

**IIIMIA
G A
E**

**International
Journal of Management,
Accounting, Governance and
Education**

**International Journal of Management, Accounting, Governance and Education
(IMAGE)**

Volume 1, Issue 3

June 2022

Universiti Tun Abdul Razak (UNIRAZAK), Kuala Lumpur

Published by:

Universiti Tun Abdul Razak (UNIRAZAK), Kuala Lumpur

2022

Copyright © 2022 by Universiti Tun Abdul Razak (UNIRAZAK), Kuala Lumpur

All rights reserved. Except as permitted under the Malaysian Copyright Act 1987, no part of this publication may be reproduced or distributed in any form or by any means, including, but not limited to, the process of scanning and digitalization, or stored in a database or retrieval system, without prior written permission of the publisher.

Editors

Professor Dr Benjamin Chan Yin Fah
Associate Professor Dr Gazi Md Nurul Islam
Associate Professor Dr Cheok Mui Yee
Nur Izzatil Akmal Muhamad Bustaman

eISSN 2785-9304



TABLE OF CONTENT

Comparison of Gender learning Effectiveness through Video Clips Among Business Students	4
Estimating the Determinant Factors to Satisfaction of TASKA Services in Malaysia	14
Investigating Attributes Of International Students' Satisfaction in Private Universities in the Klang Valley, Malaysia	23
Kesan Strategi Metakognitif Dalam Meningkatkan Penguasaan Kemahiran Belajar	29
Lecturers' Perception on the Effectiveness of Continuous Summative Assessment on Evaluating Grammar Skills among Undergraduates	41
Multilingual's Incidental Acquisition of Novel Words with Lexical Cues in L1 and L2	52
The Influence of Product Quality and Service Quality on Brand Leadership: An Empirical Study of Petrol Station Outlet Users	63
A Study on Working Environment, Victims Attitude and Power towards Sexual Harassment Experience amongst the Working Adults in Kuala Lumpur	76
The US-China Competition: Industrial Chain and the Future of Systemic Great Power	83

Comparison of Gender Learning Effectiveness Through Video Clips Among Business Students

Dominic Wong¹

¹ Tunku Abdul Rahman University College (TARUC)

* wonght@taru.edu.my

ABSTRACT

Learning is important for students to build their foundation of knowledge that they can utilise in their future careers. Learning through videos is considered effective tools for many students, the topic was well reviewed by many researchers. This paper is also going to explore the learning effectiveness of video in teaching business related topics and will also include suggestions to improve teaching using video clips. Some studies have indicated the trait differences between male and female students in e-learning. The researcher will explore perceptions of video learning effectiveness between male and female students.

Keywords: Video Learning, Effectiveness, Business Students, Gender

1. INTRODUCTION

Learning is important for students to build a foundation of knowledge they can utilize in their future careers. Learning via videos is considered an effective tool for many students, as the topic was well reviewed by many researchers. Kay (2012) discovered that videos were indeed good for improving students' learning ability. Apart from Kay, other studies had also revealed that videos were good for supporting students in learning (Ljubojevic, Vaskovic, Stankovic & Vaskovic, 2014 ; Hsin & Cigas, 2013).

The purpose of this paper is to explore the learning effectiveness of using videos in teaching business related topics. A comparison is also done to observe the difference in perceptions of learning effectiveness between male and female students.

2. LITERATURE REVIEW

2.1 Video Learning

Based on the study by Ljubojevic et al. (2014), students performed better when videos were included in the mid-session of the lecture. López, Ferrando and Fabregat-Sanjuan (2016) also found out that students found the videos and clips to be the most useful and efficient teaching tool to improve learning. Brecht (2012) found out that videos and clips designed to support tutoring had a significant result. In addition, Geri (2012) indicated about 94% of the students might improve their understanding of the learning materials via watching videos.

Besides, video lectures seemed to be a good tool to enhance distance learning, as Geri (2012) found out that students who failed would still continue their studies after an introduction to video materials. In another study, Copley (2007) mentioned that video lectures might reduce loneliness and increase the attention span of the distance learners.

Besides, the inclusion of videos in learning was also beneficial in tests or examinations (Beheshti, Taspolat, Kaya & Sapanca, 2018). Ljubojevic et al. (2014) conducted a research based on the inclusion of videos and clips into lectures and impacts on students' test results. It seemed that it did affect the results in a positive way. In another setting by Hsin and Cigas (2013), they also found out that more students passed the course after having videos as part of the course. In another study, students responded that the summary videos produced were useful for their exam revisions (Whatley & Ahmad, 2007). An encouraging result was found by Brecht & Ogilby (2008), failed grades were reduced by 72% after the learning videos were available.

Kay (2012) did a thorough research on learning effectiveness through videos. She found out that video-based learning did bring benefits in understanding, motivation in learning, improving study habits and better grades. In another research by Zhang, Zhou, Briggs and Nunamaker (2006), they found out that videos do play a role in the satisfaction level of learners towards e-learning. In a nutshell, the inclusion of videos and clips in learning have positive learning outcomes.

Brame, the assistant director of Center for Teaching in Vanderbilt University (2016) stipulated that in order to create effective video-based learning, she listed out a few suggestions to improve video-based learning. These were her suggestions;

1. Displaying key information (signaling).
2. Segmenting the video clip into smaller pieces (segmenting)
3. Elimination of extraneous information (weeding)
4. Matching the process of both audio and visual channel to convey information (matching modality)
5. Making materials that are relevant for a particular class.

In addition, Bell and Bull (2010) also mentioned that teachers needed to actively participate in controlling the video session such as pausing, asking questions, replaying key segments and assessing understanding. If teachers were not around to control the video and clips, the students' understanding of the videos might be hampered (Bell & Bull, 2010).

In a nutshell, as the few studies indicated above have already identified the effectiveness of learning via video, the rest of this paper is going to explore the learning effectiveness of videos in teaching business related topics and will also include suggestions to improve teaching using videos and clips.

2.2 Gender And E-Learning

Video is an important aspect in e-learning, the difference of gender traits in e-learning may be used to gauge the differences in video effectiveness between male and female. In terms of gender studies, Kramarae (2001) found out that there were more married female learners who preferred e-learning due to its flexibility that allowed them to juggle family, studies and work commitments. In addition to the preference of female students towards online learning, there were also studies that confirmed that female students had different motivational factors than male students.

In other gender studies in online participation and preference, various studies established that more females are keen on e-learning and a significant higher number of females are enrolled in e-learning programmes (Willging & Jonhson, 2004; Qureshi, Morton & Antosz, 2002; Halsne and Gatta, 2002; Evans & Haase 2001). Sullivan (2001) found that there were significant differences between the way male and female students in the strengths and weaknesses of the online environment related to topics in flexibility, face-to-face interaction, shy and quiet students, self-discipline, and self-motivation.

Female students were found to be more confident and academically inclined when using online as a learning platform. They preferred more care in tutoring and they had different interaction styles compared with male students and ultimately performed better than male students (Yukselturk & Bulut, 2009; Price, 2006). In Malaysia, it was concluded that more female learners were keen in e-learning compared to male students (Mahmod et al., 2005). Therefore, this leads to the research objective as above, will the female students display different perceptions in video learning effectiveness?

3. RESEARCH METHODS

The researcher is conducting this research via questionnaire. In particular, Google Form will be used as the main tool in soliciting answers from students. Students can answer anytime and anywhere as Google Form can be accessed in any Internet browser such as Chrome and Safari via mobile devices or desktop computers. However, for this paper, the researcher is only focusing on learning

effectiveness. Questions are focused on learning effectiveness and videos can explain a concept easily, to make it easier for students to understand and that video learning is more interesting.

Respondents are different groups of business students in university or colleges, and may come from diverse business streams such as accounting, business management, entrepreneurship, human resource, marketing etc. The researcher is currently utilising video clips in most lectures (i.e. once or twice per lecture), video clips are usually played in the middle of the lecture sessions or when certain concepts need to be explained. Hence, this paper served as an explorative research to gauge basic effectiveness of video learning based on utilising videos in teaching and therefore the sample is still small but the researcher intends to collect more than 100 responses from students. Respondents are solicited from the university that the researcher is currently working i.e. Tunku Abdul University College.

For the current paper, the researcher is going to analyse the learning effectiveness of video learning using descriptive statistics such as mean and percentage. The researcher is further categorising the learning effectiveness based on different gender, in this aspect, the researcher is using T-Test analysis to check the significant difference between male and female students (Sekaran & Bougie. 2016).

4. RESULTS AND DISCUSSION

4.1 Demographics Analysis

Based on the Google Form’s response page, the researcher collected 221 responses from students. Refer to Table 1, respondents are mostly female with 56.6% (n=125) and 43.4% are male (n=96). Most respondents are young adults below 31 years old in which the percentage of students below 26 years old is 97.3%. One hundred and ninety-four (87.78%) respondents are currently studying bachelor’s degrees and while only 27 (12.22%) are studying postgraduate degrees.

Table 1: Demographics of Respondents

	Details	Number	%
Gender	Male	96	43.4
	Female	125	56.6
	Total	221	100
Age Groups	18-20	63	28.5
	21-25	152	68.8

	26-50	6	2.7
	Total	221	100
Degree Level	Bachelor	194	87.78
	Postgraduate	27	12.22
	Total	221	100

4.2 Overall Learning Effectiveness Analysis

Table 2: Video Learning Effectiveness

Variable	Strongly Disagree (1)		Disagree (2)		Moderate (3)		Agree (4)		Strongly Agree (5)		Std. Dev	Mean
	No.	%	No.	%	No	%	No.	%	No	%		
Explain A Topic/Concept	1	0.5	8	3.6	48	21.7	106	48	58	26.2	0.82	3.96
Understand The Topic/Concept	1	0.5	6	2.7	52	23.5	112	50.7	50	22.6	0.78	3.92
Makes The Topic/Concept More Interesting	1	0.5	5	2.3	49	22.2	88	39.8	78	35.3	0.84	4.07
Enhances/Enriches The Topic That The Lecturer Taught	0	0.00	7	3.2	46	20.8	108	48.9	60	27.1	0.78	4.00
Think About Related Issues Of The Topic That The Lecturer Taught	1	0.5	6	2.7	53	24	108	48.9	53	24	0.79	3.93

From Table 2, video clips seemed good enough to explain topics/concepts to students, and a vast majority of students (i.e. 74.2%, n=164) agree on this matter with a mean score of 3.96. Similarly, video clips are great in helping the students to understand the topic/concept, and again the mean score is near to 4 (mean=3.92) and 73.3% of students agree that video clips enhance their understanding. Learning via videos also makes the topic more interesting and students like this, about 75% of students agree on this with a mean score about 4.1 (mean=4.07). While the second highest mean score is that video clips enrich the topic that the lecturer is teaching, its mean is at 4.0 level with 76% of students agreeing on this matter. Last but not least, students think positively that videos and clips can enable students to reflect more on relevant topics that the lecturer taught with a mean score of 3.93 and again about 73% of students agree on this benefit.

From the above analysis, in overall, the result is consistent with the study of López, Ferrando and Fabregat-Sanjuan (2016), students here also feel videos clips are the most useful and efficient teaching tool to improve learning. In addition, Geri (2012) indicated about 94% of the students might improve their understanding of the learning materials via watching videos while in this study, 74% of students agree on the same statement. From the previous study, Kay (2012) found out that video-based learning did bring benefits in understanding and motivation in learning, so the video clips in improving understanding is proven again here. Moreover, video clips making the concept more interesting is mostly agreed by students and therefore it seems this also links to the finding that video clips improves motivation in Kay's study.

4.3 Comparison of Gender Analysis

Table 3: Comparison of Video Learning Effectiveness

Variables	Male	Female	P value
Explain A Topic/Concept	3.99	3.94	0.63
Understand The Topic/Concept	3.93	3.92	0.95
Makes The Topic/Concept More Interesting	4.05	4.09	0.75
Enhances/Enriches The Topic That The Lecturer Taught	3.98	4.02	0.73
Think About Related Issues Of The Topic That The Lecturer Taught	3.91	3.95	0.67

None of the variables shows the difference between the male and female students since all p values are above 0.05. Both groups agree on the effectiveness of learning through video and clips, and all variables are near to 4 which is at the agreed level.

5. CONCLUSION

All in all, it's clear that students perceive the benefits of learning through video clips especially in understanding and enriches the teaching topic and even makes the topic more interesting. The overall finding is definitely consistent with previous research by López, Ferrando and Fabregat-Sanjuan (2016), Kay (2012), Ljubojevic et al. (2014) as well as Hsin & Cigas (2013) that using videos in teaching does improve students' learning capability.

A simple comparison between male and female students' perceptions towards the learning effectiveness and improvements is also conducted in which they are indifferent in all variables. However, in many other gender studies in online participation and preference, various previous studies established that more females are keen on e-learning and a significant higher number of females are enrolled in e-learning programmes (Willging & Jonhson, 2004; Qureshi, Morton & Antosz, 2002; Halsne and Gatta , 2002; Evans & Haase 2001). Perhaps, video clip is just a subset of e-learning and therefore male and female students do not have indifference in this learning tool.

