opportunities organized by the university, with a view to facilitating graduate entry into the labor market. The tracer studies conducted either by alumni renewing their employment data voluntarily. Apart from the graduates, employers' satisfaction surveys also play an important role to soliciting opinions on the competencies of graduates in the areas of communication, teamwork, ethics, and social responsibility.

In conclusion, demographic pressure and growing social demand for higher education have resulted in a tremendous increase in student enrolments and the number of universities over the last decade. The presence of private and international universities in the system has improved access to higher education in Malaysia and created greater need for monitoring and regulating the quality of higher education services, therefore internal academic assurance is an important determinant in ensuring the strength and the survival of an institution to face the future Malaysian education challenges.

### **References:**

1. Law of Malaysia Act 679 Malaysian Qualification Agency Act 2007.
2. COPIA 2009. Code of Practice for Institutional Audit 2009 (MQA 2019: 2nd Edition: 160 pp)
3. ISO 9001: 2015. International Standard Organisation 9001:2015 Washington USA.
4. COPPA 2008 Code of Practice for Programme Accreditation 2008 (MQA 2008: 2nd Edition: 153 pp)

# Social media Influencer: The “following” strategy.

Vincent E K Wee

*First City University College, Bandar Utama, 47800 Petaling Jaya, Malaysia*

## **Abstract**

This study sought to investigate the impacts of followers' knowledge of information acceptance and attitude and purchase intention, on followers' awareness of paid endorsements by social media influencers. This study used an online poll (N=200) to find that information acceptance and attitude is related to follow with intention to purchase, which is connected to intents to buy and spread word of mouth. We also discovered that influencer-follower relationships, which are linked follow with intention to purchase. Survey questionnaire is used in this research. There is a significant gap in this area where there is still insufficient research being conducted in regard to purpose of social media influencer convincing its followers.

**Keywords:** Social media marketing, Follower, Influencer marketing, Social media influencers

## **Introduction**

Social media use and social media marketing are two different things. In fact, a lot of firms simply don't grasp the motivations behind social media marketing "followers." Social media is widely used. The largest social media site, Facebook, has over two billion users globally and is growing; As for network for B2B marketers, LinkedIn, has over 800 million subscribers. In fact, new services like TikTok keep popping up. Social media is used by customers. There are many marketing-related things you may perform for no cost in order to develop your brand, disseminate eWOM, and engage followers. Social media can connect with both current and potential clients. The emergence of "Recommendation Engines," where social media is becoming smarter and recommending information to users more frequently. "Recommendation engines" represent a significant social media marketing possibility. In this Brave New World of "push" material, "Artificial Intelligence" or "AI" is used to reach out to new clients. (Huang, M.H. and Rust, R.T., 2021)

In light of this, this study sought to propose a conceptual framework for determining whether persuasive messages can result in consumers accepting information provided by social media influencer. The grounded theory drawing on literature on native advertising, sponsored content, influencer marketing, and persuasion knowledge model (Jing Wen, T., Kim, E., Wu, L. and Doodoo, N.A., 2020) from marketing and advertising literatures, as well as relationship management theory from public relations (Dhanesh, G.S. and Duthler, G., 2019)

*Problem statement*

The most powerful group in social systems is the group of social media influencers Lokithasan, K., et.al. (2019). Potential customers attach a high level of uncertainty and risk with the acquisition of a good or service when they are not yet familiar with it. As a result, the likelihood that a person will use this product or service depends on their willingness to try out new features. Those that actively and cooperatively use online venues like blogs, forums, social media, and other kinds of online social media are known as social media influencers (Paschetto, I.V., et.al. 2022). They can persuade people in three ways: by providing as an example to be imitated, by word-of-mouth promotion, or by offering suggestions for use and purchase (Iyer, R. and Griffin, M., 2021).

Internet users pay close attention to social media influencers because they are important for word-of-mouth marketing and create useful material and messages that affect others' opinions (Chen, J., Chen, X., Chao, X. and Wang, H., 2022)

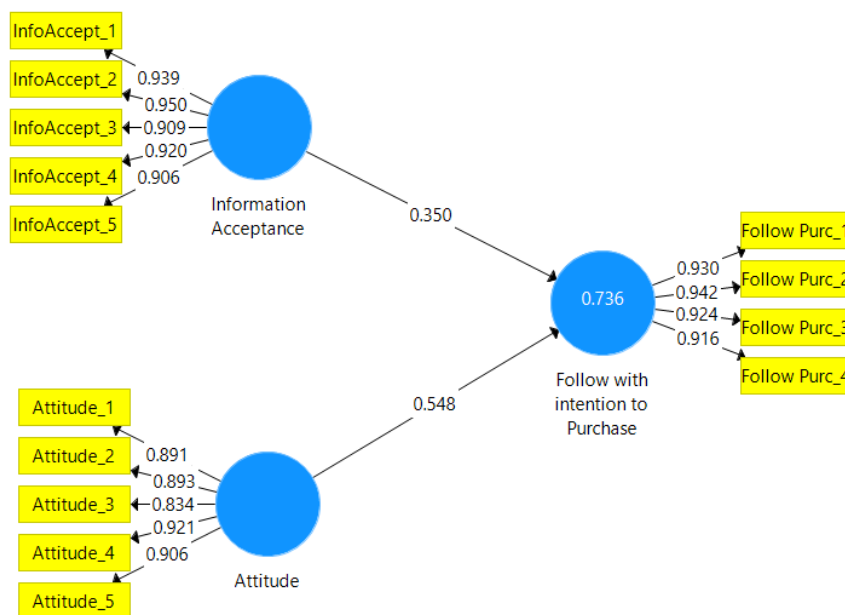


Figure 1: Proposed Conceptual Framework

**Literature Review**

SMI's were described as "a new sort of independent third-party endorser who shapes audience opinions through blogs, tweets, and the use of other social media" by Delbaere, M., Michael, B. and Phillips, B.J., in 2021. Others have described social media influencers as a category of microcelebrity (Alperstein, N.M. and Alperstein, N.M., 2019) that engage in self-presentation on social media by building an online persona and using it to draw in and interact with a sizable following (Rogers, R., 2020). While some influencers have nearly a million followers or more, others, known as micro-influencers, have smaller fan bases with numbers between

10,000 and 150,000 or 500,000. These smaller, more specialised micro-influencers are seen as more approachable and relatable, with a profoundly committed, engaged, and connected group of followers.

These smaller, more specialised micro-influencers are thought to be more approachable and relatable because to their devoted, connected, and engaged smaller communities of followers (Boyd, 2016; Wissman, 2018).

However, it has been discovered that non-traditional celebrities, such as bloggers, YouTubers, and Instafamous people, are more effective in terms of source credibility and consumer buying intention since their followers find them to be more relevant and credible than traditional celebrities (Djafarova & Rushworth, 2017). Relationships between influencers' personal brands and their followers are arguably the most important factor in determining their success. These connections are established on carefully constructed foundations of trust, which are crucial for influencers to develop their own media brands (Hudders, L., De Jans, S. and De Veirman, M., 2021).

A macro influencer with more than 1 million followers can command up to \$15,000 each post, whereas micro influencers may only receive free products or up to \$150. (Crain, 2018). Although social media influencers are frequently used by public relations professionals to implement native tactics, little research has looked at the relationship between disclosure and the resulting conceptual persuasion knowledge (advertising recognition) and relationship dimensions like trust and commitment between the influencer and their followers (Dhanesh, G.S. and Duthler, G., 2019), variables that are proposed in this study as representing attitudinal persuasion knowledge.

Estimated standardized coefficients, hypotheses, and significance

| Proposed relationship  | Standardized coefficient | p-value | Significant |
|--|--------------------------|---------|-------------|
| H1: Acceptance of Information → Follow with Purchase intention | 0.350                    | < 0.003 | Accepted    |
| H2: Attitude → Follow with Purchase intention                  | 0.548                    | < 0.00  | Accepted    |

The proposed conceptual model is shown in Figure 1 based on the acceptance of information theories. Users are more likely to carefully consider information on the web if the content is more detailed and has more user reviews than if the content is less detailed and has fewer user reviews. The constructs and hypotheses discussed below were used to formulate the study of both the direct effects of persuasive messages on the acceptance of information and attitude as well as their direct effects on follow with purchase intention (Sardar, A., Manzoor, A., Shaikh, K.A. and Ali, L., 2021). But if they can use heuristics to follow norms and spend less cognitive effort, people are more inclined to take the peripheral way (Meinert, J. and Krämer, N.C., 2022)

Teng et al. (2014a) contend that the four qualities of argument quality, source credibility, source attractiveness, and source perception are necessary for a message to be compelling and

travel the primary path. Therefore, Teng et al. (2014b) defined the persuasiveness of a communication as the capacity of an online message to be seen by those receiving it as a trustworthy source of information and capable of changing their attitude.

## **Methodology**

In order to test the theories developed for the study, a non-probabilistic sample of the population of interest was used in a survey. The proposed research subject has already been discussed in a respectable number of academic works, including papers that outline models that use some of the variables in discussion here (Rehm, J., Kilian, et.al. 2021). Online surveys were used to gather data. A survey instrument was created that contained eight questions about demographic factors and a total of 14 items that were measured using five-point Likert scales. 200 eligible responders made up the final sample.

Most of them were young, with the majority of responses falling between the ages of 20 and 24 (34%) and 25 and 29 (23%), respectively. It was 25.1 years old on average. If respondents follow social media influencers was a qualifying question on the online survey. They were thanked and excused from the survey if they replied "no." They could proceed and respond to the remaining questions if they selected yes.

## **Results**

### *Measurement model*

The study's findings show that when a follower of a social media influencer account sees a post on a good or service, they are likely to trust the influencer's reviews and be persuaded to follow them as a result. Followers of "Social media" have a more favourable attitude toward buying the suggested products because they find the messages there to be interesting.

According to studies, having a favourable attitude about the purchase increases one's intention to buy the particular good or service (Dwidienawati, D., Tjahjana, et.al., 2020). This study confirmed this association, with a magnitude of 0.73. This suggests that those who establish a favourable attitude toward buying things recommended by social media influencers are more likely to develop the intention to buy those products. According to Ajzen and Fishbein (1977), an attitude shift brought on by persuasive messaging can boost the desire to buy the product that the social media influencer has examined. However, this is not a need for a behaviour change to be positive to the object.

This finding demonstrates that in online shopping environments, trying to cultivate a favourable attitude about the goods and services in question is a useful strategy for influencing consumers' purchasing decisions. The quality of the argument, credibility, attractiveness, and impression of the source are only a few of the aspects of persuasive communications that can be used to set parameters for encouraging the creation of a positive attitude.



The most popular social media platforms were asked regarding usage frequency and the number of influencers each respondent followed. The most frequent apps mentioned by respondents were Tik Tok (M=4.54), Instagram (M=4.30), and YouTube (M=4.23). The least used platforms were Twitter and Facebook, with M=3.13 and M=1.30, respectively.

Although Tik Tok was the most popular, respondents follow influencers on Instagram, not Tik Tok. Depending on the social media platform, respondents followed a wide range of social media influencers (see Table 2). Instagram was the platform that the majority of respondents followed the most social media influencers, followed by Tik Tok and YouTube.

According to the hypothesis, social media influencers' attitudes will be favourably connected with their followers' buying intentions. In comparison to ad recognition (M=3.95, SD=.95), participants indicated a higher level of awareness (M=4.15, SD=.79). The results supported the favourable link between the two variables, awareness of sponsored endorsement and ad recognition ( $r(239)=-.205$ ,  $p .001$ ), as the correlation suggests .

Our first idea is supported by the positive association. The findings suggest that regardless of whether influencers declare receiving payment for their endorsement, followers are aware of this fact. The followers' understanding of the content's status as advertising is related to this awareness. As a result, fans will be prepared to digest the social media influencers' persuasive words.

The questions posed to the respondents focused on how attitude will influence the aspects of trust, commitment, satisfaction, and control reciprocity in an influencer-follower relationship. The findings revealed that none of the four aspects were associated to information acceptance.

It tends to be the aim of the followers who receive the information and have a favourable attitude toward purchasing the goods or services to do so. This demonstrates that a post on a "social media influencer" account has the potential to pique the interest and inspire consideration among its followers for the reviewed goods or services.

The information, reviews, and recommendations on goods and services can merge interactively and promptly with consumers through social media, creating a continuous flow of communication that affects people's attitudes during these interactions. The key things that attracted followers—sometimes in the millions—were the influencer's sense of style, his or her use of imagery, and their capacity to affect people's lifestyle decisions (YouGov, 2016).

On the other side, the findings revealed that ad recognition had no bearing whatsoever on the interaction between followers and influencers. This shows that the relationship between the follower and the social media influencer is unaffected by whether the post is perceived as an advertisement.

## **Conclusions**

In order to determine whether messages from an online social media influencer can affect how well individuals accept the information and change their attitudes toward consuming the products they have reviewed, this study set out to investigate how persuasive messages can affect consumers' purchase intentions. The assertion is that the persuasiveness of the messages can alter the attitude and buy intention of consumers, with theoretical and managerial ramifications, based on the ELM, which has two distinct routes to process information according to the underlying qualities of the message.