However, this research did not include performance as a dependent variable for measuring video learning effectiveness. Perhaps this can be used in the future for measuring video learning effectiveness. And the sample size can be further increased to give a more thorough view of learning effectiveness through video clips. Besides, other comparison studies such as comparison between degree programmes or age groups may be conducted to measure and compare the learning effectiveness of video learning among groups.

ACKNOWLEDGEMENTS

The researcher would like to show sincere gratitude to his university for sponsoring this research paper in this conference. In addition, the researcher would like to thank all the participants in this research.

CITATION AND REFERENCES

- Beheshti, M., Taspolat, A., Kaya, S.O. & Sapanca, F. H. (2018). Characteristics of instructional videos. *World Journal on Educational Technology: Current Issues*, 10(1), 061-069. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1170366.pdf>
- Bell, L., & Bull, G. (2010). Digital video and teaching. *Contemporary Issues in Technology and Teacher Education*, 10(1), 1-6. Retrieved from <https://citejournal.org/wp-content/uploads/2016/04/v10i1editorial1.pdf>
- Brame, C.J. (2016). Effective educational videos: Principles and Guidelines for Maximizing Student Learning from Video Content. *CBE-Life Sciences Education*, 15(4), 1-6. <https://doi.org/10.1187/cbe.16-03-0125>
- Brecht, H. D., & Ogilby, S. M. (2008). Enabling a comprehensive teaching strategy: Video lectures. *Journal of Information Technology Education: Innovations in Practice*, 7(2008), 71-86. Retrieved from <http://www.jite.org/documents/Vol7/JITEV7IIP071-086Brecht371.pdf>
- Brecht, H.D. (2012). Learning from Online Video Lectures. *Journal of Information Technology Education: Innovations in Practice*, 11(2012), 227-250. Retrieved from <http://www.jite.informingscience.org/documents/Vol11/JITEv11IIP227-250Brecht1091.pdf>
- Copley, J. (2007). Audio and video podcasts of lectures for campus-based students: Production and evaluation of student use. *Innovations in Education and Teaching International*, 44(4), 387-399. <https://doi.org/10.1080/14703290701602805>
- Evans, J.R., and Haase, I.M. (2001). Online business education in the twenty-first century: an analysis of potential target markets', *Internet Research: Networking Applications and Policy*, 11(3), pp. 246-260. Retrieved from <https://eric.ed.gov/?id=EJ631324>
- Geri, N. (2012). The resonance factor: Probing the impact of video on student retention in distance learning. *Interdisciplinary Journal of E-Learning and Learning Objects*, 8 (2012), 1-13. Retrieved from <http://www.ijello.org/Volume8/IJELLOv8p001-013Geri0794.pdf>
- Halsne, A.M. & Gatta, L.A. (2002). Online versus Traditional-delivered Instruction: A Descriptive Study of Learner Characteristics in a Community College Setting. *Online Journal of Distance Learning Administration*, 5(1). Retrieved from <https://www.learntechlib.org/p/92518/>
- Hsin, W. J., & Cigas, J. (2013). Short videos improve student learning in online education. *Journal of Computing Sciences in Colleges*, 28(5), 253-259. Retrieved from <http://kauppinen.net/tomi/learning-in-the-era-of-online-videos-camera-ready.pdf>

- Kay, R.H. (2012). Exploring the use of videopodcasts in education: A comprehensive review of the literature. *Computers in Human Behavior*, 28(2012), 820-831. Retrieved from https://www.lth.se/fileadmin/cee/Documents/Kay_2012_Podcasts.pdf
- Kramarae, C. (2001). *The third women learning online*. Washington, DC: American Association of University Women Education Foundation. Retrieved from <https://eric.ed.gov/?id=ED461348>
- Ljubojevic, M., Vaskovic, V., Stankovic, S., & Vaskovic, J. (2014). Using Supplementary Video in Multimedia Instruction as a Teaching Tool to Increase Efficiency of Learning and Quality of Experience. *International Review of Research in Open and Distance Learning*, 15(3), 276-291. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1033049.pdf>
- Mahmod, R., Dahlan, N., Ramayah, T., Karia, N. & Asaari, M.H.A.H. (2005). Attitudinal Belief on Adoption of E-MBA Program in Malaysia. *Turkish Online Journal of Distance Education*, 6(2), 115-124. Retrieved from <https://dergipark.org.tr/en/download/article-file/156479>
- López, S.D.F., Ferrando, F., & Fabregat-Sanjuan, A. (2016). Learning/training video clips: an efficient tool for improving learning outcomes in Mechanical Engineering. *International Journal of Educational Technology in Higher Education*, 13(6), 1-13. <https://doi.org/10.1186/s41239-016-0011-4>
- Price, L. (2006). Gender differences and similarities in online courses: challenging stereotypical views of women. *Journal of Computer Assisted Learning*, 22, 349-359. <https://doi.org/10.1111/j.1365-2729.2006.00181.x>
- Qureshi, E., Morton, L.L & Antosz, E. (2002). An Interesting Profile-University Students who take Distance Education Courses show weaker motivation than on-campus. *Online Journal of Distance Learning Administration*, 5(4). Retrieved from <http://www.westga.edu/%7Edistance/ojdl/winter54/Qureshi54.htm>
- Sekaran, U., & Bougie, R. (2016). *Research Methods For Business: A Skill Building Approach*. West Sussex, United Kingdom: John Wiley & Sons.
- Sullivan, P. (2001). Gender differences and the online classroom: male and female college students evaluate their experiences. *Community College Journal of Research and Practice*, 25, 805-818. <https://doi.org/10.1080/106689201753235930>
- Whatley, J., & Ahmad, A. (2007). Using video to record summary lectures to aid students' revision. *Interdisciplinary Journal of E-Learning and Learning Objects*, 3(2007), 185-196. Retrieved from <http://www.ijkl.org/Volume3/IJKLOv3p185-196Whatley367.pdf>

- Willing, P.A., & Johnson, S.D. (2004). Factors that influence students' decision to drop out of online courses, *Journal of Asynchronous Learning Networks*, 8(4), 105-118. <http://dx.doi.org/10.24059/olj.v13i3.1659>
- Yukselturk, E., & Bulut, S. (2009). Gender Differences in Self-Regulated Online Learning Environment. *Educational Technology & Society*, 12 (3), 12-22. Retrieved from <https://www.learntechlib.org/p/75438/>
- Zhang, D., Zhou, L., Briggs, R.O., & Nunamaker, J.F. (2006). Instructional video in e-learning: Assessing the impact of interactive video on learning effectiveness. *Information & Management*, 43(1), 15-27. <https://doi.org/10.1016/j.im.2005.01.004>

Estimating the Determinant Factors to Satisfaction of TASKA Services in Malaysia

Ku Faridah Ku Ibrahim ^{a,1}, Azrul Fazwan Kharuddin ^{b,2}

^a School of Education & Humanities, Universiti Tun Abdul Razak, (UNIRAZAK), Malaysia

^b Graduate School of Business, Universiti Tun Abdul Razak, (UNIRAZAK), Malaysia

¹ kufaridah@unirazak.edu.my

² azrulfazwan@unirazak.edu.my

Abstract

This research shows the application of the Structured Equation Modeling (SEM) to obtain the best model for studying the relationship between the more efficient and accurate against the findings and the interpretation of the variables. For the purpose of this study, the main data of the survey has been used. A total of 61 TASKA were investigated around the East Coast of Malaysia and the responses from 273 parents/guardians were collected. Multiple linear regression and factors analysis is used to obtain the best SEM model. Analysis found that the combination of three mediators (facilities, cleanliness and safety) constitutes a strong association to estimate a complete structured equation model while supported by demographic factors such as education level, occupation, location, distance, medium of language used, fees and age of children to strengthen the TASKA selection factor.

Keywords - Structural Equation Modeling, Multiple Regression, Confirmatory Factor Analysis

1 Introduction

Structural equation modeling (SEM) can be used to evaluate models based on the variable goodness of fit (Anderson et al., 1982). The popularity of this approach is increasing among researchers, academics and students. This is due to the flexibility and coverage in producing accurate and fast estimates in making predictions (Anderson et al., 1988). Steps in the SEM analysis follow model specifications, data collection, budgeting, interpretation and modification of the model (Anderson et al., 1988). However, the validity of this index value must be obtained to assure the acceptance and rejection of the model (Anderson et al., 1982). In this study, the approach of the Structured Equation Modeling is used to evaluate the benefits of modeling through the acquisition of Multi Linear Regression (MLR). This acquisition is used in the assessment to improve the facilities offered at the early childcare center called TASKA throughout the east coast of Malaysia. The data obtained from this survey estimate the major contributing factor to consumer satisfaction from parents and guardian's eyesight.

2 Materials and Methodology

Samples of 273 parents/ guardians from various TASKA at the east coast of Malaysia (Pahang, Terengganu and Kelantan) were taken to fit the model in this study. The respondents of the survey were individuals who received the TASKA service directly with the various facilities offered. Identified mediating variables include the facilities provided, aspects of parenting, policy, nutrition, cleanliness and safety. All of these determinants are assessed to be the level of consumer satisfaction through parent/guardian perspectives. These different perspectives act as the intermediary variables that are keys of success to this study. The data were obtained from a survey conducted through a questionnaire that has been verified for its reliability. The stratified random sampling method is used because it has different population values by state and TASKA type. IBM SPSS® AMOS® v23.0 software has been used for model fitting and analysis purposes. The analysis used in this study was Confirmatory Factor Analysis (CFA), Discriminant Validity (DV), Path Analysis (PA) and Structured Equation Modeling (SEM).

2.1 Confirmatory Factor Analysis

The first step is to carry out the Confirmatory Factor Analysis (CFA) that is commonly used in social investigations. It is an advanced analysis of the Exploratory Factor Analysis (EFA) and is used to test whether the steps are in line with the investigators' objective or need to be justified. Therefore, the objective of the CFA is to rectify the data that corresponds to the hypothesized measurement model. Model fit measures are then obtained to assess the extent to which the proposed model has a covariance that links all items in the model.

Table 1: Fitness Indices Estimation

Name of Category	Level of Acceptance	Literature
Factor Loading	Weight > 0.5	Heir et al (2006)
Absolute Fit	P < 0.05 RMSEA < 0.10	Wheaton et al. (1977) Browne and Cudeck (1993)
Incremental Fit	CFI > 0.7 TLI > 0.7	Bentler (1990) Bentler and Bonett (1980)
Parsimonious Fit	Chisq/df < 5.0	Marsh and Hocevar (1985)

If there are excessive items in latent construction then the item should be removed or constrained. Indication of fitness estimation of the model is as follows according to previous studies (Table 1).

2.2 Discriminant Validity

The discrimination confirmation is the testing of the independent variable score on the research objective to assess the construction of the best model. The correlation coefficients are among the

conceptual modeling steps that are used as proof of the validity of discrimination. If the coefficient of correlation is high (> 0.85) then the validity of discrimination is considered weak, depending on the theory of association and the magnitude of the coefficient. On the other hand, if the correlation is low to moderate (< 0.60), this shows that the measure has a validity discrimination.

$$\text{Correlation coefficient} = \frac{r_{xy}}{\sqrt{r_{xx}r_{yy}}}$$

Where;

r_{xy} = correlation between x and y

r_{xx} = reliability of x

r_{yy} = reliability of y

2.3 Path Analysis

Path analysis is a measure of the importance of intermediary variables in associating independent variables to dependent variables. This statistical analysis technique is known as a mediational approach. It can be defined as the existence of direct and indirect effects of independent variables towards dependent variables either through or without mediators. Usually in SPSS-ANOVA, conventional regressions need to be analyzed separately to determine this intermediate impression. However, the use of AMOS allows regression equations to run simultaneously in a single framework model.

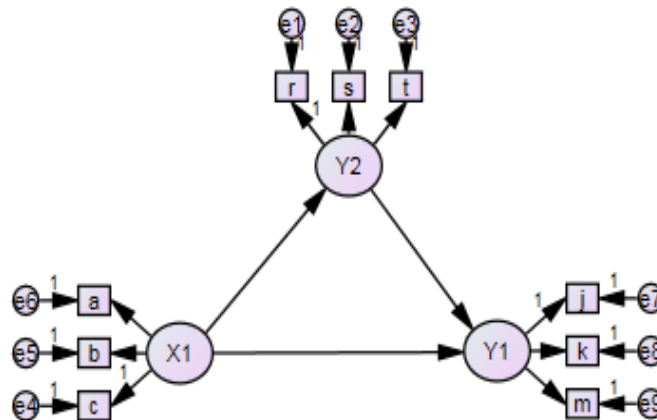


Figure 1 shows the example of mediator in a measurement model

The above figure shows the mediating statistical test. X1 acts as an independent variable, Y2 acts as a mediate variable and Y1 acts as a dependent variable. In this mediational approach, the direct, indirect and total effect of the best impression generated by X1 on Y1 can be determined through the significant value generated.

2.4 Structural Equation Modeling (SEM)

Research in social sciences has been used in statistical analysis for over a century. The decision-making through statistical methods has grown dramatically with the help of computer capabilities. The use of technology and user-friendly is one of the main reasons why access to statistical analysis has been widely practiced over recent years. In understanding data relationships, researchers must rely on univariate and bivariate analysis through advanced multivariate data analysis methods such as Structural Equation Modeling. Structural Equation Modeling or SEM is also a second generation statistical analysis technique developed for analyzing the association between multiple variables within a model framework. The relationship between variables can be expressed in a series of single or multiple regression equations. SEM techniques use quantitative combinations and correlation or causal assumptions into the model (Zainudin, 2012). SEM also can indirectly evaluate items under the latent construction individually. The latent construct is a variable that cannot be measured directly because it is just a concept of research hypothesized. Latent constructs are also known as variables that cannot be directly assessed or measured using a set of items in the questionnaire. The use of SEM can also model an association between constructions and simultaneously analyzed.

3 Results and Discussions

Table 2: Factor Loading

Construct	Item	Factor Loading	KMO and Bartlett's Test	
Demographic factor	EduF	0.852	Kaiser-Meyer-Olkin Measure of Sampling Adequacy. Approx. Chi-Square Df Sig.	0.475 1800.674 55 0.000
	EduM	0.896		
	EduG	0.515		
	OccF	0.647		
	OccM	0.887		
	Distance	0.784		
	Location	0.821		
	Language	0.808		
	Fees	0.844		
	Kid Age1	0.830		
	Kid Age2	0.729		
Reason	R1	0.884	Kaiser-Meyer-Olkin Measure of Sampling Adequacy. Approx. Chi-Square Df Sig.	0.693 491,624 3 0.000
	R2	0.871		
	R4	0.693		

Safety	S10	0.889	Kaiser-Meyer-Olkin Measure of Sampling Adequacy. Approx. Chi-Square Df Sig.	0.778 2274.067 10 0.000
	S12	0.883		
	S14	0.906		
	S16	0.934		
	S17	0.931		
Cleanliness	C1	0.986	Kaiser-Meyer-Olkin Measure of Sampling Adequacy. Approx. Chi-Square Df Sig.	0.824 2656.243 6 0.000
	C2	0.984		
	C4	0.949		
	C5	0.982		
Facilities	F1	0.897	Kaiser-Meyer-Olkin Measure of Sampling Adequacy. Approx. Chi-Square Df Sig.	0.808 2722.445 15 0.000
	F3	0.902		
	F6	0.909		
	F7	0.873		
	F8	0.904		
	F9	0.889		

Table 2 shows the Factor Loading (standardized regression weight), Kaiser-Meyer-Olkin Measure of Sampling Adequacy, Approximated Chi-square, degree-of-freedom and significance value of structural equation modeling for parent's satisfaction towards TASKA services.

According to Zainudin (2012), the load factor for the newly developed scale must be exceeding 0.5. In this study, all items with lower factor loading values of 0.5 are eliminated from 'construction' to ensure unidimensionality, parsimonious, incremental and absolute fit can be achieved. Analysis shows that 43 items were removed because they had a factor loading which was less than 0.5. Through observation of the researchers, the item is not too weak but has a modest factor loading of between 0.3 – 0.49.

Table 3: The Latent Constructs Fitness Summary

Construct				Incremental		Parsimonious	Absolute
	Chisq	Df	P value	TLI	CFI	Chisq / df	RMSEA
Facilities	70.372	19	0.000	0.780	0.868	3.704	0.084
Safety	22.986	5	0.000	0.766	0.883	4.797	0.043
Cleanliness	5.104	2	0.000	0.946	0.982	2,551	0.097
Reason	8.539	2	0.000	0.848	0.949	4.270	0.021

Table 3 above shows the fitness indices of all latent constructs in the model. Constructive mediators such as facilities, safety, cleanliness and reason have a value of ChiSq / df which is less than 5.0, so the benefits of parsimonious fitness tests have been achieved for the mediators. This construct model also has TLI and CFI values higher than 0.7 and RMSEA values less than 0.10. Therefore, additional and absolute fitness has also been achieved.

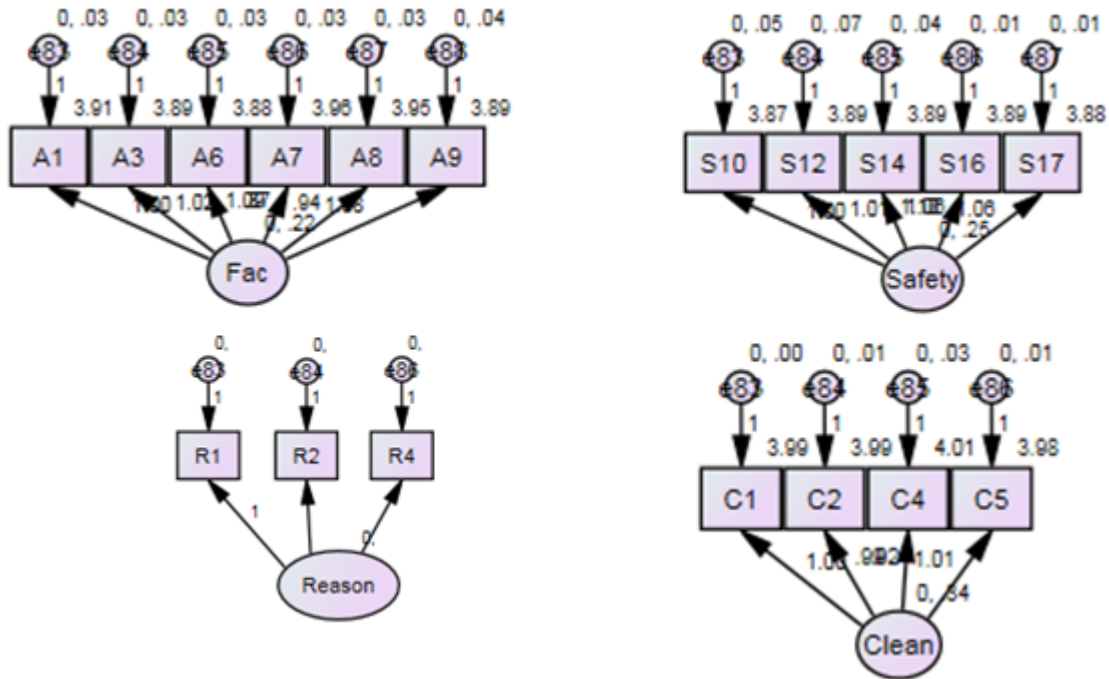


Figure 2 shows the strength of correlation between all constructs in the model.

All constructs have correlations of less than 0.80. It can be decided that discriminant validity had been accomplished and no finalized construct needs to be terminated from the model. It can be concluded that all four fitness requirements in this modeling had been achieved.

The ChiSquare / df and RMSEA value indicated in this model achieved a goodness of fit since the ChiSquare / df value is 2.409 which is lower than 5.0 and RMSEA value is 0.055 which is below 0.10 (Table 4).

Table 4: Model of Fitness

Model	CMIN	DF	CMIN / DF	CFI	TLI	RMSEA
Default model	888.761	369	2.409	0.823	0.895	0.055

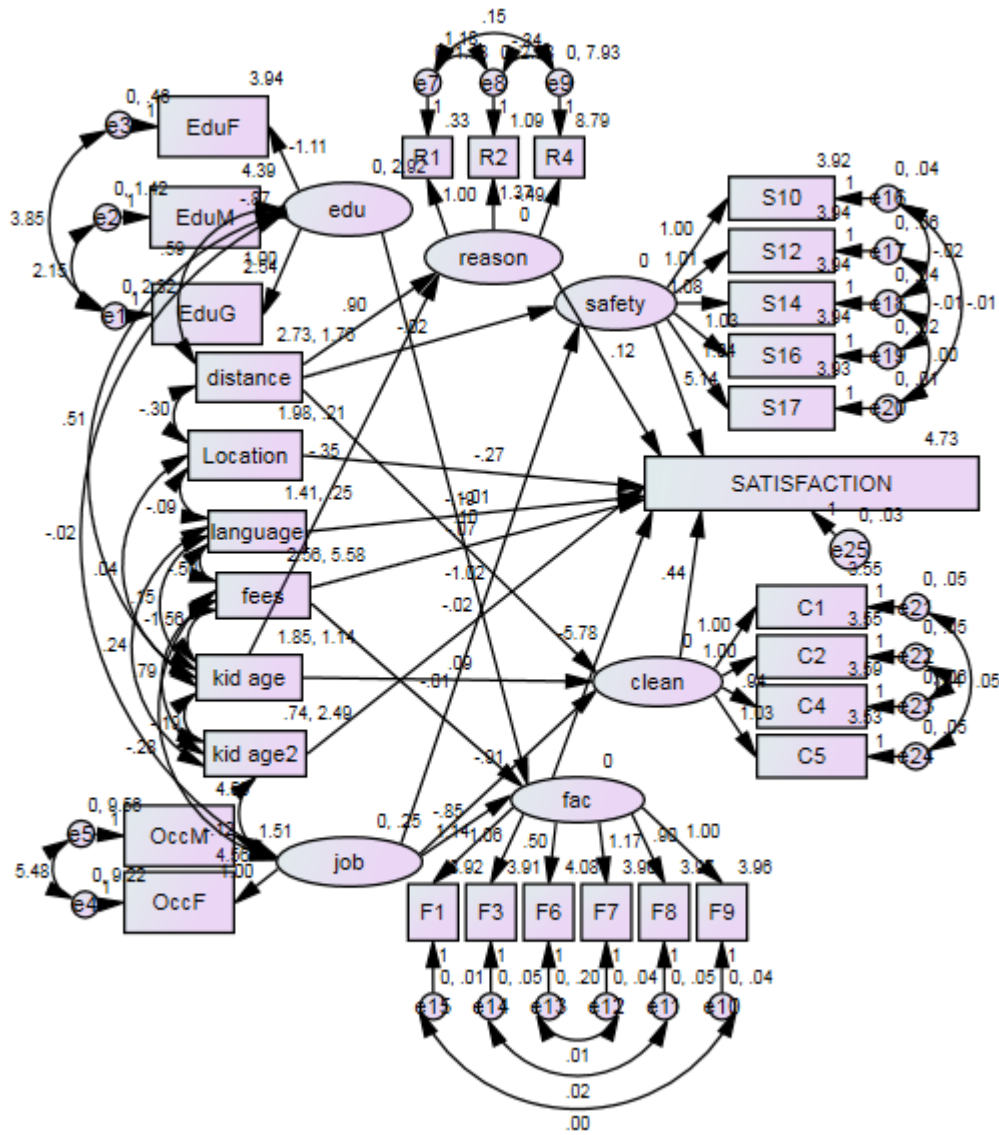


Figure 3 expresses the final model acquired when all fitness indexes have been achieved.

5 Conclusion

Based on the results obtained through the path analysis approach and SEM, more interesting results can be seen from the goodness of fit results through the chi-square/df values that meet the mediating requirements with the help of the CFI and TLI indices, as well as the significant values of the RMSEA precision level.

Through the SEM approach, not all the determinant factors in latent variables are taken into account. For facility determinants, items numbered F1, F3, F6, F7, F8 and F9 which have loading

factors of more than 0.5 are extended in the formation of the best model. Parents/guardians found that the level of TASKA service satisfaction in terms of facilities was depend on the activities of children in TASKA (F1), dressing room (F3), playroom (F6), sleeping space (F7), breastfeeding space (F8) and isolation space for the purpose of contagious disease to quarantine (F9).

Parents/guardians also emphasize safety matters throughout their children at TASKA. Among the factors determining their level of satisfaction are the preparedness of the achievable first aid kit by TASKA (S10), the existence of barrier doors that restrict children to the kitchen (S12), outdoor playground (S14) and outdoor games (S16).

In addition, the hygiene aspect is the main reason for the selection of the TASKA from the perspective of parents/guardians. The reasons are cleanliness around TASKA before operation time (C1), physical environment (C2), sensitivity to TASKA (C4) children and physical hygiene practices applied by TASKA (C5) personnel.

Parents/guardians have a special reason in the selection of a TASKA. The main factor that motivates the selection of TASKA was depend on TASKA distance from home, medium of language used, fees charged, curriculum provided and the age of their children. A significant satisfaction level for this parent/guardian can also be seen directly or indirectly where the total best effect of this route is 0.108 (0.9×0.12).

In addition to TASKA selection factors, fee indications are also a cause for the convenience offered by a TASKA. The fees charged also reflect the facilities provided. The significant direct and indirect impact illustrates the level of service satisfaction offered as a whole. This level of satisfaction is also indirectly influenced by the level of education and the parents/guardians occupation where the dependence of these significant decisions is assisted by three mediators; facilities, cleanliness and security.