According to the survey, businesses should collaborate with social media influencers to get their items appraised and passed along to the following of the influencer. It is advised that marketers actively engage their clientele on social media platforms while working with social media influencers to encourage a more favourable attitude among users of online communities. As what they say might affect the purchasing behaviour of those who follow their postings on social media, social media influencers can also assess how pertinent their messages are to their followers.

According to the study, there are some factors that influence consumers' perceptions of a message's persuasiveness, including the message's quality (detailedness, dependability, relevance, timeliness, and comprehensibility) and the communicator's own characteristics (their competence and reliability, knowledge, previous experiences, pleasantness, empathy, and similarity of tastes with the reader of the messages). The social media influencer can craft their messaging to be even more compelling to the consumer by being aware of these factors.

To broaden the scope of the findings from this research, we advise doing investigations that extend the applicability of the proposed model to various social media influencer profiles on various online social media networks. Future studies might investigate other scales for the constructs included in the model put forth in this study; for instance, they might include further explanations for the construct "persuasive messaging" or look for more data on the construct "acceptance of the information."

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# Sentiment Analysis in Media and Communication Research: The concept of media influences sentiment builds up

Nursyamira Shaid

*First City University College, Bandar Utama, 47800 Petaling Jaya, Malaysia*  
*syamira.shaid@firstcity.edu.my*

## **Abstract**

Public's opinion today are easily captured and obtained provided the space of social interaction in almost every social media. Microblogging gave the opportunity to almost everyone to express their opinion through virtual public sphere. The sentiment of their opinion then influenced other users of the social media and together as an union, or a pack become a movement with solidarity react towards the subject. Sentiment analysis is commonly known as observing online conversations, contextual mining of text identifies and extracts subjective information from source material, assisting businesses in understanding the social sentiment of their brand, product, or service. The concept developed with the expend as part of public opinion branch of studies provided the ability of analyzing and handling big data and become one of important branch of study in social science, especially in the field of Media and Communication Studies. This paper will give an overview of sentiment analysis in the perspective of Media and Communication research and the application of this concept.

**Keyword:** Sentiment analysis, Public opinion, Opinion Mining

## **Introduction**

The web has undergone a significant transformation as a result of the social media's explosive growth (including blogs, microblogs, forum discussions, and reviews) over the past ten years. Today, billions of people worldwide are free to engage in a wide range of activities, including interacting, sharing, posting, and manipulating content. In contrast to the conventional structured data found in databases, this allows us to connect and communicate with one another whenever we choose, regardless of where we are (Beigi et al., 2016). In 2019, there were more than 2 billion active users on social media, with Facebook being the most popular site globally.

Social media became the focal point of public opinion development and sentiment building due to its large user base. The focal point of thoughts on topics discussed in social media posts is now the comment area. According to Althus and Tewksbury (2002), people's agendas are largely determined by how they absorb news, and the media is crucial in influencing public opinion (Brians & Wattenberg, 1996; Gerber et al., 2009). They find it difficult to make decisions or to select the best media in the high-choice media world of today. The public expressed their opinions through sentiment after seeing media content, hence there is a connection between media content and sentiment development. When there is uncertainty, people become more dependent on internet media for the latest information. Social media's utility as a medium of surveillance during natural catastrophes, environmental disasters, and other environmental and health concerns has been demonstrated (Finch, K.C., et al., 2016). Additionally, it increased in popularity as a new form of self-expression and communication. According to its definition as "technology," it allows for the user-to-user exchange of information, media, views, viewpoints, experiences, and insights (White, J. et al., 2013).

Interest in sentiment analysis has increased with the popularity of social media, particularly blogs and social networks. Online opinion has evolved into a kind of virtual currency for firms wanting to advertise their products, find new possibilities, and manage their reputations as a result of the explosion of reviews, ratings, recommendations, and other forms of online expression. Businesses are increasingly turning to sentiment analysis as a way to automate the processes of removing noise, comprehending discussions, finding valuable content, and acting on it accordingly (Wright, 2009). Sentiment analysis can be done manually, but it takes a lot of time to do it well and completely in a world of never-ending internet, broadcast, print, and social media output, which might delay or prevent the implementation of urgent response action. Automated sentiment analysis is made possible by artificial intelligence (AI) techniques, allowing it to be done across a variety of media and internet output for a variety of themes very fast and effectively. Sentiment analysis technologies can be used to filter through enormous volumes of published and broadcast reports and comments into "positive," "negative," and "neutral" categories.

Sentiment analysis viewed as a subfield of computational linguistics, natural language processing, data mining, machine learning, and which also incorporates components of sociology and psychology. Although the history of natural language processing (NLP) dates back to the 1950s, sentiment analysis and people's opinions received little attention until the 2005's (Yue et al., 2019). Sentiment analysis is becoming increasingly important due to the expansion of information available on social media; related studies have been classified into three key application areas: the commercial perspective, the political perspective, and the public security perspective (Yue et al., 2019).

For commercial perspective, public relations, media relations, and communication professionals shall use sentiment analysis to guarantee they are getting the most out of media monitoring and strategic planning. Sentiment analysis, which is what drives efficient media

monitoring, is the process of interpreting the meaning hidden in the words used in the media and online. It enables PR experts to assess if news stories, social media messages, or broadcasts are largely positive, negative, or neutral. Another significant element from a political perspective is the enormous demand for political information. People don't just use the internet to share their opinions for commercial purposes. Sociopolitical occurrences like the Arab Spring and the London Riots (Paltoglou, 2014) serve as vivid examples from the point of view of public security of the value of sentiment analysis. Online social media sites like Twitter and Facebook were seen as major factors in both instances in the emergence and spread of the events. Authorities can learn about this kind of sensitive material beforehand with the aid of sentiment analysis. If true, steps like shutting down Internet communication routes would stop terrorist sympathizers from using these services.

From the three perspectives above, it is seen that the importance of sentiment analysis is highly important in almost every aspect. Public opinions are analyzed and used for various purposes. As the media become the center of information acquisition and opinion mining for analyzing purposes, thus it plays a significant cognitive role for the users to obtain certain meaning and values (Scheufele & Tewksbury, 2007). Then it is undeniable that media has a significant influence towards the sentiment build up.

#### *Public Opinion and New Media*

According to early mass communication researchers, the power of the media allowed for the dissemination of ideas and have a significant impact on society (Lippman, 1922). According to Lippman, the mass media had a significant impact on how people perceived things since it is directly affected the general public. When elections were first held in America, the impact was immediately noticeable in the political sphere. The outcome of the media effect, or more precisely, the experimental media effect material that was employed in propaganda, was the ballot box. The public's decision to vote for their preferred candidate was determined to have been affected by propaganda that was delivered through pamphlets, posters, and newspapers. The vote represents popular opinion, which gave rise to Walter Lippman's (1922) introduction of the public opinion theory. The thesis outlined how the media influenced public opinion and how the latter influenced and formed the government that would rule a nation.

Public opinion on social media is now the primary decision-making reference source in many different fields (Tan et al., 2013). Businesses get customer input on their products, whereas politicians gather public opinion to change their positions. The study of public opinion is crucial since opinions now have a wider range of significance and can affect people's sense of security and serenity.

The influence of the media has grown to be a significant factor in how public opinion is formed. The media outlet's agenda-setting in reporting is the first step in the shaping of public opinion. The nature, ownership, and motivation of the media outlet determine the agenda.

The positioning of important topics determined by the media agenda allows for the manipulation and control of the public agenda by the media (McCombs & Reynolds, 2002). As a result, prominent media outlets around the world determine the agenda before the audience does.

Framing is yet another crucial element in the shaping of public opinion. Political issues are frequently framed to persuade voters to choose the competing candidates, as has been observed both internationally (Entman, 2010; Muiz et al., 2018; Tsarwe & Marwe, 2019) and in Malaysia (Hock & Hussein, 2011; Saravanamuttu, 2012; Manan, 2019). This is true regardless of whether the candidates were framed negatively or positively to the benefit of the public. Social desirability (Noelle-Neumann, 1992) is another factor in how public opinion is formed; it describes how one opinion becomes the majority opinion within a social group.

Public opinion formation has altered over the century along with changes in media availability, exposure, and environment. With the widespread use of social media, people can express their opinions and be reached with a single click in the digital era. As a result, the public is exposed to a range of viewpoints that include both positive and negative feelings about a subject. Early studies discovered that people referred to others' opinions through mediated communication, and that those opinions influenced their own opinions. (Gunther, 1992).

The media was not the sole source of information used to form opinions. One opinion is persuasively influenced by the assumptions and opinions of others. In today's social media, where people are free to express their views and opinions, others' opinions can be seen. Depending on the social media platform, a wider audience can be reached through the comment section, allowing users from around the world to voice their opinions, change their minds, or even virtually share their opinions.

It is obvious that online media has evolved into a platform for disseminating lies and inaccurate information, but social media's effectiveness as a platform for information exchange has become the medium's advantage. According to J. Clement (2020), social media is the most widely used online activity worldwide. In 2019, there were more than 2 billion active users on social media, with Facebook being the most popular site globally. Social media became the focal point of public opinion development and sentiment building due to its large user base. The focal point of thoughts on topics discussed in social media posts is now the comment area. According to Althus and Tewksbury (2002), people's agendas are largely determined by how they absorb news, and the media is crucial in influencing public opinion. (Brians, C.L. & Wattenberg, M.P., 1996; Gerber, A.S., Karlan, D., Bergan, D., 2009).

Therefore, the public has the right to pick the most efficient media to connect with the rest of the world. However, they find it challenging to make decisions or select the appropriate media in this atmosphere with numerous media options. The public expressed their opinions

through sentiment after seeing media content, hence there is a connection between media content and sentiment development. When there is uncertainty, people become more dependent on internet media for the latest information. Social media's utility as a medium of surveillance during natural catastrophes, environmental disasters, and other environmental and health concerns has been demonstrated. (Finch, K.C., et al., 2016). Additionally, it increased in popularity as a new form of self-expression and communication. According to its definition as "technology," it allows for the user-to-user exchange of information, media, views, viewpoints, experiences, and insights. (White, J. et al., 2013).

### *The Agenda Setting by The Media*

The agenda-setting strategy has created a bridge between the public and the media. The Maxwell McCombs and Donald L. Shaw (1972) model showed how public perception of an issue or piece of news depends on how the media reports it. The significance of the topic or news that is presented in the media is decided and shaped by it. As a result, the media reflects what people think. Through a cognitive process called "accessibility," also known as salience, people's thoughts will reflect the priorities of which news is shown first and then next. Three components make up the agenda-setting model: the media agenda, the public agenda, and the policy agenda.

The media's emphasis on certain issues affects how important those concerns are to the viewer. As a direct result of agenda creation, Iyengar and Kinder (1987) later claimed that the perceived importance of particular problems directly influences the public's assessment of political players. While making decisions, audience members base their judgement on the problems that are most important to them at the time. This is the second level of cognitive effect. Finally, an increasing body of research is devoted to the third type of cognitive effects. By presenting news in simple interpretive packages or frames, the media aims to both increase the salience of topics and decrease their complexity for their viewers. These frames simplify things, but they also work as interpretative shortcuts for audience members, prompting people to assign blame or make other judgements based on various frames or interpretations presented by mass media for the same factual content (Entman, 1993).

We all use our own frames in our communication in order to attain a specific understanding of the information, so framing cannot be denied as a component of human communication in the construction of any piece of transmitted information. (Scheufele, 1999). The study of the relationship between media and public opinion has been made possible by the idea of media framing, which has emerged as one of the key areas in the communication discipline. (De Vreese, 2005).

There is a connection between media representations and personal results. (Iyengar, 1991). The audience responds with the context of an issue at this point. Moving on to the final process, journalists as audience, it can be observed that the journalists are viewed in the same



way as the audience in situations where pressure, beliefs, and attitudes have an impact on how the issues are framed.

### **The Methodology: Sentiment Analysis Polarity**

Sentiment analysis on social media sites like Facebook and Twitter has developed into a powerful tool for understanding public sentiment and has a wide range of applications. However, sentiment analysis is less effective and accurate due to the challenges with natural language processing (NLP). Deep learning models have recently been shown to provide a potential solution to the problems with NLP. (Dang et al., 2020). Governments embrace public opinion analysis because it describes human conduct and activity as well as how it is influenced by other people's viewpoints. Sentiment analysis uses data from online social media, which generates an ever-increasing volume of data. (SA). In order to achieve effective data storage, access, and processing, as well as to ensure the veracity of the findings obtained, these kinds of data sources must be regarded as a component of the big data strategy. As a result, additional considerations must be addressed. (Thai et al., 2016).

The sentiment analysis of the comments taken from the official Facebook pages of traditional and independent online news sources. conducted on the first level of sentiment analysis, emphasising the polarity of the sentiment in the comments. Three categories make up the sentiment's polarity: positive, negative, and neutral (Watimin, N.H. & Zanuddin, H., 2017 & Zanuddin, H., & Watimin, N.H., 2017). Application Program Interface (API) webtools were required for five processes in categorising sentiment polarity. These are the five steps:

1. Data mining – comments extraction
2. Data cleaning
3. Data translation
4. Sentiment analysis – polarity

Based on the selection of news material from both categories, data mining was carried out. Online news is available on the official Facebook page in addition to being released on their websites. Using online-available Facebook comment extraction tools, comments from all chosen news postings were extracted. You can utilise the comment exporter and access it at [exportcomments.com](http://exportcomments.com) by entering the Facebook postings' universal resource location (URL) link.