In conclusion, the combination of these three mediators constitutes a strong consumer satisfaction (parent/guardian) to approximate a complete structured equation model while supported by demographic factors such as education level, occupation, location, distance, medium of language used, fees and age of children to strengthen the TASKA leverage factor.

CITATION AND REFERENCES

Anderson, James C. and David W. Gerbing (1982), "Some Methods for Respecifying Measurement Models To Obtain Unidimensional Construct Measurement," *Journal of Marketing Research*, 19 (November), 453-460.

Anderson, JC, & Gerbing, DW (1988). Structural Equation Modeling In Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin*, 103 (3), 411-423.

Baron, RM, & Kenny, DA (1986). The Moderator-Mediator Variable Distinction In Social Psychological Research: Conceptual, Strategic, And Statistical Considerations. *Journal of Personality and Social Psychology*, 51 (6), 1173-1182.

Bentler, PM & Bonett, DG (1980). Significance Tests And Goodness Of Fit In The Analysis Of Covariance Structures. *Psychological Bulletin*. 88: 588-606.

Bentler, PM (1990). Comparative fit indexes in structural models. *Psychological Bulletin* 107: 238-246.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. *Sage focus editions*, 154, 136-136.

Hair, JF, Black, WC, Babin, BJ, Anderson, RE and Tatham, RL (2006). *Multivariate Data Analysis*. 6th edition. Upper Saddle River, New Jersey: Prentice Hall.

Hu, L. & Bentler, PM (1999). Cut Off Criteria For Fit Indexes In Covariance Structure Analysis: Conventional Criteria Versus New Alternatives. *Structural Equation Modeling*, 6 (1), 1-55.

Marsh, H. W., & Hocevar, D. (1985). Application of confirmatory factor analysis to the study of self-concept: First-and higher order factor models and their invariance across groups. *Psychological bulletin*, 97(3), 562. Wheaton, B., Muthen, B., Alwin, D. F., & Summers, G. F. (1977). Assessing reliability and stability in panel models. *Sociological methodology*, 8, 84-136.

Zainudin, A. (2012). *Research Methodology And Data Analysis 5th Edition*. Shah Alam: Universiti Teknologi MARA Publication Center (UiTM Press).

Investigating attributes of international students' satisfaction in private universities in the Klang Valley, Malaysia

Cheok, Mui Yee¹ and Benjamin Chan, Yan Fah²

¹Associate Professor, Graduate School of Business, UNIRAZAK

²Professor, Graduate School of Business, UNIRAZAK

*cheokmy@unirazak.edu.my

ABSTRACT

The government of Malaysia has spent a substantial effort to attract international students to pursue their tertiary education in Malaysia. As such, there is a need to ensure that students are satisfied with the quality of services provided by universities in areas of physical facilities or even customer service, for instance. However, there has been insufficient evidence that examined the dimension of service quality and international students' satisfaction in the context of the education industry, as past researchers focused this area of research mostly in the commercial sectors. Hence, this study investigated the influence of the dimension of service quality on international students' satisfaction in private universities in the Klang Valley, Malaysia. A total of 376 survey questionnaires were collected from major private universities located in Selangor and Wilayah Persekutuan Kuala Lumpur using the random sampling approach. After analyzing the data using statistical software, the empirical result showed that reliability of service, assurance of service, staff's responsiveness, staff's empathy as well as tangibility of universities influenced the satisfaction of service provided to international students. By integrating these attributes into students' studying experience, private educators would be able to further improve the enrolment of international students into Malaysian private universities.

Keywords: private universities, service quality, students' satisfaction

1. INTRODUCTION

Tertiary education not only contributes to the social and economic progress, but also the regional Gross Domestic Product per capita of the country. Malaysia targets to have 250,000 international students studying in higher education institutions in 2025.

As of September 2019, there were more than 1.25 million students pursuing their tertiary education in Malaysia, with about 70% of them enrolled in PHEIs. Although foreign students account for only about 14% of the total enrolment of private higher education institutions, it accounts for 40% of the total revenue for the sector as a whole (Yojana, 2020).

However, the prolonged disruption of the novel coronavirus has been sustaining for almost one and a half years. According to MAPCU's statement (Yojana, 2020), new foreign student enrolment has been about 7,000 in 2020 compared with 16,500 in 2019, after the graduation of about 23,000 students in 2020. Foreign student population had dropped to around 52,000 students in

2020 compared to 92,415 in 2018 and that revenue from foreign students fell by around 44% in the entire education sector. Not only education leaders suffer financial losses, they are challenged with students' learning satisfaction through the lockdown period that may lead to the attrition of online learners (McIsaac & Gunawardena, 1996).

Previous research studies (e.g. Fortune, Spielman, and Pangelinan, 2011; Tratnik, 2017) have investigated student's perception and satisfaction toward online learning and face-to-face learning. Tratnik's (2017) research commented that students taking the face-to-face course were found to be more satisfied with the course compared to their online counterparts. However, Fortune, Spielman, and Pangelinan (2011) argued that there was no statistically significant difference in learning preference was found between online and face-to-face learning experience.

Many past studies (e.g. Moawad, 2020; Rovai & Downey; 2010) have examined areas of students' engagement towards e-learning as well as teachers' literacy on e-learning tools. In addition to that, most recent studies (e.g. Aljeraiwi & Sawaftah, 2018; Findik-Coskunçay et al., 2018; Rovai & Downey, 2010) have focused their research in the technical aspect of information technology. For instance, Aljeraiwi & Sawaftah (2018) found the issue of technical difficulty that caused students' and faculty's barrier for effective e-learning.

However, these studies did not give much consideration to social factors and those related to students. Investigating attributes that influence students' satisfaction on the overall service quality by higher education providers during their e-learning process can provide a deep understanding that may improve and promote a positive online learning environment.

Based on the above argument, it becomes pertinent to ascertain the impact of service quality on international students' satisfaction in Malaysia. This paper adopted the "SEVQUAL" theory (Parasuraman et al., 1988) to examine the connection among these variables, namely, tangibility, responsiveness, reliability, assurance and empathy (Parasuraman et al., 1988; Zeithaml et al., 2009). This research, therefore, attempts to investigate the extent of impact of service quality attributes on international students' satisfaction during the pandemic period in Malaysia.

The main research question is:

- to examine the extent to which tangibility, responsiveness, reliability, assurance and empathy influence international students' satisfaction during the pandemic period in the Klang Valley, Malaysia.
- to identify the main determinant of service quality that influence international students' satisfaction during the pandemic period in the Klang Valley, Malaysia.

2. LITERATURE REVIEW

According to Yilmaz (2007), service quality is defined as an experience that a person anticipates and perceives when a service is delivered by a service provider (Yilmaz, 2007). Akbaba and Kilinc (2001) further explained that the quality of service is perceived as unsatisfactory or low if the service delivered by the provider is not matched to expectation of consumers and vice versa.

Many researchers have cited Parasuraman's et al. (1988) and Zeithaml's et al. (2009) work in terms of utilising their constructs to evaluate service quality, which include tangible/physical characteristics, reliability, responsiveness, assurance and empathy. Borishade et al. (2021) further ascertained that higher education providers should embrace these elements of service quality into their operation context in order to stay competitive in the uncertain environment.

Potential students regard providing quality service in a tertiary education institution as an important determinant for deciding on the choice of university. Specifically, the quality of education is determined by the extent of whether universities fulfill students' expectations (Tan and Kek, 2004).

Factors that have been studied extensively in the past are mostly related to unsatisfying matters, such as facilities, the environment, the administration, placement services, learning material, support services, and activities provided by universities (Kaur & Bhalla, 2018). All these issues imply that quality education is considered as a series of services that is offered in a study package and it is expected to satisfy the expectation of students (Korka, 2009). It is undoubtedly that providing excellent service quality is the key driver of student gratification (Cronin et al., 2000; Petterson and Spreng, 1997).

Student satisfaction is defined as the extent to which a student achieves his/her expectation. The economic uncertainty as well as competitive market reinforces higher education providers to better enhance their delivery of excellent learning experience in order to sustain their market presence (Curtis et al., 2009). That's why institutional providers need to pay great attention to learner satisfaction (De Jager and Gbadamosi, 2013).

Particularly in the uncertainty of the pandemic situation, students are even more judgemental in terms of evaluating whether the delivery of quality online education compared to face-to-face education (Worlu et al., 2016). Hence, student's satisfaction evaluation becomes vital for higher education providers, as it determines the sustainability of performance (Oldfield and Baron, 2000).

3. MATERIAL AND METHODS

The sample of respondents was students who are currently studying in private universities in the Klang Valley. The data of this study was done using an online survey questionnaire. Random sampling was adopted as the approach to sample 376 students (Krejcie & Morgan, 1970) in the Klang Valley, Malaysia. SPSS was then used to analyse the data collected from the field.

4. RESULTS AND DISCUSSION

Based on the result, 57.71% of respondents were female and 43.35% of them were aged between 18 to 24 years old. A total of 32.71% of respondents were studying degree programs at their universities. The Cronbach's Alpha score of reliability, assurance, empathy, responsiveness, tangible and students' satisfaction demonstrated internal consistency of scale.

Based on the empirical result, 72.1% of the variance in international students' satisfaction was explained by reliability, assurance, empathy, responsiveness and tangible. In addition to that, it was concluded that reliability (t value = 6.791, p<0.05), assurance (t value = 7.241, p value <0.05), empathy (t value = 8.779, p value<0.05), responsiveness (t value = 7.368, p<0.05) and tangible (t value = 9.913, p value<0.05) were significant predictors of international students' satisfaction.

5. CONCLUSION

Based on the empirical result, tangibility is perceived as the main determinant that influences international students' satisfaction. The more appealing the visual presentation of the e-

infrastructure, the more likely international students perceive universities' facilities and equipment as satisfactory. This finding implies that education providers should continue to enhance their e-infrastructure to meet students' expectations.

Empathy is another key determinant that university providers should pay attention to as it influences the satisfaction of international students. The more empathy that education providers demonstrated, the more likely international students would feel satisfied with the quality of service provided. Students require an adaptation period to adjust to the changes in the learning system during the pandemic period, as they are faced with problems of poor internet connection and infrastructure (Bakalar, 2018) at their temporary staying places or home countries. It implies that teachers should assist their students to seal through the transition of learning approach smoothly.

In addition to tangibility and empathy, responsiveness is another determinant of international students' satisfaction. The more willing teachers assist students to deliver prompt and effective services, the more satisfied they are towards universities. This finding implies that there should be a closed interaction between teachers and students' learning and motivation.

Assurance is concluded as the next determinants of international students' satisfaction. The more credibility and competence university providers, the more students are satisfied with services offered. It implies providers would need to work their ways to enhance students' confidence level during this difficult period of time.

Reliability is the last determinant of international students' satisfaction. The greater the ability of university providers to offer consistent and trustworthy services throughout the period of difficult time, the more likely international students would feel satisfied with the services provided. This finding implies that students depend on university providers to offer quality of service consistently.

The collection of data was challenging as it was conducted during the MCO locked down 1.0 in 2020 and so the response rate was not encouraging despite numerous attempts had been made.

A longitudinal comparative study between the current and post pandemic period in the area of service quality and international students' satisfaction would be encouraged. Public universities or local students could also be included to compare the satisfaction level of service quality provided by private universities in Malaysia between the current and post pandemic period.

Based on the empirical results, it is concluded that private universities should improve international students' satisfaction in accordance to quality indicators. For one, in order to provide quality education to students, educators would need to take care of infrastructure facilities to reach international students' satisfaction. In other words, university providers should increase their capital investment to further improve their facilities.