The file is ready to be downloaded as an excel file after the exportation process is complete. The process of extracting comments is aided by the comment exporter program. Big data mining needs specialized support because it is difficult to manage big data manually.

Exported comments are set up in an excel file with eight columns that include the name of the commenter on Facebook, the ID of their Facebook profile, the date on which the comments

were made, the remarks themselves, and a link to the comment on Facebook. The second stage, data cleansing, is now being applied to the comments. Data screening is a step in the process that removes extraneous comments that could skew the results. To accomplish this, special characters, emoji, and hyperlinks must be removed. The ultimate number of comments for further study will be determined by data cleaning.

Once the data have been thoroughly cleaned, the next stage involves using a Language Detection API to identify foreign languages. (other than English). Sentiment Analysis API can only identify English words because all of the comments are primarily in Malay, which takes us to the fourth stage of translation. Using the Translate API, all Malay comments were converted to English. However, human involvement was required once more to manually edit the translation to assure accuracy.

The final stage comprises categorizing the extracted comments' polarity as positive, negative, or neutral using Sentiment Analysis API Webtool, which has been shown to be more accurate than baselines created by humans (Pang et al., 2002). The most crucial part of sentiment analysis is figuring out how sentiments are expressed in texts and whether they indicate favorable (positive) or unfavorable (negative) views towards the topic. (Nasukawa & Yi, 2003). Document polarity classification is a significant challenge for data-driven systems since it defies conventional text-categorization methods. (Pang et al., 2002).

## **Conclusion**

The ability of the news media to affect "the value individuals attribute to specific views" is what gives it the power to affect how people perceive a topic or event. (Nelson & Oxley, 1999). Numerous studies conducted by earlier well-known media scholars have shown that news media may affect public views in a variety of ways, including setting the public agenda, encouraging people to think about particular issues, and persuading them to support causes, mostly in the political sphere. (Dalton et al., 1998; Iyengar & Kinder, 1987).

The news's coverage of particular situations and themes, particularly touchy ones that put lives in danger or are also known as humanitarian crises, is crucial. Public opinion is subsequently impacted by the decision made by journalists when reporting on a topic and the narrative they opt for when covering a story. (Entman, 1993; Scheufele, 1999). By leveraging social media as a vehicle for information transmission, the media has framed news in a way that captures the essence of the sentiment that the public has developed in these platforms. Public emotions are captured in social media and disseminated through social media as social media becomes an essential tool for information sharing and online consumption.

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# Plasma Focus Ion Beam Properties – Validation of Lee Code Computations by Faraday Cup Measurements

S Lee<sup>1,2,3,\*</sup>, V Damideh<sup>1</sup>, O H Chin<sup>1</sup>, S H Saw<sup>2,3,4</sup>, P C K Lee<sup>5</sup>, R S Rawat<sup>5</sup>, A Singh<sup>3</sup>,  
<sup>1</sup> *Plasma Technology Research Centre, University of Malaya, 50603 Kuala Lumpur, Malaysia*  
<sup>2</sup> *Institute for Plasma Focus Studies, 32 Oakpark Drive, Chadstone, Vic 3148, Australia*  
<sup>3</sup> *INTI International University, 71800 Nilai, Malaysia*  
<sup>4</sup> *First City University College, Bandar Utama, 47800 Petaling Jaya, Malaysia*  
<sup>5</sup> *Radiation Sources Laboratory, National Institute of Education, Nanyang Technological University, 637616 Singapore*  
 \*corresponding author

## Abstract

A 2012 paper (Lee & Saw, 2011) proposed and computed the flux (number of beam ions  $\text{m}^{-2}\text{s}^{-1}$ ) and fluence (number of beam ions  $\text{m}^{-2}$ ) as the reference quantities to characterise fast deuteron beams from the plasma focus. A 2013 paper (Lee & Saw, 2013) extended this concept to all gases. These ideas were implemented in a variant of the Lee code (Lee, 2014) producing results for fast ion beams FIB emitted from plasma focus operating in D, He, N, Ne, Ar, Kr and Xe. The code results are for FIB at pinch source. In practice the FIB diverges and disperses as it moves away from the pinch towards any measurement devices such as a FC (Faraday Cup). To compare the Lee code results with FC measurements the divergence and dispersion need to be factored in. In this paper the dispersion factor is measured. The divergence angle is treated as a fitting parameter to obtain computed beam ion fluence and flux at the FC position. The computed values are compared with FC measurements in D, Ne & Ar. Agreement is found for the fluence and flux versus pressure graphs of the code compared to the measured results when the half divergence angles are chosen within a reasonable range of  $1.6^\circ - 6^\circ$  over the range of experiments. For all these 3 gases there is agreement in both trend and absolute values. The results of these FC measurements are interpreted as validation of the Lee code computation of ion beam properties.

## Introduction

Fast ion beams FIB emitted from plasma focus are important for the many effects they generate. In deuterium, the FIB is the primary agent for the D-D fusion (Jain *et al.*, 2018; Krishnan, 2012). In other gases the FIB is useful in applications varying from thin film fabrication and surface modification of special materials (Rawat, 2017) to damage testing of prospective materials for plasma facing walls in fusion reactors (Gribkov, 2015; Akel *et al.*, 2016). However unlike neutrons and x-rays which are relatively better understood from computations and experiments (Jain *et al.*, 2018) to the extent of the formulation of their scaling laws, results of experiments on FIB have hardly been correlated among themselves or with simulations (Akel *et al.*, 2016; Akel *et al.*, 2017), with many measurements being diversely expressed in terms of number  $\text{sr}^{-1}$ ; bunch power in W,

beam power brightness in  $\text{GW cm}^{-2} \text{ sr}$ , ion current densities in  $\text{A cm}^{-2}$ , ion densities in  $\text{m}^{-3}$ , tracks  $\text{m}^{-2}$ , ions/sr, J/sr, total ion numbers, flux in  $\text{m}^{-2}\text{s}^{-1}$ , or ion fluence in  $(\text{MeV}\cdot\text{sr})^{-1}$  (Jain *et al.*, 2018; Takao *et al.*, 2003; Bostick *et al.*, 1993). A 2012 paper by Lee and Saw (Lee & Saw, 2011) proposed the flux (number of beam ions  $\text{m}^{-2}\text{s}^{-1}$ ) and fluence (number of beam ions  $\text{m}^{-2}$ ) as the reference quantities to characterise fast deuteron beams from the plasma focus. That paper also computed the properties of FIB for operation in D. A 2013 paper (Lee & Saw, 2013) extended this concept to all gases. These ideas were implemented in a variant of the Lee code (Lee, 2014), producing results for fast ion beams FIB emitted from plasma focus operating in D, He, N, Ne, Ar, Kr and Xe. The code results are for FIB at pinch source.

In practice the FIB diverges and disperses as it moves away from the pinch towards any measurement devices such as a FC (Faraday Cup). In this paper the Lee code results are compared with FC measurements. To do this the divergence and dispersion of the FIB need to be factored in. In this paper the dispersion factor is measured. The divergence angle is treated as a fitting parameter to obtain computed beam ion fluence and flux at the FC position. The computed values are then compared with FC measurements in D, Ne & Ar. The ion beam numerical experiments add on as a branch to the integrated view which our numerical experiments strive to present of the plasma focus. The scope and application of the code is illustrated in Fig1. The use of the Lee Code to design plasma focus and to provide diagnostic reference values for dynamics including axial and radial speeds and energy distributions, plasma densities and temperatures and scaling of neutron and soft x-ray SXR yields are well documented in many devices and experiments (Lee, 2014 and Rawat 2017). Its use to study radiatively-cooled and radiatively-collapsed high energy density plasmas (Rawat, 2017; Akel *et al.*, 2016) is relatively new with not as yet widely accepted reliable experimental data, as is the use of the code to study FIB and streaming plasmas (Lee & Saw, 2011; Lee, 2014; Akel *et al.*, 2017; Akel *et al.*, 2016).

This paper goes some way to provide conclusive experimental results to validate the Lee Code in terms of FIB characterization.

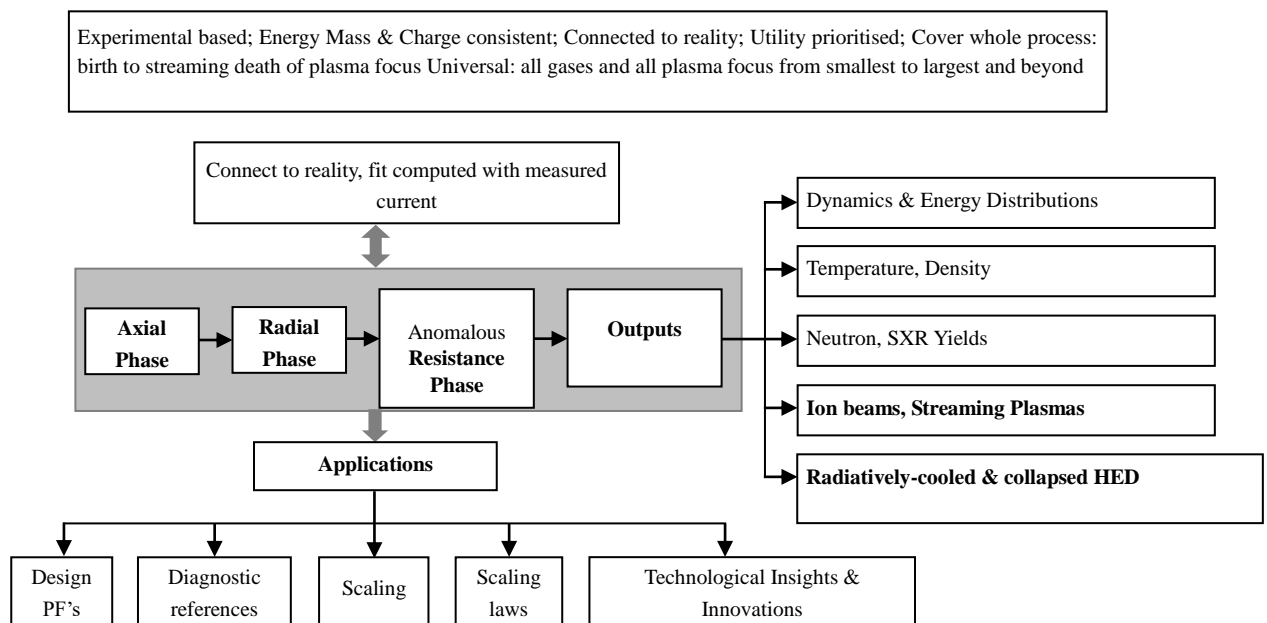


Fig 1. Chart showing basis of Lee code and wide coverage of results

### Ion beam flux and fluence equations

The basic physical picture of the plasma focus relating to its calculation of FIB is presented in Fig 2 depicting the propagation of FIB through the post-pinch plasma focus according to a diode causative mechanism proposed by (Gribkov *et al.*, 2007; Pimenov *et al.*, 2022).

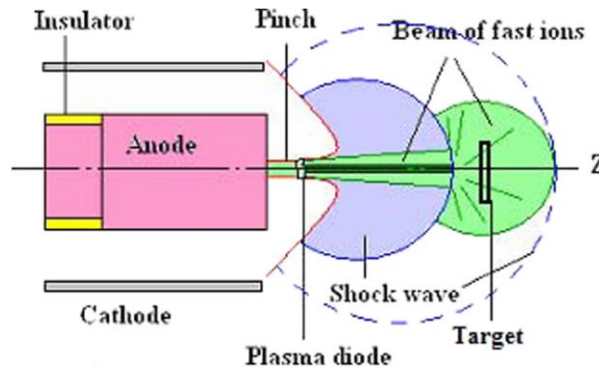


Fig. 2. Schematics of FIB according to Pimenov *et al.*

Following (Lee & Saw, 2013) the starting point for the derivation of the FIB flux equation is:

$$\text{Ion beam flux, assumed uniform across the beam is } J_b = n_b v_b \text{ ions per m}^{-2} \text{ s}^{-1}, \quad (1)$$

where  $n_b$  = number of beam ions  $N_b$  divided by volume of plasma traversed and  $v_b$  = effective speed of the beam ions. All quantities are in SI units, except where otherwise stated.

The FIB density  $n_b$  is derived from pinch inductive energy considerations where a fraction  $f_e$  of inductive pinch energy is assumed to be converted to kinetic energy of the beam ions. The voltage driving the beam is  $U$  derived from inductive considerations of diode mechanism.