CITATION AND REFERENCES

- Akbaba, A., Kılınc, I., (2001). Servqual practices in service quality and tourism management. *J. Tour. Res.* 12 (2), 162–168.
- Aljeraiwi, A., Sawaftah, W. (2018). The quality of blended learning based on the use of blackboard in teaching physics at King Saud University: students' perceptions. *Journal of Educational & Psycho- logical Sciences*, 19(2), 616–646.
- Bakalar, B. (2018). Book Review: Justice on both sides: Transforming education through restorative justice. *American Journal of Qualitative Research*, 2(2), 145-149.
- Borishade, T. T., Ogunnaike, O. O., Salau, O., Motilewa, B. D., & Dirisu, J. I. (2021). Assessing the relationship among service quality, student satisfaction and loyalty: the NIGERIAN higher education experience. *Heliyon*, e07590.
- Cronin Jr., J.J., Brady, M.K., Hult, G.T.M., (2000). Assessing the effects of quality, value and customer satisfaction on consumer behavioural intentions in service environments. *J. Indust. Manag.* 2 (2), 5–19.
- Curtis, T., Abratt, R., Minor, W., (2009). Corporate brand management in higher education: the case of ERAU. *J. Prod. Brand Manag.* 18 (6), 404–413.
- De Jager, J., Gbadamosi, G., (2013). Predicting students' satisfaction through service quality in higher education. *Int. J. Manag. Educ.* 11 (3), 107–118.
- Fındık-Coşkunçay, D., Alkış, N., Özkan-Yıldırım, S. (2018). A structural model for students' adoption of learning management systems: An empirical investigation in the higher education context. *Educational Technology & Society*, 21(2), 13–27.
- Fortune M, Spielman M and Pangelinan D (2011) Students' perceptions of online or face-to-face learning and social media in hospitality, recreation and tourism *Journal of Online Learning and Teaching* 7(1) pp 1-16.
- Kaur, H., & Bhalla, G. (2018). Determinants of effectiveness in public higher education-students' viewpoint. *International Journal of Educational Management*, 32(6), 1135-1155.
- Korka, M., (2009). Educatie de calitate pentru piata muncii. Editura Universitara Bucuresti, p. 17.
- McIsaac, M. S., & Gunawardena, C. N. (1996). Distance education. In D. H. Jonassen (Ed.), *Handbook of research for educational communications and technology* (pp. 403-437). New York: Macmillan.
- Moawad, R. (2020). "Online learning during the COVID-19 pandemic and academic stress in university students". *Revista Romaneasca pentru Educatie Multidimensionala*, 12(1Sup2), 100–107.
- Oldfield, B.M., Baron, S., (2000). Student perceptions of service quality in a UK university business and management faculty. *Qual. Assur. Educ.* 8 (2), 85–95.
- Parasuraman, A., Zeithaml, V.A., Berry, L.L., (1988). SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality. *J. Retailing* 64 (1), 12–40.
- Petterson, P.G., Spreng, R.A., (1997). Modelling the relationship between perceived value, satisfaction and repurchase intentions in a business-to-business, service context: an empirical investigation. *Int. J. Serv. Ind. Manag.* 8 (5), 414–434.
- Rajaendram, R. (2020). Road to success, The Star online. <https://www.thestar.com.my/news/education/2020/04/26/road-to-success>
- Rovai, A., Downey, J. (2010). Why some distance education programs fail while others succeed in a global environment. *The Internet and Higher Education*, 13(3), 141–147.

- Tan, K.C., Kek, S.W., (2004). Service quality in higher education using an enhanced SERVQUAL approach. *Qual. High Educ.* 10 (1), 17–24.
- Tratnik, A (2017). Student satisfaction with an online and a face-to-face Business English course in a higher education context *Journal Innovations in Education and Teaching International* 15(1) pp. 1-10.
- Worlu, R., Kehinde, O.J., Borishade, T.T., (2016). Effective customer experience management in health-care sector of Nigeria: a conceptual model. *Int. J. Pharmaceut. Healthc. Market.* 10 (4), 449–466.
- Yilmaz, I., 2007. The Hotel Business in Terms of Quality of Service Measurement and Client Managers: Izmir Example Unpublished Doctoral Dissertation. Dokuz Eylul University Institute of Social Sciences.
- Yojana Sharma, (2020). Private universities at risk as foreign students stay away, *University World News*, <https://www.universityworldnews.com/post.php?story=202012021628346>
- Zeithaml, V.A., Bitner, M.J., Gremler, D.D., (2009). *Services Marketing: Integrating Customer Focus across the Firm*, fifth ed. McGraw-Hill, New York.

Kesan Strategi Metakognitif Dalam Meningkatkan Penguasaan Kemahiran Belajar: A Systematic Literature Review

Effects Of Cognitive And Metacognitive Strategies On Student Academic Achievement In Five Countries: Systematic Literature Reviews

Aminah Binti Mat Yusoff¹ & Dr. Mohd Hisyam Bin Abdul Rahim²

¹Calon Doktor Falsafah Jabatan Pengajian Islam,
, Pusat Pengajian Umum dan Kokurikulum, Universiti Tun Hussein Onn Malaysia, 84200, Batu Pahat, Johor.

g-98002604@moe-dl.edu.my

+6019-9003362

² Pensyarah Kanan Jabatan Pengajian Islam, Pusat Pengajian Umum dan Kokurikulum, Universiti Tun Hussein Onn Malaysia, 84200, Batu Pahat, Johor.

mdhisyam@uthm.edu.my

+6019-7408695

Abstrak

Kewujudan kajian yang berbeza mengenai hubungan antara strategi pembelajaran dan pencapaian akademik menunjukkan pengaruh positif dan mempunyai strategi yang efisien terhadap proses pembelajaran. Kajian ini dilakukan dengan menggunakan kaedah tinjauan literatur review, dan juga bertujuan untuk melihat kesan strategi metakognitif terhadap pencapaian akademik pelajar di lima buah negara termasuk Malaysia. Tumpuan diberikan kepada penelitian artikel-artikel yang telah diterbitkan di lima buah negara dari tahun 2007 hingga 2021. Data penelitian menunjukkan bahawa, strategi pembelajaran seperti strategi metakognitif telah memberi kesan yang sangat signifikan terhadap pencapaian akademik pelajar sekolah dan universiti dalam kursus-kursus yang berbeza. Secara umumnya, boleh dikatakan bahawa strategi pembelajaran metakognitif yang merangkumi metodologi kajian seperti eksperimen, kuasi-eksperimen, hubungan atau korelasi, soal selidik dan juga meta-Analisis merangkumi kedua-dua jantina pelajar (wanita dan lelaki) sangat berkesan kepada pembelajaran mereka dalam kursus yang berbeza (sains eksperimental, matematik, Tourism, kejururawatan, psikologi, Bahasa asing dan Bahasa Inggeris).

Kata kunci: Kajian sistematik, strategi pembelajaran, strategi kognitif dan metakognitif, pencapaian akademik

Abstract

The existence of different studies on the relationship between learning strategies and academic achievement shows a positive influence and has an efficient strategy on the learning process. This study was conducted using a systematic survey method, and also aims to investigate the impact of cognitive and metacognitive strategies on student academic achievement in ten countries including Malaysia. The focus is on the review of articles that have been published in five countries from 2007 to 2021. Research data shows that learning strategies such as cognitive and metacognitive strategies have had a very significant impact on the academic achievement of school and university students in courses that differ. In general, it can be said that cognitive and metacognitive learning strategies that include research methodologies such as experimental, quasi-experimental, relationship or correlation, questionnaires and even meta-analysis covering both genders of students (women and men) are very effective to their learning in different courses (experimental science, mathematics, tourism, nursing, psychology, foreign languages and english).

Keywords: Systematic Review, Learning Strategies, Cognitive And Metacognitive Strategies, Academic Achievement

1. Pengenalan

Pencapaian manusia dalam semua bidang sains telah meningkatkan kepentingan latihan strategi pembelajaran. Perkara utama dalam latihan adalah pelajar diajar bagaimana untuk belajar, bagaimana cara menghafal, dan teknik menyelesaikan masalah. Pelajar harus mengetahui kaedah dan strategi pembelajaran yang paling berkesan. Penyelidik merumuskan dalam kajian mereka bahawa kebanyakan masalah pembelajaran yang dihadapi oleh pelajar adalah kerana kurangnya kemahiran belajar. Strategi belajar merangkumi strategi kognitif dan metakognitif yang dapat membantu pelajar untuk mencapai kehendak mereka dalam pembelajaran. Oxford mendefinisikan strategi pembelajaran sebagai satu set aktiviti khusus yang dilakukan oleh pelajar untuk lebih mudah, lebih cepat, lebih mengembirakan, lebih berkesan, dan lebih mudah mengikut situasi tertentu. Penerapan strategi kognitif dan metakognitif sangat penting dalam memudahkan pembelajaran, proses mengingat, dan menghafal. Strategi kognitif dan metakognitif mempunyai kesan yang paling kuat terhadap pembelajaran pelajar, dan terdapat hubungan positif dan signifikan antara pembelajaran kaedah dan pencapaian akademik di universiti dan sekolah (Saied dan Mehrabi, 2013; Yang, 2005).

Pendidik ialah guru, ibu bapa dan ahli masyarakat mempunyai tanggungjawab penting dalam usaha melahirkan insan terdidik, bermula daripada saat dilahirkan sehingga dewasa. Allah mencipta manusia dengan kepelbagaian kecerdasan oleh itu pendidik harus peka membangunkan seseorang itu mengikut kebolehan dan bakat yang ada pada diri masing-masing (Abdullah Nasih Ulwan, 1981). Bersesuaian dengan kandungan Pelan Pembangunan Pendidikan Malaysia (2013-2025) yang telah menetapkan setiap murid perlu mendapat akses kepada pendidikan agar dapat membangunkan potensi diri dalam menghadapi cabaran hidup masa hadapan (KPM 2021). Justeru, aktiviti berfikir antara faktor utama menjadikan manusia orang yang berjaya. Menurut Imam Hasan al-Basri, berfikir sesaat lebih baik daripada berdiri untuk solat diwaktu malam. Manakala dalam al-Quran Allah berulang kali menyeru agar manusia sentiasa berfikir dan mengoptimalkan penggunaan akal melalui pendengaran, penglihatan, kajian, membuat refleksi serta mengambil pengajaran daripada setiap peristiwa yang berlaku dalam seluruh aspek kehidupan (Zainorah Binti Kadri, 2015).

Firman Allah yang bermaksud :

[“Sesungguhnya dalam penciptaan langit dan bumi, dan silih bergantinya malam dan siang terdapat tanda-tanda bagi orang-orang yang berakal”.] (Al-Quran 3 : 190)

Menurut Tafsir Ibnu Kathir “*Terdapat tanda-tanda bagi orang-orang yang berakal*” ialah mereka yang sempurna serta memiliki kecerdasan, kerana hanya dengan cara ini dapat mengetahui segala sesuatu dengan terang dan jelas pada intipatinya masing-masing.

Firman Allah lagi dalam ayat seterusnya:

[“(Iaitu) orang-orang yang ingat kepada Allah ketika sedang berdiri, duduk dan sewaktu baring. Dan mereka memikirkan kejadian langit dan bumi, (lantas berdoa), “ Wahai Tuhan kami, tidaklah Engkau ciptakan semuanya ini dengan sia-sia. Maha suci Engkau. Maka peliharalah kami dari azab neraka”.] (Quran, 3: 191)

Daripada firman Allah SWT ini, berfikir tentang hikmah yang terkandung di dalam setiap ciptaan dapat membuktikan kebesaran Allah SWT. Oleh itu perlunya ada usaha untuk merangsang kemahiran berfikir manusia sejak daripada usia kanak-kanak. Beberapa penelitian berkaitan dengan proses pembelajaran menyatakan bahawa terdapat dua unsur penting yang terlibat secara langsung dan tidak secara langsung dalam proses berfikir. Elemen tersebut merupakan proses kognitif yang menjadi teras model dalam aktiviti berfikir. Manakala elemen kedua yang disifatkan penting oleh

pengkaji untuk membantu proses berfikir iaitu metakognitif. (Jl.Kharuddin Nasution 2011) Oleh itu guru memainkan peranan penting untuk meningkatkan pengetahuan dan ilmu yang berkaitan dengan strategi metakognitif kerana ia merupakan satu usaha untuk meningkatkan kesedaran murid terhadap proses pembelajaran ataupun dikenali juga sebagai proses kognitif.

Flavell (2000) menganggap metakognisi sebagai jenis pengetahuan atau pengetahuan kognitif yang melibatkan aspek ukuran kognitif dan cara mengaturnya. Dengan kata lain, dia percaya bahawa ini adalah konsep metakognisi kerana pengertian utamanya merujuk kepada pengenalan semula kognisi. Oleh itu kognisi merujuk kepada persepsi, memproses, mengekalkan, dan memindahkan maklumat manakala metakognisi adalah aktiviti yang merangkumi tindakan yang berkaitan dengan empat elemen dan kawalan yang disebutkan tadi (Aghazadeh, 2011). Berdasarkan kajian yang telah dibuat menunjukkan bahawa metakognisi berkaitan dengan belajar, mempelajari secara praktikal, berfikir secara kritis, menyelesaikan masalah dan membuat keputusan, semua usaha ini diperlukan untuk mencapai kejayaan dalam pendidikan (Scheifer dan Dull, 2009). Semasa menjalankan penyelidikan, kaedah pembelajaran dan pemikiran yang berbeza atau kognitif dan metakognitif menunjukkan bahawa strategi ini dapat dipelajari, iaitu guru dapat menggunakan secara meluas dalam kursus berlainan. Guru mengajarkan strategi pembelajaran ini kepada pelajar mereka dan setelah itu pelajar boleh menggunakan strategi ini secara sukarela serta boleh mengukur sendiri kesan positif terhadap pembelajaran dan pencapaian mereka (Saif, 1997)

Weinstein dan Hume (1998) seperti yang diambil dari Saif (1997) telah menyatakan bahawa guru dapat menolong pelajarnya melalui pengajaran, pembelajaran dan kemahiran belajar (strategi kognitif dan metakognitif) agar pelajar lebih berjaya dan mempunyai peranan lebih aktif dalam mencapai kekayaan akademik mereka. Flavell (1979) seperti diambil oleh Saif (1997) yang telah mendalami tentang strategi kognitif dan metakognitif, menyatakan bahawa pelajar menerapkan semua strategi kognitif untuk mencapai kejayaan mereka dan menggunakan strategi metakognitif untuk mengawal kejayaan dan pencapaian mereka. Di samping itu, kajian lain menunjukkan bahawa terdapat hubungan antara strategi pembelajaran dan pencapaian akademik (Karami, 2002). Dengan melatih strategi kognitif dan metakognitif, membantu peningkatan pembelajaran pelajar dan meningkatkan keyakinan motivasi mereka terhadap latihan seseorang dan membantu pencapaian akademik mereka. (Beckman, 2002). Shouse, Chen dan Hsieh (2007) menekankan kepentingan menyediakan sistem pendidikan yang sesuai dengan kaedah pembelajaran pelajar di sekolah. Sekiranya bahan pendidikan sesuai dengan gaya kognitif pelajar, mereka akan meningkatkan pencapaian dan motivasi yang lebih baik. Kajian lain menunjukkan bahawa menggunakan strategi pembelajaran kognitif dapat memberi kesan terhadap pembelajaran dan pencapaian akademik pelajar (Meec, 1998).