The resulting FIB flux is:

$$\text{Flux} = J_b = 2.75 \times 10^{15} (f_e / [M Z_{\text{eff}}]^{1/2}) \{ (\ln[b/r_p]) / (r_p^2) \} (I_{\text{pinch}}^2) / U^{1/2} \text{ ions m}^{-2} \text{ s}^{-1}. \quad (2)$$

$$\text{Fluence} = J_b \tau \text{ ions m}^{-2}, \quad (3)$$

where  $\tau$  is the duration of the FIB pulse,  $M$  = molecular weight,  $Z_{\text{eff}}$  = effective charge number,  $r_p$  is minimum pinch radius,  $I_{\text{pinch}}$  is pinch current and  $U$  is the beam ion energy.

By analyzing neutron yield data (Lee & Saw, 2011; Lee, S., & Saw S. H. 2008) and pinch dimensional and temporal relationships (Lee, S. & Serban. 1996) the value of  $f_e$  is set as 0.14. This is equivalent to ion beam energy of 3%-6%  $E_0$  in the case when the pinch inductive energy holds 20% -40% of  $E_0$  where  $E_0$  is the energy stored in the capacitor bank. This estimate of  $f_e$  is consistent with the range of available data.

The diode voltage  $U$  is proportional to the maximum induced voltage  $V_{\max}$ ; with  $U = 3V_{\max}$ , consistent with global data fitting in extensive numerical experiments (Lee,S.,&Saw S. H. 2008).

### The Experiment

The experiment is carried out in the INTIPF (Saw&Lee,2016) which is a version of the UNU ICTP PFF (Favre et al., 1992; Lee & Wong, 2006) The Faraday Cup FC (Damideh *et al.*, 2017) is mounted as shown in Fig3. The INTI PF has the following parameters:

Tube: cathode radius  $b = 3.4$  cm, anode radius ‘ $a$ ’ = 0.95 cm, anode length  $z_0 = 16$  cm.

Bank: capacitance  $C_0 = 30$ F, static inductance  $L_0 = 110$  nH.

For these experiments it is operated at charging voltage  $V_0 = 12$  kV and at various pressures in D, Ne and Ar. With each gas, the range of pressures covers the low pressure operation leading to the optimum focus pressure as well as the high pressure range after the optimum focus pressure.

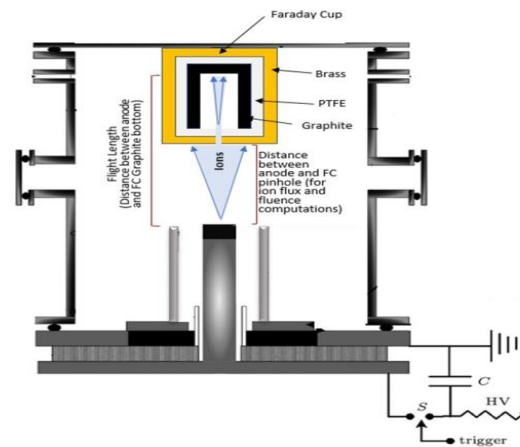


Fig. 3. Faraday Cup (FC) mounted to measure INTIPF beam ions

For each discharge, the following are measured: peak ion current  $I_{\text{ion}}$  in A and ion pulse duration  $\tau_{\text{FIB}}$  taken as the FWHM of the ion pulse in ns.

The FIB current density at the FC,  $J_{\text{FC}}$  is calculated:

$$\text{Current density } J_{\text{FC}} = I_{\text{ion}} / (\pi \times 10^{-8}) \text{ Am}^{-2} \tag{4}$$

Noting that the FC aperture is 200micron radius =  $10^{-4}$  m

Thus Ion Flux from FC measurement is:

$$\text{measFlux}_{\text{FC}} = J_{\text{FC}} \times 6.24 \times 10^{18} / Z_{\text{eff}} \quad \text{ions m}^{-2}\text{s}^{-1}, \tag{5}$$

where  $Z_{\text{eff}}$  is the effective charge of the FIB ion. The corresponding measured fluence  $\text{measFluence}_{\text{FC}}$  is also obtained according to Eq (3) by multiplying  $\text{measFlux}_{\text{FC}}$  by the measured FIB pulse length.

Complementing the FC measurements, the Code is configured to the experiment by fitting the computed current to the measured current for the particular discharge. From the fitted code the following values are obtained for that particular discharge:  $Z_{\text{eff}}$ , maximum induced voltage  $V_{\max}$ , minimum pinch radius  $r_{\text{min}}$  and pinch duration  $\tau_{\text{pinch}}$ .

The value of  $Z_{\text{eff}}$  is used in Eq (Jain *et al.*, 2018) to complete the measurement of the ion



flux at FC. The value of  $3V_{\max}$  is taken as the computed value of the FIB ion energy. The value of  $r_{\min}$  is taken as the radius of the FIB at pinch source and the value of  $\tau_{\text{pinch}}$  is taken as the time duration of FIB pulse at pinch exit  $\tau_{\text{atpinch}}$ . These values of  $r_{\min}$  and  $\tau_{\text{atpinch}}$  are required for the calculation of the divergence and dispersion factors described in a paragraph below. The computed values of the flux and fluence at the pinch exit are also obtained.

The ion beam diverges and disperses as it traverses from the pinch exit PE to the position of FC. We assume that the beam profile is uniform across the FIB. The implication of this assumption is considered in the concluding section of this paper. The geometry of the divergence is shown in Fig 4.

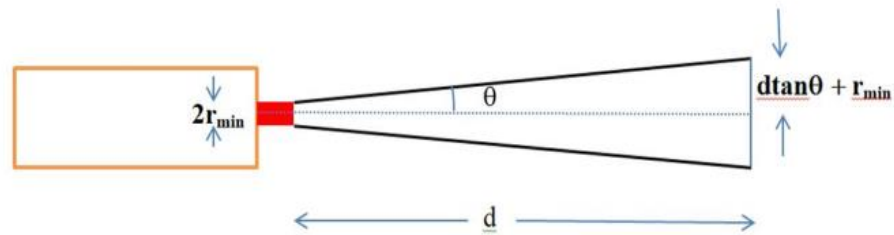


Fig.4 Geometry of ion beam divergence

The code- computed value of FIB flux at pinch exit which we designate as  $\text{codeFlux}_{\text{FC}}$  is converted to the diverged and dispersed Flux  $\text{codeFlux}_{\text{PE}}$  at position FC as follows:

$$\text{codeFlux}_{\text{FC}} = \text{codeFlux}_{\text{PE}} \times f_A \times f_t \quad (6)$$

beam area ratio  $f_A = [r_{\min} / (r_{\min} + d \tan \theta)]^2$  ; is the half angle of beam divergence (see Fig 4),

beam dispersion ratio  $f_t = (\tau_{\text{atpinch}} / \tau_{\text{atFC}})$ .

where  $\tau_{\text{atpinch}}$  is the code-computed ion beam pulse length at position of pinch exit discussed earlier and  $\tau_{\text{atFC}}$  is ion beam pulse length measured at FC.

This value of FIB flux  $\text{codeFlux}_{\text{FC}}$  is then compared with  $\text{measFlux}_{\text{FC}}$ , the value of the FIB flux measured at the FC (Eq 5 above).

## Experimental results

A typical set of data is shown in Fig 5 for Ar at 1 Torr. Fig 5a shows the discharge current and the FC signal over the first 4.5 of the discharge. Fig 5b shows an expanded view of Fig 5a for the period of 4.15 to 4.45. Fig 5c shows a further expanded selection of the FIB ion signal for the period 4.12 to 4.42. The x-ray pulse is identified in Fig 5c, as is the FIB pulse, and the time difference between the x-ray peak and the peak of the FIB enables the time- of- flight (ToF) of the ions over the 10.2 cm distance between pinch exit PE and FC to be measured, thus characterising the FIB ion energy. The peak of the ion pulse enables the peak FIB ion current density to be measured whilst the FWHM time of the ion pulse is taken to be the dispersed pulse length of the FIB ion pulse at the position of the FC. This quantity is used to obtain the dispersion factor required for evaluating  $\text{codeFlux}_{\text{FC}}$  as well as to obtain the measured value of the Fluence from  $\text{measFlux}_{\text{FC}}$ . Detailed analysis of Fig 5c also enables the dispersion curve  $dN/dE$  versus  $E$  for the FIB ions to be obtained, which is shown in Fig 5d.

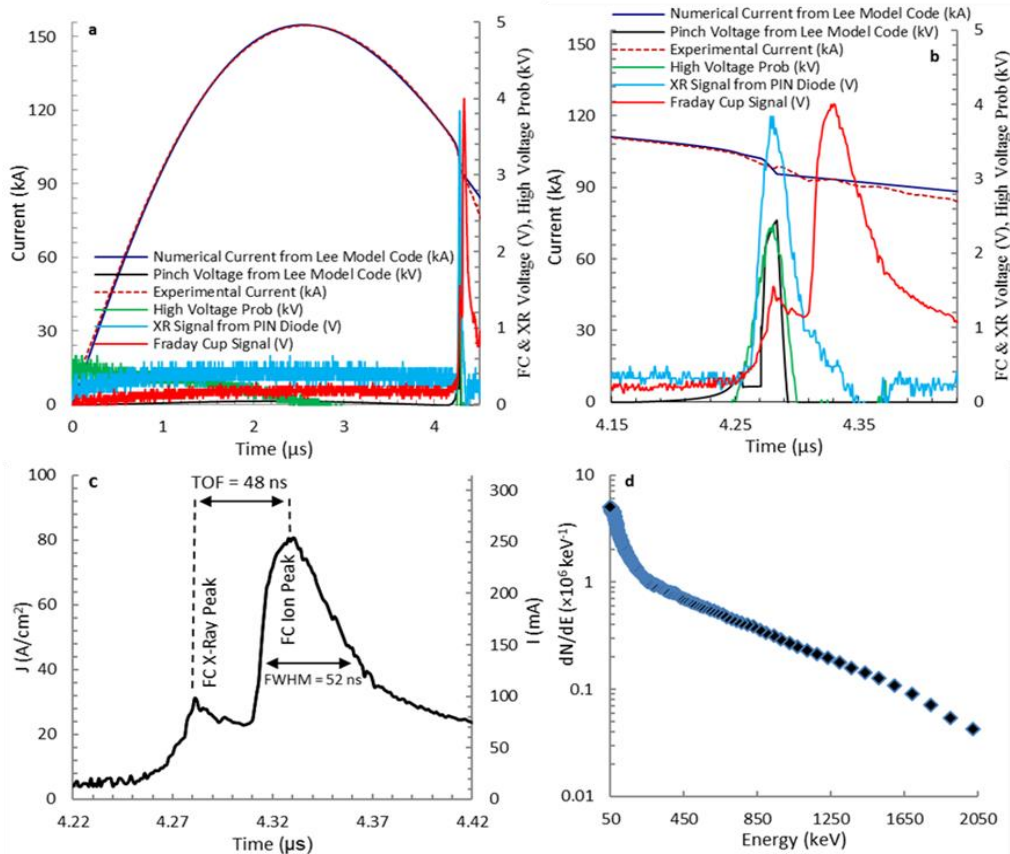


Fig 5. Experimental data sample INTIPF 12 kV Ar 1 Torr : current fitted by Lee Code: Current, PIN diode, FC & high voltage probe signals; 5a: Current fitting, 5b: Expanded experimental and numerical signals, 5c: FC signal, 5d:  $dN/dE$  versus ion energy

### Results for Argon: Beam ion energy, flux and fluence

Fig 6 (a) shows comparison of the measured Time-of-flight (ToF) values for Ar in the range of pressures 0.3 to 1.5 Torr and the code-computed values. Figure 6 (b) shows comparison of the measured energy (derived from measured speed) with the code values. For both quantities the agreement is within experimental uncertainty in the trend with pressure, as well as in absolute values, except in the low pressure range of 0.3 – 0.6 Torr.

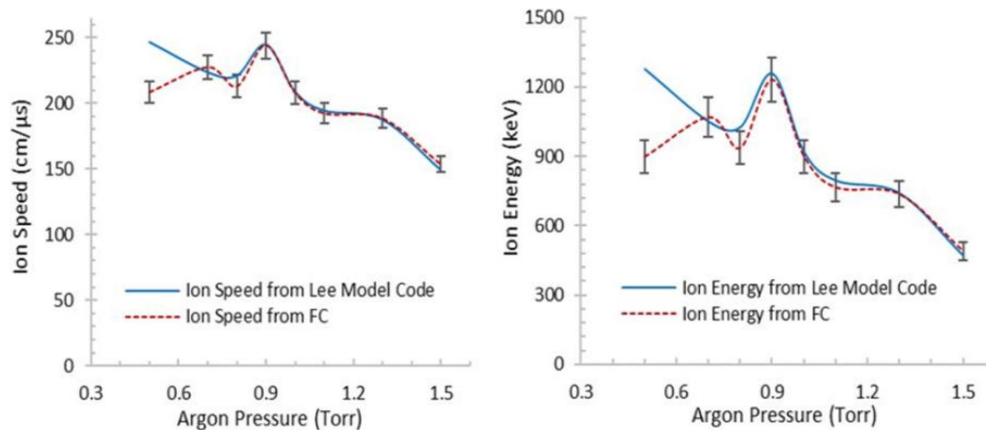


Fig 6. Compare FC ToF measured values with code values: (a) Ar FIB ion speed (b) Ar FIB ion energy

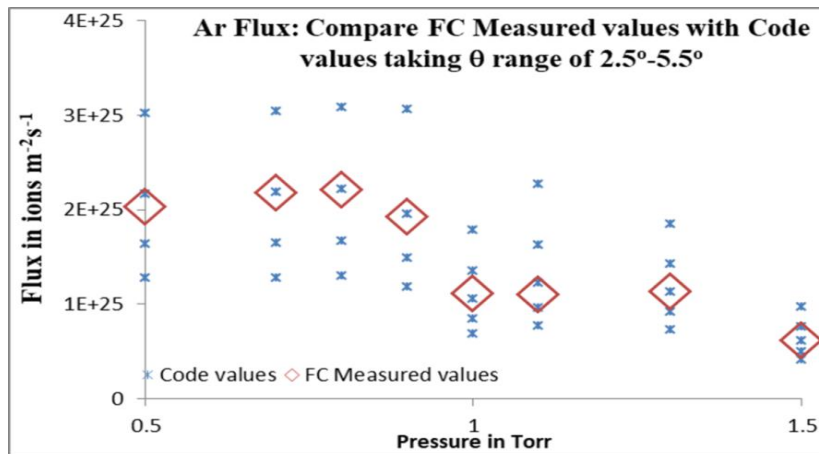


Fig 7. Ar ion flux:  $^{meas}Flux_{FC}$  compared with  $^{code}Flux_{FC}$  values, using a range of  $\theta$  of  $2.5^\circ - 5.5^\circ$

For each pressure the  $^{meas}Flux_{FC}$  value is measured using Eq (5) . The code value of the FI ion flux  $^{code}Flux_{FC}$ , at the position of the FC however depends on the value of the divergence half angle according to Eq (Krishnan, 2012). In order to compare we first plot the curve of  $^{meas}Flux_{FC}$  versus pressure. Each measured point is represented by a rectangle placed with one diagonal vertically and the other horizontally. The length of each diagonal represents the experimental uncertainty. We then compute the range of needed to scatter the values of the  $^{code}Flux_{FC}$  equally above and below the value of  $^{meas}Flux_{FC}$ . Then we plot several representative values (typically 4) covering the whole range of  $\theta$ . The result is shown in Fig 7. Over the whole graph the range of that is used is found to be  $2.5^\circ - 5.5^\circ$ .

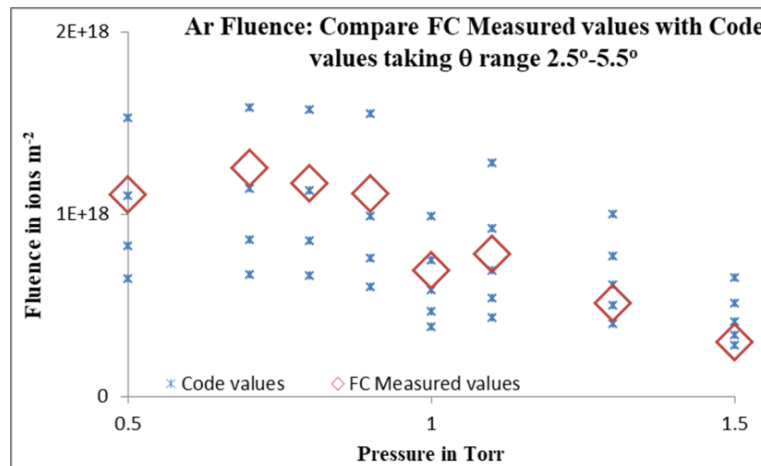


Fig 8. Ar ion fluence:  $^{meas}Fluence_{FC}$  compared with  $^{code}Fluence_{FC}$  values, using a range of  $\theta$  of  $2.5^\circ - 5.5^\circ$

To compare the fluence, the same procedure is used. At each pressure, the measured FIB fluence  $^{meas}Fluence_{FC}$  is obtained by multiplying the corresponding  $^{meas}Flux_{FC}$  with the measured FIB pulse duration  $\tau_{atFC}$  . The curve of  $^{meas}Fluence_{FC}$  versus pressure is plotted. For each point, we then compute the range of  $\theta$  needed to scatter the values of the  $^{code}Fluence_{FC}$  approximately equally above and below the value of  $^{meas}Fluence_{FC}$ . Then we plot several representative values (typically 4) covering the whole range of  $\theta$ . The results are shown in Fig 8. Over the whole graph the range of that is used is found to be  $2.5^\circ - 5.5^\circ$ .

### Results for Neon: Beam ion energy, flux and fluence

Fig 9 shows the comparison for ToF measurements of speed and energy for FIB ions in Ne compared with code values. Reasonable agreement between the measured values and the code values is noted.

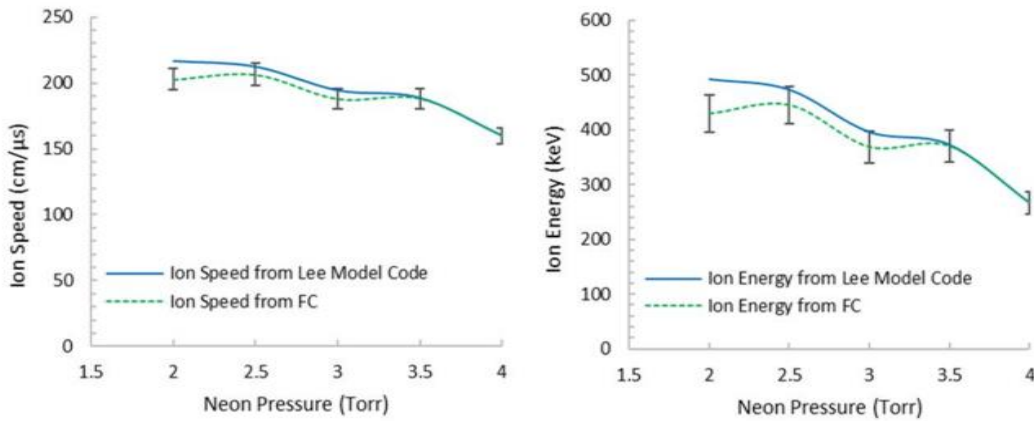


Fig 9. Ne ion speed and energy: Compare FC ToF measured values with code values

Figures 10 and 11 present the measured values of flux and fluence for neon versus pressure, and comparison with the code values taking the divergence angle  $\theta$  as a fitting parameter, as already discussed above in the case of Ar, to find the range  $\theta$  of that will scatter the code value of flux and fluence equally about each measured value. It is found that for neon, the range of  $\theta$  over all the pressures is  $3^\circ$ - $6^\circ$ .

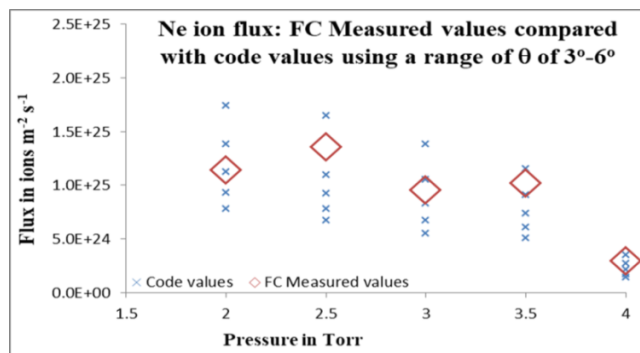


Fig 10. Neon ion flux:  $^{meas}Flux_{FC}$  compared with  $^{code}Flux_{FC}$  values, using a range of  $\theta$  of  $3^\circ$ - $6^\circ$

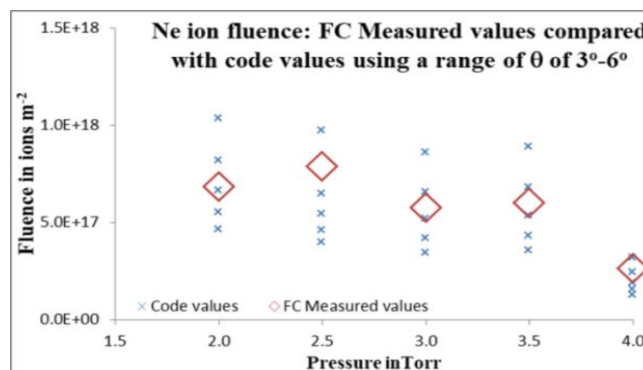


Fig 11. Ne ion fluence:  $^{meas}Fluence_{FC}$  compared with  $^{code}Fluence_{FC}$  values, using a range of  $\theta$  of  $3^\circ$ - $6^\circ$

### Results for Deuterium: Beam ion energy, flux and fluence

Figure 12 shows the comparison of measured and code values for FIB ion energies for deuterium. Good agreement is obtained except at the lowest pressure of 2 torr.

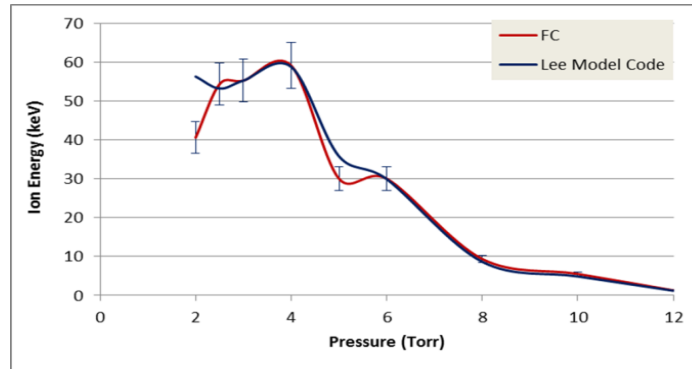


Fig 12. D ion energy: Compare FC ToF measured values and code values

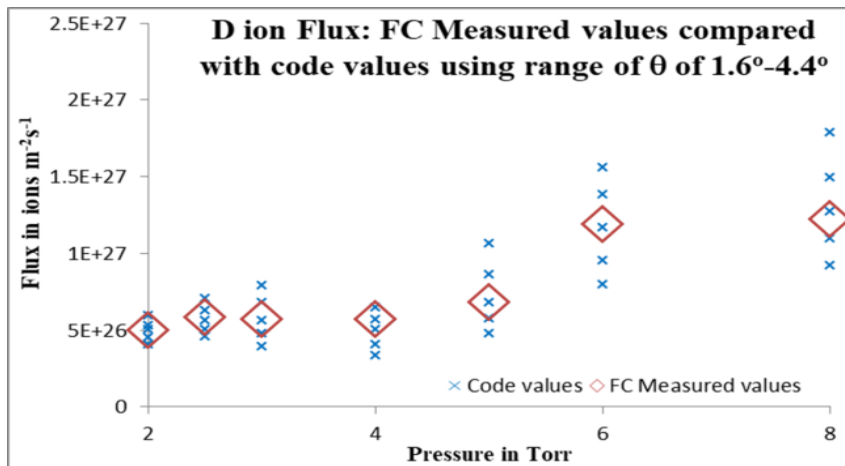


Fig 13. D ion flux: <sup>meas</sup>Flux<sub>FC</sub> compared with <sup>code</sup>Flux<sub>FC</sub> values, using a range of  $\theta$  of 1.6°- 4°

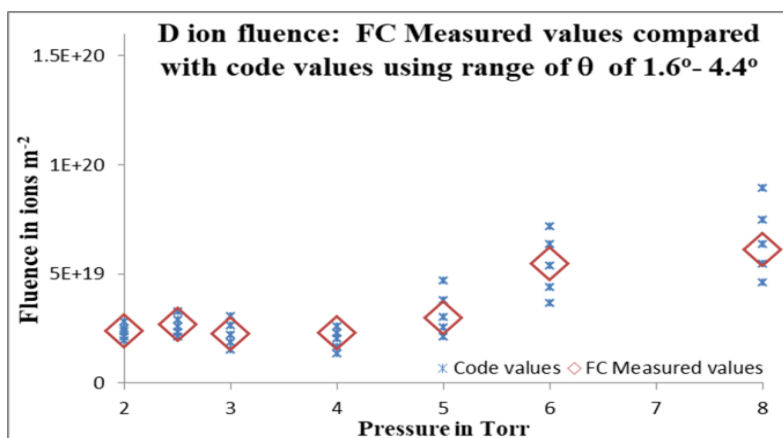


Fig 14. D ion fluence: <sup>meas</sup>Fluence<sub>FC</sub> compared with <sup>code</sup>Fluence<sub>FC</sub> values, using a range of  $\theta$  of 1.6°- 4.4°

Figures 13 and 14 show the comparison of measured flux and fluence in deuterium

compared with the code values over the range of pressures taking  $\theta$  as fitting parameter. It is found that over the whole range of pressures the fitted range of  $\theta$  is  $1.6^\circ$  to  $4.4^\circ$ .