Strategi pembelajaran latihan boleh memberi kesan positif terhadap pencapaian akademik (Fardi Yazdi, 2005). Isu ketidakmampuan dalam memperoleh dan belajar dengan betul, telah menarik perhatian beberapa penyelidikan pendidikan serta pakar dan penyelidik dalam beberapa tahun kebelakangan ini untuk peringkat sekolah dan universiti. Oleh itu, untuk mencapai objektif yang dinyatakan, pemahaman yang lebih baik mengenai masalah yang dapat dipelajari dianggap sebagai salah satu objektif dan aktiviti pendidikan yang penting. Oleh itu, kajian ini berusaha untuk mengkaji kesan kognitif dan strategi metakognitif terhadap pencapaian akademik pelajar sekolah dan universiti melalui kajian-kajian lepas yang lebih bersistematik.

2. Metodologi

Kaedah kajian ini menggunakan pelbagai sorotan kajian yang disertakan dalam penyelidikan literatur. Populasi dalam kajian ini adalah kajian yang berkaitan dengan kesan strategi kognitif dan metakognitif terhadap pencapaian akademik di Iran dan luar negara. Tempoh penelitian artikel

adalah bermula dari 2007 hingga 2021. Oleh itu, populasi merangkumi semua artikel yang diterbitkan dalam jurnal penyelidikan yang berindeks dalam pangkalan data SID, Irlandoc, Magiran, dan Noormags di Iran, serta jurnal yang diterbitkan di peringkat antarabangsa yang diindeks dalam pangkalan data Science Direct, Elsevier, Google Scholar seperti American Psikologi, jurnal Pythagoras, jurnal pedagogi instruksional. Jurnal ini menggunakan korelasi yang berbeza, faktor-perbandingan, kaedah dan reka bentuk penyelidikan eksperimental dan kuasi eksperimen untuk menyiasat kesan strategi pembelajaran kognitif dan metakognitif pada petunjuk pencapaian akademik. Untuk penyiasatan utama, kata kunci pertama yang sah ditentukan berdasarkan tinjauan literatur untuk digunakan mereka dalam mencari kajian primer. Kata kunci merangkumi strategi pembelajaran, strategi kognitif dan metakognitif, pembelajaran sendiri, pencapaian akademik, strategi pembelajaran, kejayaan akademik dan lain-lain.

3. Dapatan Kajian

Objektif kajian ini adalah untuk mengkaji kesan strategi kognitif dan metakognitif terhadap pencapaian akademik pelajar di negara lain dengan menggunakan tinjauan literatur. Jadual 1 dan 2 menunjukkan hasil yang diperoleh dari artikel yang berlainan mengenai kesan strategi kognitif dan metakognitif terhadap pencapaian akademik pelajar. Dalam jadual ini mengandungi nama pengarang dan tahun penerbitan, negara atau kota di mana setiap kajian telah dilakukan, kaedah penyelidikan dan reka bentuk, populasi, dan akhirnya menyatakan hasil daripada kajian yang dilakukan.

Bil	Pengarang	Bandar	Jenis penyelidikan	Metodologi kajian	Populasi	Dapatan Kajian
1.	Napapat Thongwicht, Adcharawan Buripakdib 2021	Songkla University Thailand	premeiar	experimental group	Pelajar jurusan Tourism	<p>kajian ini bertujuan untuk meneroka keberkesanan arahan strategi membaca metakognitif melalui teknik pemodelan membaca pelajar kefahaman dalam konteks ESP. Satu kumpulan kajian pra dan pasca ujian dilaksanakan dengan kumpulan eksperimen pelajar yang mengikuti kursus Bahasa Inggeris untuk Pelancongan.</p> <p>Hasilnya menunjukkan bahawa skor ujian pasca pelajar adalah jauh lebih tinggi daripada skor ujian pra mereka setelah menerima rawatannya ($p < 0.05$). Hasil ini disokong oleh data dari log pembelajaran pelajar yang menyatakannya terdapat kemajuan berterusan dalam pembacaan bagi pelajar yang menggunakan strategi metakognitif. Selain itu, persepsi pelajar mencerminkan hasil positif terhadap penggunaan strategi metakognitif ketika membaca.</p> <p>Kesimpulannya, kajian menunjukkan bahawa strategi membaca metakognitif seharusnya bersepadu, bukan sahaja dalam</p>

						kelas membaca Bahasa Inggeris, tetapi juga di kelas lain yang mempunyai penglibatan dalam aktiviti membaca untuk meningkatkan penguasaan murid membaca dengan strategi yang meningkatkan pemahaman membaca mereka.
2.	Cecilia Guanfang Zhaoa, Linyu Liao 2021	Taipa, Macau, China.	Prepear	Survey/kuantitatif	200 Pelajar EFL	Analisis faktor data empirikal menunjukkan jenis strategi utama yang digunakan oleh penulis EFL merangkumi pengaturan ujian masa. Analisis korelasi dan regresi, bagaimanapun menunjukkan kesan terhad dan campuran penggunaan strategi tersebut terhadap prestasi penilaian penulisan. Hasil dari kajian ini memerlukan perlakuan dan pengukuran penggunaan strategi metakognitif yang lebih terperinci dan canggih dalam penyelidikan masa depan, terutama dalam perancangan awal instrumen, ujian dan kesan. Bukti baru seperti itu dapat memberi maklumat pedagogi penulisan, terutama dalam menghadapi keperluan untuk mengintegrasikan arahan strategi metakognitif ke dalam kelas penulisan L2.
3.	Mohd Sham Bin Kamis 2017	Seremban /Malaysia	Primear	Eksperimental ANCOVA/ ujian Pra pos	pelajar tingkatan 4 di SMK Agama	Walaupun kajian membaca teks Arab berkembang di Arab dan negara-negara lain, ia masih tidak biasa di Malaysia. Oleh itu, kajian ini memfokuskan pada penggunaan strategi metakognitif Arab (MCS) yang digunakan oleh pelajar tingkatan 4 di SMK Agama di Seremban. Selain daripada itu, artikel ini bertujuan untuk mengkaji kesan dari MCS penggunaan teks Arab dalam pemahaman dan perbendaharaan kata Arab. Berdasarkan pensampelan berstrata, 60 responden diambil dari SMKA di Seremban untuk menjalani kajian ini. Kumpulan ini dibahagikan kepada dua kumpulan, dengan 30 dalam kumpulan eksperimen dan 30 dalam kumpulan kawalan. Kajian ini adalah penyelidikan kuantitatif dan merupakan kaedah penyelidikan berdasarkan numerik yang menggunakan ujian ANCOVA. Dalam kajian ini, latihan diberikan antara ujian pra dan ujian ujian pasca.

						Akhirnya, setelah kajian separa eksperimen dilakukan, penemuan menunjukkan bahawa ada yang signifikan perbezaan dalam pemahaman bahasa Arab dan perbendaharaan kata Arab ujian pasca antara kumpulan eksperimen dan kumpulan kawalan. Kumpulan eksperimen menunjukkan tahap yang lebih tinggi daripada kumpulan kawalan. Kajian ini menyumbang kepada bidang pendidikan Arab dari perspektif pemahaman dan perbendaharaan kata dalam MCS membaca bahasa Arab teks.
4.	Ahmad Nurul Hidayat 2015	Indonesia	Primear	Korelasi/ Kuantitatif	30 Mahasiswa lelaki	Berdasarkan hasil kajian ini dapat dilihat bahawa strategi pembelajaran metakognitif mempunyai korelasi positif dan signifikan dengan kemahiran mendengar dan kefahaman membaca kepada pelajar kelas VII MTs Al-Amiriyyah, Daerah Tegalsari Kabupaten Banyuwangi Tahun Akademik 2013/2014.
5.	Maroofi et. al 2014	Iran/ Sanandaj	Primear	Quasi- eksperimental	Murid perempuan gred lima sekolah rendah	Mengajar menggunakan strategi kognitif dan metakognitif telah memberi kesan kepada pencapaian akademik kanak-kanak perempuan di gred kelima sekolah rendah
6.	Rasoli Khorshidi at. al. 2014	Iran/ Tehran	Primear	Korelasi/Path analysis	Pelajar BA	Metakognitif mempunyai kesan langsung terhadap strategi kognitif, strategi asas, pengurusan sumber dan pencapaian akademik. Metakognisi memberi kesan paling banyak terhadap pencapaian pelajar.
7.	Karami al. 2013	Iran/ Tehran	Primear	Eksperimental (Ujian Pra/Ujian Post)	Murid lelaki gred tiga kelas kedua sekolah rendah	Mengajar menggunakan strategi kognitif dan metakognitif meningkatkan kreativiti, motivasi, kejayaan, dan konsep pembelajaran- sendiri.
8.	Salehi at. al. 2013	Iran/ Isfahan	Primear	Korelasi	Pelajar kejururawatan	Hasil kajian menunjukkan bahawa pelajar kejururawatan yang menggunakan strategi kognitif " <i>Mental repetition and rehearsal</i> ", perkembangan semantik lebih banyak daripada yang lain. Dalam Selain itu, mereka menggunakan kes seperti menyusun, berfikir secara kritis berada pada tahap sederhana untuk proses mencari

						maklumat dan belajar dalam Kursus Pembedahan.
9.	Zhang et al 2013	China	Primear	Survey/ qualitative	School students	Untuk mempelajari Bahasa Inggeris sebagai Bahasa kedua, pelajar menggunakan strategi metakognitif dan terdapat perbezaan antara pelajar yang menggunakan strategi ini dan mereka yang tidak menggunakan. Kumpulan pertama mempunyai pencapaian yang signifikan dalam Bahasa Inggeris mereka.
10	Ganji et al. 2012	Iran/Khor rama bad	Primear	korelasi	Pelajar perempuan sekolah menengah	Menggunakan strategi kognitif dan metakognitif berkesan pada pencapaian akademik pelajar samada tinggal dibandar atau kampung. Keberkesanan dalam menggunakan strategi ini menunjukkan pelajar bandar menggunakan kedua-dua strategi.
11	Taymoir Fard 2021	Iran/ Kohgilouy eh and Buyerahm ad	Primear	Multiple regression	Pelajar lelaki dan perempuan sekolah menengah	IQ mampu meramalkan pencapaian akademik mempunyai lebih baik daripada metakognisi. Lebih-lebih lagi, pelajar yang mempunyai kemahiran IT tinggi mempunyai lebih banyak pencapaian dalam akademik.
12	Peng 2012	China	Primary	Experimental (pretest/postt est)	Male and female MB university students	Hasil kajian menunjukkan bahawa strategi kognitif mempunyai kesan paling banyak pada skor pelajar. Strategi kognitif, Pembelajaran sendiri, dan kerisauan dalam peperiksaan adalah petunjuk paling penting yang memberi kesan pada peningkatan prestasi pembelajaran Bahasa inggeris
13	Masoud Gholamali Lavasani. 2011	Tehran, Iran	Primear	Eksperimental	Murid perempuan sekolah rendah	Tujuan kajian ini adalah untuk mengkaji kesan latihan strategi pembelajaran peraturan diri terhadap motivasi akademik dan efikasi sendiri pelajar. Oleh itu, dua puluh tiga kelas perempuan sekolah rendah pelajar dipilih sebagai sampel. Salah satu kelas dipilih sebagai kumpulan eksperimen yang diajar strategi pembelajaran peraturan sendiri selama 10 sesi enam puluh minit dan kumpulan kawalan tidak menerima apa-apa. Pada mulanya, kumpulan eksperimen diuji dengan strategi bermotivasi untuk belajar soal selidik (MSLQ), akademik skala motivasi dan skala keberkesanan diri, dan kemudian skor kedua-dua