### Summary for all 3 gases:

For the 3 gases over the whole range of pressures studied, the appropriate range of  $q$  is found to be:  $1.6^\circ - 6^\circ$ . If the half angle of divergence  $q$  for the FIB in all our observed discharges is within this range, then there is good agreement for all the measured and code-computed flux and for all the measured and code-computed fluence. The question then arises: Is this range of half divergence angle reasonable compared to published results and experience? It is generally accepted that  $\theta$  is characterised by a value of less than 20 degrees (Rawat, 2017). For example Bhuyan et al mentions a value of  $15^\circ$  for a small PF operated in methane (Bhuyan et al., 2006) whilst a cone angle value of  $5^\circ$  is mentioned for the predominant component of the beam, ions with energy in the order of 100 keV (Gribkov, 2015) which is relevant to this situation we are discussing. Experimental experience in INTI PF mainly in the context of studying the effects of beams on material surfaces for the purpose of hardening and advanced film preparation suggests a value of  $\theta$  of  $1.5^\circ - 5^\circ$  for deuterium and nitrogen under strong focus conditions (Saw et al., 2017; Teh et al., 2019). Thus the range of  $\theta$  of we have found required for fitting our results of  $1.6^\circ - 6^\circ$  for the D, Ne and Ar over their operational ranges appear to be consistent with experimental experience, especially with the INTIPF on which our present results are obtained.

### Error analysis

Over the range 0-20 degrees,  $\tan\theta$  is proportional to  $\theta$ . So an angular range of  $1.6^\circ$  to  $6^\circ$  implies a range of factor of 4 for the divergence. Thus the scatter in those graphs of flux and fluence is within factor of 4 from edge to edge of each band.

Moreover, the FC measured values fall in each case close to the centre of the band. This implies that the code computed values fall within a factor of less than 4 (likely agreement is better than factor of 2) when compared to the measured values. A study of the hardness profile of beam impacted sample (Teh et al., 2019) gives an idea that the assumption of a uniform profile across the beam should not affect the results by much and any likely inconsistency of the assumption should not change this factor of 2. In terms of PF shot-to-shot variability, the INTI PF (which is one of the UNU/ICTP PFF machines) has a shot-to-shot variability within a factor of 2 in terms of focus strength measured by a number of indicators including for example neutron yield and soft x-ray yield. Thus an agreement of the code-computed values of FIB flux and fluence with the measured values to within a factor of 2 is about the best that can be expected.

### Conclusion

The FC ToF measurements agree generally with the code results for ion speed and energy. The FC measured fluence and flux in various gases D, Ne and Ar over the whole range of operational pressures agree with the code-computed results to within reasonable limits. Thus these results may be interpreted as agreement between our code-computed flux and fluence and the corresponding measured FC values. These results validate the

Lee code for estimation of gross beam ion properties for various gases, adding to the validity of the Lee Code as shown in Fig 1.

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# Practical Range of Ozone Concentration Simulation for Transmissive Gas Cells

Tay Ching En Marcus<sup>1</sup>, Mohd Haniff Ibrahim<sup>2</sup>, Nor Hafizah Ngajikin<sup>3</sup>, Asrul Izam Azmi<sup>2</sup> and Michael David<sup>4</sup>

<sup>1</sup>*Faculty of Engineering and Computing, First City University College,*

<sup>2</sup>*Department of Communication Engineering, Faculty of Electrical Engineering,  
Universiti Teknologi Malaysia*

<sup>3</sup>*Department of Electrical Engineering, Faculty of Electrical and Electronic Engineering,  
Universiti Tun Hussein Onn Malaysia (UTHM)*

<sup>4</sup>*Department of Telecommunication Engineering, School of Electrical Engineering and Technology,  
Federal University of Technology, Nigeria.*

<sup>1</sup>Corresponding author's email: [marcus.tay@firstcity.edu.my](mailto:marcus.tay@firstcity.edu.my)

## **Abstract**

Gas cells of different length have been previously designed for measurement of ozone through ultraviolet absorption spectroscopy, but each gas cell is used for measurement of single range of concentration only. In current work, practical ranges of ozone concentration measurement for transmissive gas cells between 0.05 m and 0.50 m are theoretically calculated and verified via SpectralCalc.com gas cell simulator. Selections of optical path length and concentration range to be considered practical are justified. Gas cell of optical path length 0.05 m is found to be practical for measurement between 3.57 ppm and 471.61 ppm. Decrease of range of concentration measurement is observed when optical path length is increased from 0.05 m to 0.25 m. However, further increase of optical path length beyond 0.25 m has small effect on reduction of dynamic range of concentration.

**Keywords:** Concentration, Transmissive Gas Cell, Optical Path Length, Ozone, Range, Simulation, Ultraviolet Absorption Spectroscopy

## **Introduction**

Ozone is a colourless oxidizing gas, but has a pungent smell. In nature, ozone exists at stratosphere to absorb harmful ultraviolet radiation from reaching the earth. In practice, ozone is generated on site at different concentration for specific application. For example, 0.025 g m<sup>-3</sup> to 0.045 g m<sup>-3</sup> of ozone is applied for preservation of tomatoes (Venta M. B. *et al.*, 2010); whereas, 10 g m<sup>-3</sup> to 50 g m<sup>-3</sup> of ozone (Rivas J. *et al.*, 2009) is used for wastewater recycling. The concentration difference between these two applications is more than 400 times. Therefore, there is a need to design an ozone sensor for specific range of concentration measurement.

Gas cells of length between 5 cm and 63 cm have been designed for ozone concentration measurement through absorption spectroscopy (Aoyagi Y. *et al.*, 2012; Degner M. *et al.*, 2009, 2010; Maria L. D. *et al.*, 2008; Maria L. D. and Bartalesi D., 2012); O’Keeffe S. *et al.*, 2005a, 2005b, 2007, 2008; Teranishi K. *et al.*, 2013). Some of the previous work utilize transmissive type gas cell (Aoyagi Y. *et al.*, 2012; O’Keeffe S. *et al.* 2005a, 2005b, 2007; Teranishi K. *et al.*, 2013). Gas cell has specific optical path length for specific range of measurement of ozone concentration only. Therefore, objective of current work is to determine practical range of ozone concentration that is measurable using transmissive gas cells between 5 cm and 50 cm. Current work is useful for researchers or ozone analyzer manufacturers to design transmissive gas cell for specific range of ozone concentration measurement.

### Theoretical Analysis

#### Transmissive Gas Cell

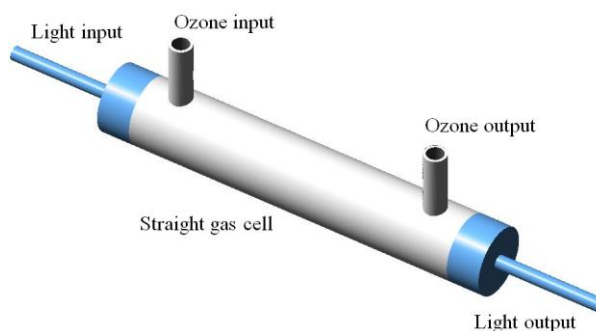


Figure 1. Transmissive gas cell modelled using Zemax Part Designer. Light from optical fiber interacts with ozone sample in a straight gas cell.

Figure 1 shows transmissive gas cell in current work. It consists of a cylindrical gas cell that contains sample ozone gas. Intensity of light decays exponentially as it passes through sample gas for specific length. This may be theoretically explained through Beer–Lambert law.

#### Beer–Lambert Law

In ultraviolet absorption spectroscopy, ozone concentration may be obtained based on well-established Beer–Lambert law as shown in Equation 1. Interested readers may refer to the literature (Campbell I. M., 1986; Clark B. J. *et al.*, 1993; Hughes H. K., 1963) for more information of this law. Equation 1 shows ozone concentration is dependent on optical path length and transmittance of light through gas cell.

$$c_{(\text{ppm})} = -1000000RT/(\sigma N_A P l_s) \times \ln(I_t/I_0) \tag{1}$$

$$T_r = I_t/I_0 \tag{2}$$

- $c_{(\text{ppm})}$  = ozone concentration in ppm by volume
- $I_0$  = input intensity to ozone sample in count
- $I_t$  = output intensity from ozone sample in count
- $l_s$  = optical path length in m
- $N_A$  = Avogadro’s constant,  $6.02214199 \times 10^{23}$  molecule  $\text{mol}^{-1}$

$P$  = pressure in atm

$R$  = ideal gas constant,  $8.205746 \times 10^{-5}$  atm m<sup>3</sup> mol<sup>-1</sup> K<sup>-1</sup>

$T$  = absolute temperature in K

$T_r$  = transmittance

$\sigma$  = absorption cross section in m<sup>2</sup> molecule<sup>-1</sup>

### *Practical Range of Ozone Concentration Selection*

Transmittance,  $I_t/I_0$  from 0.516 to 0.995 is previously achieved (O’Keeffe S. *et al.*, 2007). This is calculated based on information in the paper. At maximum detection limit 0.97 mg/l,  $I_0 = 370$  count,  $I_t = 191$  count; therefore,  $I_t/I_0 = 0.516$ . At minimum detection limit 0.03 mg/l,  $I_0 = 370$  count,  $I_t = 368$  count; therefore,  $I_t/I_0 = 0.995$ . Hence, transmittance,  $I_t/I_0$  between 0.516 and 0.995 is assumed to be practical to achieve and used in current work for calculation of ozone concentration.

### *Practical Optical Path Length Selection*

Optical path length between 5 cm and 50 cm are selected for current work analysis, because gas cells within 50 cm are shown to have fast response time of a few seconds (Aoyagi Y. *et al.*, 2012; Degner M. *et al.*, 2009, 2010; O’Keeffe S. *et al.*, 2005b, 2007; Maria L. D. *et al.*, 2008; Teranishi K. *et al.*, 2013). Reflective gas cell of 63 cm is shown to respond slowly at 60 s (Maria L. D. and Bartalesi D., 2012). Ultraviolet absorption spectroscopy is considered to have low absorption sensitivity compared to cavity enhanced absorption spectroscopy (Gomez A. L. and Rosen E. P., 2013), especially for very short gas cell of less than 5 cm. Short optical path length results in small light intensity decrease when light passes through sample. Therefore, transmissive gas cells between 5 cm and 50 cm are considered to be practical for analysis in current work.

## **Methodology**

### *Theoretical Calculation*

Firstly, calculation of ozone concentration up to two decimal places are done through Beer–Lambert law in Equation 1 based on following input parameters:

$\sigma = 1.147 \times 10^{-21}$  at peak absorption wavelength 253.65 nm (Hearn A. G., 1961)

$N_A = 6.02214199 \times 10^{23}$  molecule mol<sup>-1</sup>

$P = 1$  atm

$R = 8.205746 \times 10^{-5}$  atm m<sup>3</sup> mol<sup>-1</sup> K<sup>-1</sup>

$T = 300$  K

$l_s = 0.05$  m, 0.10 m, 0.15 m... 0.50 m

$I_t/I_0 = 0.516, 0.995$

### *SpectralCalc.com Simulation*

Secondly, simulation is done using gas cell simulator of SpectralCalc.com to verify calculation result. Following parameters are input to the simulator to obtain output transmittance at peak absorption wavelength 255.442 nm.

$N_A = 6.02214199 \times 10^{23}$  molecule mol<sup>-1</sup>

$P = 1013.25 \text{ mbar}$   
 $R = 8.205746 \times 10^{-5} \text{ atm m}^3 \text{ mol}^{-1} \text{ K}^{-1}$   
 $T = 300 \text{ K}$   
 $l_s = 0.05 \text{ m}, 0.10 \text{ m}, 0.15 \text{ m} \dots 0.50 \text{ m}$   
 $c_{(\text{ppm})} = \text{as calculated in two decimal places}$   
 Waveband =  $0.24 \mu\text{m}$  to  $0.27 \mu\text{m}$   
 Line list = HITRAN2008  
 Gas =  $\text{O}_3$

RESULTS AND DISCUSSIONS

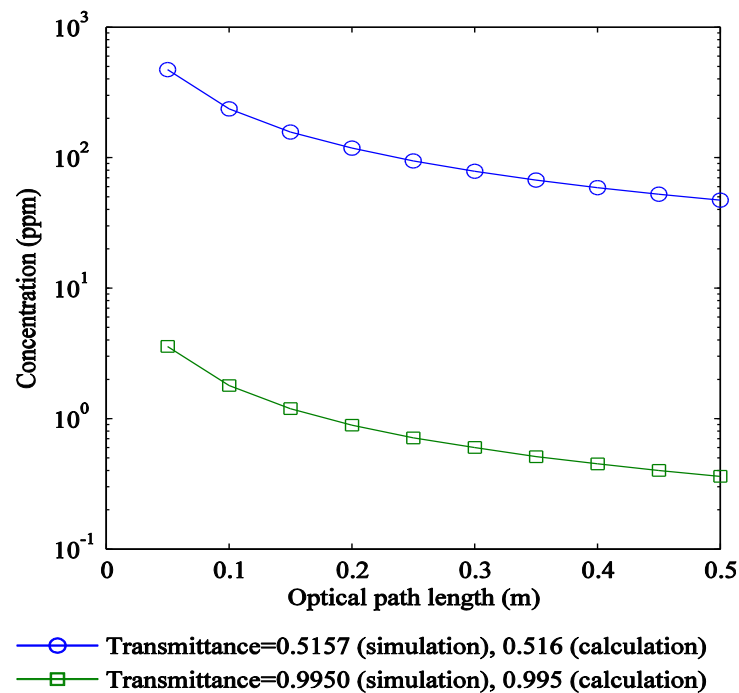


Figure 2. Practical range of ozone concentration measurement for optical path length between 0.05 m and 0.50 m based on theoretical calculation and SpectralCalc.com simulation

Figure 2 shows practical range of ozone concentration measurement for optical path length between 0.05 m and 0.50 m. Results obtained are in close agreement between theoretical calculation (transmittance from 0.516 to 0.995) and SpectralCalc.com simulation (transmittance from 0.5157 to 0.9950). Four observations may be made in Figure 2.

Firstly, practical values from Figure 2 may be extracted for concentration range interpretation in Table 1. Table 1 is useful for prediction of ozone concentration measurement for gas cell of specific optical path length. For example, optical path length of 0.05 m is practical for concentration measurement from 3.57 ppm to 471.61 ppm.

TABLE 1. PRACTICAL CONCENTRATION RANGE FOR TRANSMISSIVE GAS CELLS OF OPTICAL PATH LENGTH BETWEEN 0.05 M TO 0.50 M

| Optical path length (m) | Dynamic range of concentration (ppm) <sup>a, b</sup> |
|-------------------------|--|
| 0.05                    | 3.57 to 471.61                                       |
| 0.10                    | 1.79 to 235.80                                       |
| 0.15                    | 1.19 to 157.20                                       |
| 0.20                    | 0.89 to 117.90                                       |
| 0.25                    | 0.71 to 94.32  |
| 0.30                    | 0.60 to 78.60  |
| 0.35                    | 0.51 to 67.37  |
| 0.40                    | 0.45 to 58.95  |
| 0.45                    | 0.40 to 52.40  |
| 0.50                    | 0.36 to 47.16  |

a. Based on theoretical calculation using transmittance from 0.516 to 0.995

b. Based on SpectralCalc.com simulation to obtain transmittance from 0.5157 to 0.9950

Secondly, constant gap space exists between two lines in Figure 2. Existence of gap between the lines may be theoretically explained by division of two sets of Equation 1. All parameters are kept constant except transmittance,  $I_t/I_0$ . In theory, concentration at transmittance 0.5157 is more than concentration at transmittance 0.9950 by a factor of  $\ln(0.5157)/\ln(0.9950)$  or 132.1. Based on simulation result at optical path length 0.05 m, concentration at transmittance 0.5157 (471.61 ppm) is more than concentration at transmittance 0.9950 (3.57 ppm) by a factor of 132.1.

Thirdly, shift of concentration measurement is observed when optical path length is changed. The higher the optical path length, the lower the range of ozone concentration measurement as shown in Table 1. This will be further elaborated below.

Fourthly, the shift of concentration is evident from optical path length 0.05 m to 0.25 m only. For example, dynamic range of concentration at 0.05 m optical path length (3.57 ppm to 471.61 ppm) is very much more than dynamic range of concentration at 0.25 m optical path length (0.71 ppm to 94.32 ppm). Further increase of optical path length beyond 0.25 m results in small decrease in concentration measurement. For example, dynamic range of concentration at 0.25 m optical path length (0.71 ppm to 94.32 ppm) is slightly more than dynamic range of concentration at 0.05 m optical path length (0.36 ppm to 47.16 ppm).

Finally, trend of concentration shift observed in current work is consistent with previous work. For example, 4 cm gas cell may measure up to 100 ppm of ozone; whereas, 40 cm gas cell may measure up to 10 ppm of ozone (Degner M. *et al.*, 2009, 2010). This shows comparison with previous work are in close agreement. In short, optical path length is shown to affect range of ozone concentration measurement, especially optical path length between 0.05 m and 0.25 m.

## Conclusion and Recommendation

In conclusion, practical ranges of ozone concentration measurement have been theoretically calculated and verified via SpectralCalc.com gas cell simulator. Simulation result shows shift of range of concentration measurement when optical path length is varied. The higher the optical path length, the lower the dynamic range of concentration. Transmissive gas cell of optical path length 0.05 m is strongly recommended for measurement of ozone concentration from 3.57 ppm to 471.61 ppm. To reduce range of ozone concentration measurement, optical path length should be increased up to 0.25 m for measurement between 0.71 ppm and 94.32 ppm. Further increase of optical path length beyond 0.25 m is found to have small effect on reduction of range of concentration measurement.

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# Systematic Review of Using Gamification for Business Related Modules in Higher Education

Saraswathy A/P Rengasamy & S Komlavathi A/P Subramaniam

*Faculty of Business, Hospitality and Communication*

*First City University College, Bandar Utama, 47800 Petaling Jaya, Malaysia*

## Abstract

Higher Education plays a vital role in developing a student's better life and therefore educators should use an appropriate approach to imparting knowledge into learners. Traditional teaching methods have been inadequate in having student engagement in classes. Consequently, digital education became an important and most in-trend approach. However, not many higher educations adapted to digital education, and the academicians are still unclear on how to use gamification as a pedagogic tool and how it can impact teaching and learning in higher education. This paper seeks to provide an overview of research on tools or techniques used in gamification, academicians's perceptions, the challenges faced by academicians, and the impact of gamification in teaching and learning with using gamification for business related modules in higher education through systematic review. The publications from 2012 to 2022 will be included after final synthesis, according to explicit inclusion and exclusion criteria. By adapting digital education, educators will be able to provide quality and engaging learning for all students. Simultaneously, this research provides an understanding to the academicians on the opportunities and the need of being competent in digitalized education for professional development.

**Keywords:** gamification, digitalized education, teaching and learning, academicians, business modules.

## Introduction

The most fundamental task in preparing children to contribute to society is education. The university is the setting where high-quality instruction is provided, with the goal of producing graduates who will contribute to the nation's future labour force (Mohd Ali et al., 2016). Therefore, educators contribute significantly to the excellence of teaching and learning. In addition, to impart knowledge to students' educators should choose an appropriate strategy. In the shift to a competency-based approach, the educational system is tasked with developing the necessary competency using contemporary educational technologies (Khaitova, 2021). According to Urh et al. (2015), the process of education at universities are impacted by the widespread use of new technologies including the Internet, social network and mobile phones. Gamification has recently gained attention as a subject of research in the field of education development in an effort to improve students' learning experiences overall, particularly in the classroom.

In order to assist students learn more and ultimately improve their performance on

assessments, educators are always looking for new strategies to increase their students' engagement during courses.

More importantly, to boost student engagement, educators and instructional designers are constantly searching for innovative strategies (Sillaots, 2014). Sillaots (2014) also identified using gamification components to enhance learning activities is one way, among others, to raise student engagement. Gamification, which has been used in a variety of contexts, has been defined as the use of game design features for non-game activities. Moreover, gamification of education is one such educational technology that is widely employed globally in top international educational institutions (Khaitova, 2021). Gamification no a new technique. Subsequently, using gamification in education has a favorable impact on students' motivation, which ultimately improves their learning outcomes, claim renowned researchers (Khaitova, 2021).

Ab. Rahman et al. (2018) states that the students' various preferences influence how they interact with activities that the educators are conducting. A challenges that put the educators in a dilemma is maintaining the students' interest and participation in the classroom. This is due to the fact that students engagement has a significant impact on their achievement and performance as measured during either the formative or summative assessment (Handelsman et al., 2005 as cited by Ab. Rahman et. al., 2018). Similarly, Mohd et al. (2016) stated that students who engaged in learning activities are more likely to perform well because they remember more information. Gamification has been mentioned in several studies as method to raise student engagement (Hanus & Fox, 2015; Kuo & Chuang, 2016; Mohd et al., 2016; Sanmugam, M. et al., 2016; Ab. Rahman et al., 2018).

In this article, we give thorough analysis of the scholarly literature on gamification in higher education for business related modules. Our objective is to (a) identify the most popularly used tools and techniques in gamification, (b) recognise the academicians's perceptions on gamification and challenges they faced, and (c) identify the impact of gamification in teaching and learning for business related modules in higher educations through systematic review. Then helps create plans for the next study. This study is organised as follows: (a) a summary of gamification-related work, (b) a full explanation of how this review was carried out, (c) results and discussion are covered, and finally (d) limitation and conclusion are presented along with suggestion for further investigation.

### **Statement of Problem**

Research on gamification in education is not new and has been analyzed since past decade. There are numerous factors are blamed for the student's poor engagement in the classroom as well as their performance. Based on Ab. Rahman et al. (2018), students' varied preferences affect how they engage with the activities that the academicians are carrying out in the classrooms. In this instance, gamification is the developing trend in education that being highlighted to be used in classrooms (Surendeleg et al., 2014).

The finding of this study will ease academicians as well as the instruction designer to understand the importance and the impact of gamification on students' engagement, and performance. Simultaneously, provide understanding to the academicians on the opportunities and the requirement for proficiency in digitalized teaching for professional development. Therefore, this will have a significant impact on how we teach and learn if it is properly

understood.

There are many studies being conducted to raise students learning standards (Surendeleg et al., 2014). The goal of all current research on “gamification in education”, which is still in its early phase, is to increase the effectiveness of educational activities utilizing game components. However, there is gamification research on other program and module and not for business-related modules. Most importantly there is a shortage of expertise among academicians, and there is a lot of concern about whether gamification improves the learning process (Ab Rahman et al., 2019). Sadly, many academicians find it challenging to include ideas in their curricula that will outperform the appeal of gamification.

Accordingly, the purpose of this research is to analyse the most popularly used tools and techniques in gamification, academician’s perceptions on gamification and challenges they faced, and the impact of gamification in teaching and learning for business related modules in higher educations through systematic review.

### **Related Work**

As gamification becomes more and more interesting and important topic business education academicians might want to think about using gamification as a teaching tool because recruiting and retention of business programmes students are hot concerns (Fisher, D.J. et al., 2014). A research project was conducted on Norwegian University of Science and Technology by (Wang et al.2016) examine the effect of tradition non-gamified “clicker” response system. Game-based response system (Kahoot!) quiz paper formation test in a lecture. It showed an increase in student motivation. However, positive effects of learning outcomes were not clear.

Numerous articles concentrating on categorising game aspects, creating user preference models, and analysing the impact of various tailoring techniques started to appear in recent years (Tondello, 2019). As it is commonly acknowledged that the function of individual variations in sensitivity to the impacts of gamification is little understood (Koivisto & Hamari, 2019), review studies tackling this newly emerging subject were anticipated in order to better comprehend the literature. The past studies on gamification have revealed the effect of game-based learning on higher education. For example, the study by Sharples (2000) game-based learning has similar effects as primary and secondary school education at higher education level. This also shown in other studies such as studies by Tuysuz (2009), Miller et al. (2002) and Liao et al. (2011).

Studies on gamification have shown gains in students’ motivation and engagement as well as their academic performance. In a gamified system, the concept of “challenge” significantly contributes to successful learning outcomes (SánchezMartn, Caada-Caada, & Dávila-Acedo, 2017). The adaption of gamified ideas to improve students' successful learning outcomes is described in several techniques. According to some studies (Huang et al., 2019; Jagut, Botiki, & So, 2018; Jo et al., 2018; Lo & Hew, 2018; Zainuddin, 2018), incorporating this idea into modern pedagogical instruction such as flipped learning, or in the context of the Wiki classroom, and MOOCs, could be an alternative and successful strategy to improve students' learning achievement (Aparicio et al., 2019; Chang & Wei, 2016.)

## **Game and Gamification**

Studying game use in higher education has become more popular. This comprises instructional games, digital game-based learning and applied game (Yang et al., 2012). Vlachopoulos and Makri (2017) determined the wider definition of games to include interactive activities, and video games which can be played on mobile phones and other mobile gaming devices using a web browser. Overall a simple game can reinforce the role of a group member and develop someone's leadership qualities and it helps members of the group cooperate better and be more socially adept as well as help members better regulate their emotions and boost self-esteem (Eliasa, 2014).

In order to engage individuals in a range of jobs, gaming aspects are used in non-games contexts, which is known as “gamification” (de Sousa Borges et al., 2014). As defined by Surendeg et al. (2014), education has tremendous potential for using the notion of “gamification”, which tries to improve user experiences and engagement with a system. In addition, gamification is the process of altering processes, systems, services, goods, or organisational designs to enable game-like experiences (Hamri, 2019 cited by Klock et al., 2020).

The expansion of personal computing and the Internet has led to a diversity in gaming in the educational setting. There are many new chances for play to promote learning these days, and it is undeniable that play affects learning in some way. Play is essential for one's cognitive development from infancy to maturity, according to Piaget (1962). Piaget's idea has lately received additional support from Fromberg and Gullo (1992). They contend that play promotes and improves language development, social skills, creativity, imagination, and cognitive abilities.

## **Gamification in Education**

Gamification in education means that teachers apply the design elements of games to the learning environment. Overall, the goal is to make learning more interesting. Gamification research has had an impact on a number of education-related topics over the past ten years (Koivisto and Hamari, 2019). Even in elementary schools, the educational field is always changing to incorporate the most recent information technology advancements (Karpouzis et al., 2007). Nonetheless, in order for pupils to acquire in-depth knowledge, they still need to be committed and persistent. Nonetheless, in order for pupils to acquire in-depth knowledge, they still need to be committed and persistent. Since it has the potential to enhance student learning, gamification has drawn the attention of many educators (Dichev and Dicheva, 2017; Dicheva et al., 2015; Hamari, 2013; Koivisto and Hamari, 2019; Majuri et al., 2018; Seaborn and Fels, 2015).