						<p>kumpulan dibandingkan dalam ujian pasca. Reka bentuk kajian adalah kaedah eksperimen semu dengan ujian pra dan ujian pasca. Untuk mengukur pembolehubah tersebut soal selidik motivasi akademik (Harter, 1981) dan peraturan sendiri akademik (Mcilroy & Bunting, 2001) adalah terpakai. Data dianalisis dengan mengira analisis kovarians (ANCOVA). Hasil kajian menunjukkan bahawa pengajaran strategi pembelajaran peraturan sendiri telah memberi kesan yang signifikan terhadap motivasi akademik dan keberkesanan diri pelajar.</p>
14	Marzita Puteha, Mahani Ibrahim 2010	Perak Malaysia	Primear	survey questionnaire	249 pelajar aliran sains tingkatan empat.	<p>Artikel ini membentangkan penemuan mengenai strategi pembelajaran sendiri di kalangan pelajar Tingkatan Empat di Negeri Perak, Malaysia. Kajian kes adalah digunakan untuk menentukan penggunaan strategi yang diatur sendiri di kalangan pelajar dan bagaimana ia membantu pelajar dalam menyelesaikan masalah Matematik.</p> <p>Selain itu bahawa, tahap motivasi dalam kalangan pelajar juga dikenal pasti. Data telah dikumpulkan melalui Motivated Learning Strategies Questionnaire Revision (MSLQ-R), meninjau jawapan bertulis pelajar (ujian) dan temu ramah. Kajian menunjukkan tahap motivasi dan wujudnya strategi pembelajaran sendiri di kalangan pelajar. Penyelidikan ini telah menunjukkan bahawa terdapat hubungan yang kuat antara strategi pembelajaran yang diatur sendiri dengan prestasi penyelesaian masalah pelajar.</p>
15	Dignath, et al 2008	Germany/ Frankfurt	Primary	Review Meta-analysis	articles	<p>Program latihan atau strategi peraturan sendiri mempunyai kesan paling banyak walaupun kepada pencapaian akademik pelajar sekolah rendah. Setelah menganalisis keputusan ujian menunjukkan kesan sebilangan pembolehubah sederhana seperti belajar dan ciri latihan. Mengenai faktor berkaitan dengan kandungan rawatan, yang berkesan terhadap</p>

						teori literature mengenai eksperimen domain intervensi. Tambahan, strategi kognitif dan metakognitif atau latihan motivasi serta kerja berpasukan sebagai kaedah yang digunakan. Mereka mempunyai kesan yang baik kepada pencapaian akademik.pelajar.
16	Berthold et al 2007	German	Premier	Eksperimental	Pelajar psikologi	Hasil kajian menunjukkan bahawa strategi kognitif terhadap pelajar dengan gabungan strategi metakognitif mempunyai kesan yang signifikan untuk membantu pelajar mencapai kejayaan.

4. Analisis dan Perbincangan

Tinjauan literatur sistematik ini bertujuan melihat pencapaian akademik pelajar setelah menggunakan strategi pembelajaran (kognitif-metakognitif). Strategi pembelajaran mempunyai peranan yang sangat penting dalam menjelaskan perbezaan pencapaian dalam akademik. Hasil kajian ini menunjukkan bahawa strategi kognitif dan metakognitif saling memerlukan agar prestasi akademik pelajar dapat dimaksimumkan, kedua strategi ini harus diterapkan kerana kebanyakan data menunjukkan bahawa jika tidak dapat menguasai strategi kognitif dan metakognitif akan menyebabkan prestasi pelajar menjadi rendah (Mesrabadi, Erfani & Adab, 2014). Menurut kajian yang dilakukan oleh Napapat Thongwichit (2021) yang disokong oleh data daripada log pembelajaran pelajar ada menyatakan bahawa, terdapat kemajuan berterusan dalam pembacaan bagi pelajar yang menggunakan strategi metakognitif.

Selain itu, persepsi pelajar mencerminkan hasil positif terhadap penggunaan strategi metakognitif ketika membaca. Kesimpulannya, kajian ini menunjukkan bahawa strategi membaca metakognitif seharusnya bersepadu, bukan sahaja dalam kelas membaca Bahasa Inggeris, tetapi juga di kelas lain yang terlibat dalam aktiviti membaca untuk meningkatkan penguasaan murid dengan strategi yang mampu meningkatkan kefahaman bacaan mereka. Manakala menurut Cecilia Guanfang Zhaoa (2021) yang menggunakan instrumen soal selidik untuk menguji keberkesanan strategi metakognitif terhadap perkembangan penulisan pelajar menyarankan agar perlu kepada pengukuran dalam strategi metakognitif yang lebih terperinci dan canggih untuk penyelidikan masa depan, terutama dalam perancangan awal instrumen, ujian dan kesan. Bukti baru seperti itu dapat memberi maklumat pedagogi dalam penulisan, terutamanya ketika berdepan dengan keperluan untuk mengintegrasikan arahan strategi metakognitif ke dalam kelas penulisan L2. Hasil kajian yang berbeza menunjukkan bahawa kedua-duanya strategi kognitif dan metakognitif sangat berkesan terhadap kejayaan dan pencapaian akademik pelajar. Hasil kajian yang dilakukan oleh Maroofi (2014) dan Karami (2013) menunjukkan bahawa kognitif dan strategi metakognitif memberi kesan yang paling besar terhadap pencapaian akademik pada pelajar yang mengikuti kursus sains eksperimen dan kebanyakan pelajar yang menggunakan strategi ini lebih berjaya daripada mereka yang tidak menggunakannya. Selain itu, hasil kajian Salehi (2013) menunjukkan bahawa pelajar kejururawatan menggunakan strategi pengulangan dan latihan dan pengembangan semantik lebih daripada strategi penyusunan dan pemikiran kritis. Boleh dikatakan bahawa kaedah ini menyebabkan pembaca menjadi aktif kerana mereka memproses maklumat secara melalui pemikiran yang efektif dan berlaku peningkatan dari segi pembelajaran.

Manakala dapatan kajian yang dilakukan oleh Magogwe (2013), Zhang (2013) dan Eluemuno (2013) menunjukkan bahawa strategi kognitif dan metakognitif penting untuk melatih serta memastikan pencapaian yang baik dalam bahasa Inggeris dan akademik pelajar terhadap kursus ini. Strategi metakognitif sangat membantu untuk mencapai kejayaan dalam pembelajaran dan pencapaian akademik dan isu ini disebabkan strategi metakognitif dipertimbangkan dalam proses pembelajaran sebagai salah satu tindakan kognitif yang penting, dan peranannya adalah untuk meningkatkan pelajar kebolehan dalam merealisasikan potensi mereka. Henk dan Graaff (2004) percaya bahawa dalam strategi metakognitif, pelajar dilatih dengan peraturan diri, memahami mata pelajaran pembelajaran, dan rasa mengetahui. Pelajar yang mengatur diri mengenal pasti tujuannya sendiri.

Penyelidikan yang dilakukan oleh Peng (2012) dan Lee (2008) menunjukkan bahawa kognitif dan strategi pengawal selia diri sendiri berkesan dan memberi persepsi positif pelajar terhadap sistem pendidikan dalam meningkatkan prestasi akademik mereka. Mengenai hasil kajian yang berbeza, dapat dilihat bahawa kognitif dan strategi metakognitif mempunyai kesan positif yang tinggi terhadap pencapaian akademik pelajar. Ia adalah mengesyorkan agar strategi kognitif dan metakognitif secara bersamaan dianggap sebagai keutamaan kurikulum di sekolah dan institusi pendidikan. Melatih strategi kognitif seperti melakukan latihan mental mampu membantu pelajar memilih perkara yang penting dan patut diingati serta sangat penting mencari titik pertemuan antara apa yang telah diingati, seterusnya diproses dan dikaji (Sifert, 1991).

5. Kesimpulan

Kajian ini dilakukan dengan tujuan mengenalpasti keberkesanan strategi kognitif dan metakognitif terhadap penguasaan pembelajaran pelajar. Kajian ini juga mengambil kira aspek-aspek kelemahan pengajaran dan pemudahcaraan (PdPc), kesediaan pelajar, motivasi rendah untuk setiap pelajar serta keupayaan mereka untuk menguasai setiap kemahiran yang terdapat di dalam aktiviti membaca serta keperluan murid untuk menguasai kemahiran secara pembelajaran sendiri. Satu pelan Intervensi telah dirancang oleh pengkaji bagi membantu murid menguasai kemahiran dengan cepat dan pantas iaitu menggunakan strategi metakognitif (*Preview: Question, Read, Reflect, Recite dan Review*).

6. Rujukan

- Ahmad Nurul Hidayat. 2015. "Korelasi Penggunaan Strategi Metakognitif Dengan Kemahiran Menyimak Dan Membaca Siswa Kelas Vii Mts Al-Amiriyyah Blokagung Banyuwangi Tahun Pelajaran 2013/2014". NOSI Volume 2, Nomor 8, Februari 2015. Mahasiswa Magister Pendidikan Bahasa Indonesia.
- Berthold, K., Nuckles, M. & Renkl, A. (2007). Do learning protocols support learning strategies and outcomes? The role of cognitive and metacognitive prompts. *Elsevier Learning and Instruction*, 17, 564-577.
- Cecilia Guanfang Zhaoa, Linyu Liaoba, Metacognitive strategy use in L2 writing assessment Cecilia E21-4074, Department of English, Faculty of Arts and Humanities, University of Macau, Avenida da Universidade, Taipa, Macau, China.
- Dignath, Charlotte., Buettner, Gerhard., Langfeldt, Hans, P. (2008). How can Primary school students learn self-regulated learning strategies most effectively? A meta- analysis on self-regulation training programmers. *Elsevier Educational Research Review*, 3, 101-129.
- Eluemuno, A. & Azuka-Obieke, U. (2013). The effect of metacognitive skills on performance in English language among senior secondary school students in Anambra State, Nigeria. *Journal of Emerging Trends in Educational Research and Policy Studies*, 4(4), 678-685.
- Gangi, K., Yagoubi, A. & Ramezani Far, S. (2012). Roles of Motivational beliefs and cognitive learning styles on academic achievement of students. *Journal of Counseling's and Psychology*, 1(1), 1-32.
- Karami, B., Karami, A.A. & Hashemi, N. (2013). Effectiveness of cognitive and metacognitive strategies training on creativity, achievement motive and academic. *Journal of Innovation and Creativity in Human Science*, 2(4), 121-139.
- Marzita Puteh dan Mahani Ibrahim. 2010 The Usage of Self-Regulated Learning Strategies among Form Four Students in the Mathematical Problem-Solving Context: A Case Study International Conference on Mathematics Education Research 2010 (ICMER 2010) Science and Mathematics Faculty, Universiti Pendidikan Sultan Idris.
- Maroofi, Y., Kordnoghabi, R. & Saesmocheshi, L.(2014).The effectiveness of instructing cognitive and metacognitive strategies on academic achievement in experimental science lesson. *Biquarterly Journal of Cognitive Strategies in Learning*, 1(2) 83-96.
- Masoud Gholamali Lavasani, Fatemeh Sadat Mirhosseini dan Elahe Hejazi,^a Maryam Davoodi 2011 International Conference on Education and Educational Psychology (ICEEPSY 2011) The Effect of Self-regulation Learning Strategies Training on the Academic Motivation and Self-efficacy Masoud Gholamali Lavasani, Department of Educational Psychology and Counselling , University of Tehran , Tehran, Iran.
- Lee, J.K. (2008). The effects of self- regulated learning strategies and system satisfaction regarding learner's performance in E-learning environment. *Journal of Instructional Pedagogies*, 30-45.
- Mohd Sham Bin Kamis. 2017. The Impact of Metacognitive Strategy (MCS) in Reading Arabic Text Among SMK Agama Students in Seremban 3L: The Southeast Asian Journal of English Language Studies - Vol 23(4): 222 - 234 <http://doi.org/10.17576/3L-2017-2304-17>.
- Napapat Thongwichit and Adcharawan Buripakdib. 2021 "A Glimpse of Metacognitive Reading Strategy Instruction Through Modeling Technique in ESP Class at the Tertiary Level". International College Surat Thani Campus, Prince of Songkla University, Thailand b adcharawan@sut.ac.th, School of Foreign Languages, Suranaree University of Technology, Thailand * Corresponding author, napapat.t@psu.ac.th.
- Peng C. (2012). Self-regulation learning behavior of college students of science and their academic achievement. *Elsevier, Physics Procedia*, 33, 1446-1450.

- Rasooli khorshidi, F., Kadivar, P., Sarami, Gh.R. & Tanha, Z. (2014). The Study of Relationship between Metacognition, Achievement Goals, Study Strategies and Academic Achievement. *Journal of Educational Psychology Studies*, 10(18), 83-102.
- Salehi, Sh., Yargholi, R. & Motaghi, M. (2013). Relationship between cognitive and metacognitive learning strategies and academic success in medical-surgical nursing courses. *Iranian Journal of Medical Education*, 13(8), 616-628.
- Toit,Stephan.du., Kotze. Gary. (2009). Metacognitive strategies in the teaching and learning of mathematics. *Pythagoras Journal*, 70, 57-67.
- Zhang.Lian. & Seepho, S. (2013). Metacognitive strategy use and academic reading achievement: Insights from a Chinese context. *Electronic Journal of Foreign Language Teaching*, 10(1), 45-69.
- Woolfolk Anita., 2008, *Educational Psychology, Active Learning Edition*, Pearson Education Inc., Boston.