In the context of education, intrusion of games into learning activities, also known as gamification. Advent of Computing and internet allowed video or computer games are used in classroom activities for improvement of the learning process. Modern internet access digital tools have brought the game together with mobile learning tools that give you space to explore more in teaching and learning. It can accommodate many participants in one game, single platform. So this not only works to improve learning process but also more efficient

and contemporary.

## **Elements and Platforms in Gamifications**

### *Gamification Elements*

The tools and techniques used in gamification are also known as game elements or components. Based on Surendeleg et al. (2014), to improve learners' motivation, game elements are used as both intrinsic and extrinsic aspects and each element has a purpose that has an impact on how students behave. For instance, rewards, badges, points and levels, feedback, leaderboards, progress bar, virtual money, characters, and time pressure. Each element has their own characteristics. For example, the point system serves as a gauge for accomplishment or success, and these can be used as incentives to show where one stands (Nah et al., 2014).

There are various kinds of points and each differ between different games. Nah et al. (2014) mentioned that, to provide a sense of advancement in the game, the level system is used in many different game design which will require either less or advanced level work, abilities and time. Whereas, when achieving a goal, badges are recognized as a sign of praise or task completion (Nah et al., 2014). Besides that, a leaderboard's purpose is to keep students engaged and inspire them to advance their names in recognition of their accomplishment (Nah et al., 2014). According to Brewer, R. et al. (2013), reward system motivate students work well and the learner motivation can be impacted by the timing and size of incentives.

Another element called progress bar which utilize by many researchers for gamified education and this element is intended to measure and display the overall goal progression (Berkling, K. & Thomas, C., 2013). The element storyline describes the game's plot or story (Nah et al., 2014). The reason of using storyline is, a strong plot can assist students in achieving a perfect interest curve, where motivation is maintained throughout the learning process and interest peaks at the start and conclusion of the learning process (Kapp, K.M., 2012).

Finally, the learner engagement benefit from feedback element that is frequent, intense and immediate as well as the efficacy of the learning and learner engagement increase with increasing frequency and quickness of feedback (Berkling, K. & Thomas, C., 2013; Nah et al., 2014). Table 1 shows the different type of gamification elements used in the studies. Most studies used Badges and leaderboard as a gamification element. Yet, as distinct gamification elements, challenges, levels, points and online activity are rarely studied.

Additionally, Sillaots (2014) conducted a research by set up curriculum like a game and the elements used was goals, avatar, points, leaderboard, levels, luck, collaboration, competition, and feedback. There are also research used Notifications, avatar and progress bar as elements for gamification (Mohamad et al., 2018).

Table 1: Elements Used in Gamification

| Type of Elements | Studies  | Total |
|------------------|--|-------|
| Badges           | (Laskowski, M. & Badurowicz, M., 2014); (Lopes, R., 2014); (Hanus & Fox, 2015); (Auvinen et al., 2015); (Barata et al., 2015); (Hakulinen et al., 2015); (Sánchez-Mena, A. & Martí-Parreño, J., 2016); (Kuo & Chuang, 2016); (Poondej, C., & Lerdpornkulrat, T., 2016); (Carina at al., 2016); (Mohamad et al., 2018)        | 11    |
| Leaderboard      | (Laskowski, M. & Badurowicz, M., 2014); (Sillaots, M., 2014); (Prause et al., 2012); (Singer, L. & Schneider, K., 2012); (Lopes, R., 2014); (Hanus & Fox, 2015); (Barata et al., 2015); (Sánchez-Mena, A. & Martí-Parreño, J., 2016); (Kuo & Chuang, 2016); (Poondej, C., & Lerdpornkulrat, T., 2016); (Carina at al., 2016) | 11    |
| Challenges       | (Sillaots, M., 2014); (Lopes, R., 2014); (Sánchez-Mena, A. and Martí-Parreño, J., 2016); (Akpolat, B. S. & Slany, W., 2014); (Poondej, C., & Lerdpornkulrat, T., 2016); (Carina at al., 2016)  | 6     |
| Levels           | (Sillaots, M., 2014); (Lopes, R., 2014); (Barata et al., 2015); (Kuo & Chuang, 2016); (Poondej, C., & Lerdpornkulrat, T., 2016); (Carina at al., 2016); (Mohamad et al., 2018)   | 7     |
| Points           | (Laskowski, M. & Badurowicz, M., 2014); (Sillaots, M., 2014); (Lopes, R., 2014); (Sánchez-Mena, A. & Martí-Parreño, J., 2016); (Kuo & Chuang, 2016); (Ejsing-Duun, S. & Karoff, H. S., 2014); (Poondej, C., & Lerdpornkulrat, T., 2016); (Carina at al., 2016); (Mohamad et al., 2018)                                       | 9     |
| Online Activity  | (Urh et al., 2015); (Kuo & Chuang, 2016)   | 2     |

### Gamification Platforms

Higher education academicians are currently testing with the idea of gamification and the integration of game elements into their modules and classrooms in an effort to involve students in the learning process (Goshevski et al., 2017). Yet, in order to be effective, gamification frequently needs a system or platforms. There are a lot of gamification out there can be used in teaching and learning, such as Kahoot, Quizizz, Quizlet, Riddle, Edpuzzle, as well as Stand-alone gamification platform. The most commonly used platform is Kahoot and it is popular in both public and private institution of Malaysia (Tan Ai Lin, D. et al., 2018).

### Academician’s Perception on Gamifications

Due to the pandemic's quick technological change in the sphere of education, many

educational institutions are now using e-learning and e-assessment as their main methods of instruction. Student engagement is significantly impacted by the usage of gamification software and technology in student assessment and evaluation. According to Lee and Hammer (2011), gamification provide the potential to “reframe failure as a vital component of learning” since failure becomes an opportunity to attempt, practise, and get better. As a result, the player is given the opportunity to gain new knowledge through failure. They did discover, though, that how well gamification worked depended on the individual.

The application of gamification can improve students' capacity for collaboration and communication in ways that are academically appealing, By doing this can increase student confident during answering any quiz or any assignment. Gamification is a creative and interesting way for inspiring pupils and enhancing in their learning. Academician also feel very motivated to apply gamification in their teaching and learning. Yet, despite an increase in academic interest in gamification over the past few years, to make students involve in their education. The purpose of gamification is to engage the users in a game like experience and eventually to improve the user's performance.

Our preliminary review primarily positions gamification as an advantage tools for training in related areas such as forecasting and management (Buckley et al., 2011; Makridakis et al., 2008), decision making (Makridakis et al., 2008), taxation (Buckley and Doyle, 2016b). Gamification might be used to a KPI setting where a set of objectives must be met by certain employees in a company in order to be considered for a promotion. This setting is said to be gamifiable by involving the staff by turning goals and accomplishments into fun experiences. In terms of motivation, objectives, incentives, and measurement, it is believed that gamification and KPI are related.

### **Academician's Challenges on Gamification**

According to Sánchez-Mena, A. and Martí-Parreño, J. (2016), there are some challenges faced by academicians. The first challenge is lack of resources such as lack of time, training, classroom setting, and economic support. The second challenge is the students who are lack of interest. Third is the subjects and classroom dynamics. Hidayat (2021) also stressed out that how to get students involved in class discussion is one of the challenges and she also stated Asian students are not very engaged in class.

In the contrary, for those students who are introverted or who are not interested in studies or the gamification system itself the current gamification system is generally not appropriate (Hidayat, 2021). Whereas, Hidayat (2021) also pointed out that gamification is beneficial for students who are competitive, active, enthusiastic in learning the courses, as well as those who are interested in completing the course with good marks. Thus, it is impact on the academician's preparation on balancing both introvert and extrovert students to participate and engage in class activities.

### **Impact of Gamification in Teaching and Learning.**

A great amount of change is occurring in the educational landscape. The widespread use of ICT and our growing reliance on it are changing how teaching, learning and engagement

occur (Surendeleq et al., 2014). Moreover, this transformation can be linked to the changing demographic of current students. Therefore, gamification is gradually being recognised as a successful learning method for generating extremely engaging learning experiences, according to mounting research. The success of digital games in education has tried to validate the impacts of gamification in support of its ability to increase motivation, engagement, and social influence while enabling students to engage in experiential learning based on the empirical evidence of recent research (Groening & Binnewies, 2019; Lopez & Tucker, 2019). Beside motivation and engagement, there are other positive impacts, such as boosting student discipline by rewarding them with more points for consistently showing up to class on time, making the class more enjoyable, boosting mood and knowledge, encourage participations in class, and reduce boredom (Hidayat, 2021). Additionally, Hidayat (2021) highlighted gamification approach aids students in fostering their leadership, teamwork, and sense of responsibility.

Academics and networks of academics have recently developed a keen interest in gamification, leading them to systematically investigate the range of gamified components utilised as part of the instructional design process to give engaging experiences and improve programmes (Kyewski & Kramer, 2018; Tsay, Kofinas, & Luo, 2018). Supporting and sustaining participation in gamification pedagogies remains difficult, despite its enormous influence on learning and teaching and technology advancements (Ding et al., 2018). Moreover, given that gamification is a relatively new idea in the field of education (Göksün & Gürsoy, 2019), we think that issues must be resolved in order to get a more mature knowledge of its nature and process.

## **Methods**

We performed a systematic review through google scholar with the use of the search terms gamifications, gaming, higher education and education. Studies involving academicians, research using gamifications as a learning and teaching techniques, English-language publications, and full text were all required for inclusion. Besides that, used both domestic and international literature on the chosen topic. Studies that were not in English and unrelated to educational gamifications and for which were unable to access the full text paper were excluded. This systematic review's goal is to evaluate the possible advantages of using these tactics in business related modules in higher education.

45 open access journal papers spanning the years 2012 to 2022 from Google Scholarly provided the empirical data used in this study. For the systematic interpretation of, a rigorous methodological research strategy was experimental support (Braun, Clarke, Hayfield, & Terry, 2019; Krippendorff, 2018). By combining content and thematic analysis, this methodological approach allowed textual data to be transformed into meaningful codes, themes, and categories (such as keywords, theories, game mechanics, and gamification platforms) and allowed for the synthesis of all the data (i.e., phrases) into themes (e.g., positive and negative learning outcomes or impacts).

This systematic approach and review serves to gauge research trends on thematic and content analysis in the field of educational technology. Between 2009 and 2013, the review methodically investigated the broad trends in research in the field of distant education. In this



review, we looked at the most popular keywords, theoretical and conceptual foundations, research designs, data collecting tools, data analysis methodologies, kind of variables, targeted population, participant groups, cited references, and cited authors.

## **Discussion**

The most recent developments in digitalization (augmented and virtual reality, artificial intelligence and big data, emotion sensors, learning analytics, massive open online courses, smart desks) as well as a variety of contemporary methods and instructional pedagogies, including but not limited to gamification, should be covered in teacher or instructor training. Teachers might then use the appropriate instruction and technology at the appropriate time and location. To maximise the benefits of these research, other digital pedagogies must be used in a single study or through an interdisciplinary approach (for example, gamification combined with flipped learning or inquiry-based learning).

Likewise, we think that an effective teaching technique should aim to make learning enjoyable and engaging for students rather than to make things difficult for them. In this review study, gamification instruction was found to be an effective teaching strategy for achieving these desirable results. The finest teaching methods are those that compel and involve students in their learning. Moreover, we can state that a gamified application combined in a lecture may improve learning outcomes at higher education. However, its impact is even more important in the case of tertiary level students, where the participants had significantly better performances in their studies (Legaki et al., 2020).

## **Conclusion**

An emerging movement called gamification uses game elements as a motivator to inspire, involve, and improve the user experience. It is a fast expanding phenomena that has demonstrated to offer intriguing and engaging solutions in the context of education and learning. Foundational psychological theories, such as SDT and intrinsic and extrinsic motivation, form the basis of an early framework. In order to find high-quality empirical research on gamification in the educational field for the four years from 2012 to mid-2022, this report offers a thorough literature review. The methodological techniques employed in research, the underpinning theoretical frameworks, the gamification platforms, the most popular trending searches, the participant preferences, and the most often used game mechanics in education have all been the subject of this article. The results of learning and its effects. It appears increasingly dated to teach lessons in the classroom using the standard chalk and talk technique. Students' learning environments today go beyond the standard brick and mortar classroom. People may now quickly obtain any sort of information from multiple digital sources because to the ease with which people can now establish worldwide connections in the digital age. Students will need to study more since technology is always improving. As suggested by Nah et al. (2014), researcher could use a scientific method such as experiments and surveys in evaluating the gamified educations. Future research has the intriguing potentials to compare the effectiveness of employing already-establish online gamification tools versus stand-alone gamification platform.

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*“If we knew what it was we were doing, it would not be called research, would it?”*

– Albert Einstein