Lecturers' Perception on the Effectiveness of Continuous Summative Assessment on Evaluating Grammar Skills among Undergraduates

Thilip Kumar Moorthy¹ Yogerisham Panir Silvam²

TUNKU ABDUL RAHMAN UNIVERSITY COLLEGE (TAR UC)

Corresponding Author's Email: thilipkumar@tarc.edu.my

ABSTRACT

Grammar can be classified as the most prominent element in the context of English Language. However, grammar has always been a problem among undergraduates. Although they are given a sufficient amount of input during schooling days, they still face problems in using them. This is wholly because grammar instructions are not done in a continuous manner during their tertiary education. Many lecturers find it difficult in making sure undergraduates are able to utilize grammar in a proper manner regardless of assignments or presentations as English based subjects in tertiary education are only offered till the end of their first year. It is proposed that summative assessment should be conducted throughout the duration of study in their tertiary institution. This paper highlights the findings from an interview among 5 English lecturers who are currently serving in various private tertiary institutions. All respondents have 5 to 10 years of teaching experience in this field. The categories for the interview questions were built based on lecturers' understanding on summative assessment and the needs in understanding grammar in using English. The findings indicate that lecturers are keen in having continuous summative assessments in evaluating grammar skills among undergraduates throughout their tertiary education.

Sub themes: Grammar Instructions

Keywords: Grammar, Lecturers, Perceptions, Summative Assessment, Undergraduate,

1. INTRODUCTION

Assessment can be classified as the most important procedure in determining students' performance throughout their learning process. According to Black and Wiliam (2008) assessment includes all the activities that the educator and students undertake to get information that can be used as an asset in further altering their teaching and learning so that students are able to cope with planned lessons. Besides that, assessment encompasses teacher observation, classroom activities and discussion, analysis on students which includes their assignment and many more. In general, the purpose of summative assessment is to determine the student's overall achievement in a specific area of learning at a particular time—a purpose that distinguishes it from all other forms of assessment (Harlen, 2004). Test items that closely align with course objectives and actual classroom instruction increase both content validity and increase reliability so assessors can make good decisions about the kind of consistency that is critical for the specific assessment purpose (Parkes & Giron, 2016). Therefore, it is defined that summative assessment will be a good assessment to be produced when the item is well constructed accordingly as it is to determine students' overall results.

Therefore, continuous summative assessment should be conducted in evaluating the grammar skills of undergraduate's students as teachers can be the best source of student achievement information. According to Michael Swan, a popular freelance writer, grammar is not just sentence building, it is the "device" which designs the entire English Language. Without grammar, a person is not able to understand the fundamental concepts of the language. Thus, continuous summative assessment can be used in making sure they are able to have the knowledge till they finish their tertiary education and will also create a long-term memory of these skills in them.

In Malaysia, students are only exposed to grammar during their primary and secondary school. If we look at the school syllabus, students in school are only exposed to grammar once a week or sometimes once a month just to fulfill the basic requirements of the curriculum. This becomes worse when grammar is not given any importance in their tertiary education. According to Din (2017) more than forty thousand Malaysian graduates could not get jobs in the working sector because they were not proficient in English. This contributes to the drop of the country's economic growth due to the high number of jobless individuals.

Lecturers in tertiary institutions are having difficulty with undergraduates as they are not able to understand the basic concepts in grammar which they are supposed to have common knowledge during their schooling days. The cognitive capabilities in certain students in terms of acquiring the language has not changed even as they have moved forward in their tertiary education years. This eventually makes the students lose interest in learning English and become unable to participate in their lectures and tutorial activities.

The current situation in the tertiary environment is students come to class without the correct use of grammar. Most tertiary and private institutions only practice two or three subjects that focus on grammar. For instance, at a tertiary institution in Selangor, students would be attending preparatory classes for English which serves the purpose of reviewing basic grammar components. This is not a continual process because it eventually stops in the midst of their undergraduate program as there are no continuous measurements over the skills. Thus, this leaves a negative impact because students take it for granted and only learn it for the purpose of passing.

Summative continuous assessment should therefore be conducted during their learning period in their respective tertiary institutions. This is because summative assessment focuses on how one is able to achieve goals rather than determining what the goals are. Moreover, the lecturer's belief and attitude towards the assessment will definitely show an impact towards the undergraduate student's progression in their grammar. With the efficient execution of this assessment towards grammar, the lecturer will be able to provide sustainable feedback to students about their progress that points out their strengths and weaknesses which needs their attention so that they are able to progress further. This will surely help them keep on track of their grammar and improve their grammar proficiency. Studies have shown that the beliefs held by teachers or lecturers can influence their teaching of grammar according to various factors such as the years of teaching experience (Arshad and Nurusus, 2015; Nurusus *et al.*, 2015). However, it is still unclear whether the beliefs regarding the use of continuous summative assessment in teaching and learning grammar are influenced by factors such as teaching experience.

Thus, this present study seeks to identify the perception of lecturers on the effectiveness of continuous summative assessment in evaluating grammar skills among undergraduates. It is hoped that when the perception is identified, the assessment is able to be conducted for all the undergraduates so that they are well prepared when they are to face the real world individually.

The aim of this study is therefore to identify the perception of lecturers on the effectiveness of continuous summative assessment in evaluating grammar skills among undergraduates which is

the most prominent way in ensuring students are given the necessary input on grammar so that they will excel in that particular language.

The study aims to address the following questions:

1. What is the difference in perception between lecturers on the importance of understanding grammar throughout the learning process especially during tertiary education?
2. What is the difference in perception between lecturers on the implementation of continuous summative assessment in improving grammar among undergraduates?

1.1 Studies on Continuous Summative Assessment and Grammar Skills among Undergraduates

In view of the relationship between continuous summative assessment and grammar skills, it is indeed important to have the continuous summative assessment as an ongoing final assessment in terms of evaluating and providing input on grammar skills among undergraduates. Grammar teaches us how to build sentences, about the types of words that we use and when we should use them.

Besides that, it is also shown that having frequent summative continuous assessment in a particular classroom will help to accelerate the student learning process (Good *et al.*, 1983; Slavin and Steven, 1995). It is important for students to learn grammar properly and it is believed that the implementation of continuous summative assessment on learning grammar will aid students in understanding the skills better.

In another research on timing of continuous summative assessment, feedback has shown that students will be able to learn a particular skill if there is immediate error correction and if that particular assessment is on task acquisition (Kulik and Kulik, 1988; Clariana *et al.*, 2000). The implementation of continuous summative assessment will surely provide students with sufficient knowledge because they are given an opportunity to use the language that they are currently learning. Besides that, students benefit from receiving better descriptions and examples that help them understand the assessment criteria that are assigned to them. On the the hand, it is seen that older students especially tertiary level students respond positively to teachers' continuous summative assessment. They find the work motivating and are able to learn throughout the assessment process. Summative assessments can be stated for internal purposes like regular grading for record keeping, informing decisions about choices within the university, and nonjudgmental feedback motivates students for further effort. Employing these strategies promotes changes in teaching that extend the range of students' learning experiences. These assessment practices are more likely to have a positive impact on the assessment itself when teachers recognize ways that the strategies help them learn more about their students and develop more sophisticated understandings of curricular goals. Thus, the lecturers will be able to help them continuously as it is very important for them to be proficient when they go out and face the working world.

In the same vein, grammar involves the properties and processes that trigger the use of language. The association of this is that students need to be aware of the rules and the knowledge they have stored within their brain. This will help them to analyse the language and be able to use it with proficiency.

Nevertheless, in terms of viewing grammar as a process that triggers the use of language, it also clearly suggests that grammar is not a question of competence but is a question of performance. This statement reflects the statement stated by Drach (2011) in which he stated that learners can

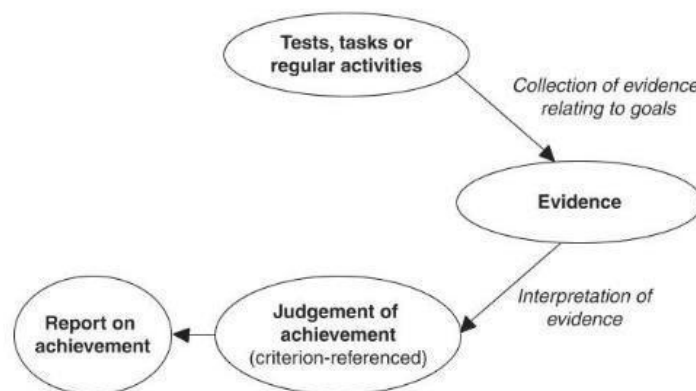
use the language creatively if they perform well in grammar. That merely refers to the ability of a person to effectively use his internalized knowledge to achieve the desired communicative impact which can be achieved through formative assessment.

Looking at all the studies and statements depicted above, it is essential to identify the perception of lecturers on the importance of integrating grammar and continuous summative assessment which will improve their proficiency in English language.

2. LITERATURE REVIEW

The use of assessment in educational settings dates back to the earliest school systems and it has a purpose to measure student achievement. (Gadsby 2012) argues that assessment is a very important tool to make sure that pupils have an effective learning experience. In addition to that, tweaking assessment to make it for learning (Assessment for Learning) “allows pupils to take ownership of their own progress and it creates independent learners” (Gadsby, 2012,p.12). Tamir suggested “to integrate assessment with the curriculum and to assess in more authentic contexts” (Pinchas Tamir, 1998). Gardner has defined assessment for learning as “the process of seeking and interpreting evidence for use by learners and their teachers, to identify where the learners are in their learning, where they need to go and how best to get there and therefore improve from their lack” (Gardner, 2012, p.3). In traditional settings, assessment is mostly used in its summative form as being something external and planned at the end of a learning experience. A big aspect which is related to assessment is feedback as a personalized; feedback is a boosting process that leads the pupil further down the learning path. According to principles of effective assessment mentioned by Harlen, effective strategies is needed to promote motivation and personal growth in the learning process and timely, constructive feedback is key to that (Harlen, 2006). Therefore, summative assessment is the key to providing good feedback to students.

Summative Assessment has as a purpose summarizing learning, but it also eventually helps in achieving good learning strategies and outcomes, therefore the distinction between formative and summative assessment could be fuzzy at times (Gardner, 2012, p.87). Nevertheless, Summative assessment focuses on reporting achievements and should be based on criteria in order to show the extent of realization of each learning outcome (Gardner, 2012, p.89). Summative assessments need to have “a certain level of dependability” and it could be monitored through quality assurance procedures for a sense of fairness and neutral representation of each pupil (Gardner, 2012, p.97).



According to Figure 1, summative assessments are evidence that need to be interpreted in order to finally judge student achievement. The assessment is the key to gauge students' understanding of a particular component. The evidence that is collected from the assessment will be judged and the next steps will be decided prior after the grading is done. Although there are plenty of questions in terms of reliability and validity of a particular assessment, it is stated that only by assessment, students' understanding will be able to evaluate.

Teaching English grammar effectively can enable the linguistic development and advancement of language learners by organizing their language skills sustainably and structurally (Larsen-Freeman, 2001). When the adequate focus is placed on form and meaning, learners will become capable of acquiring language skills efficiently to accomplish their targeted learning outcomes. Pagcaliwagan (2016) claimed that when English learners are given **constant exposure** to grammar, their ability to use those increases. Studies have shown that grammar skills are crucial for L2 language learners looking to augment their learning abilities. Nonetheless, experts researching L2 acquisition skills have been debating which grammar assessment to use for the last 40 years. While some believe that the best way to teach grammar is by teaching it. Instruction Over the last few decades, grammar instruction theories have gone through numerous revisions due to the on-going and long-standing discourse regarding the role of grammar in an L2 classroom. This has given birth to contradicting principles, methods, and ideologies. With all this contradiction happening around, it is indeed important that grammar needs to begin with assessments as that will be the easiest way to identify issues that the students are having. Teaching only will not be able to evaluate, and it is only with assessment, we are able to distinguish the outcome.

3. MATERIAL AND METHODS

In this study, a qualitative method has been used. Interview is used as the data collection tool (see Appendix A). There will be 10 questions that will be used to interview 5 lecturers who work in various private institutions with various levels of experiences to further variant the findings; There are 10 questions related to the major constructs of this research which are continuous summative assessment and grammar at tertiary level education. The perception is investigated thoroughly from the lecturers as they are exposed to various levels of students in their respective institutions. Each participant was interviewed over the telephone. They are also given the informed consent form (Appendix B) to further inform that their information will be kept confidential throughout the interview and the research studies. The interviews with the participants were conducted with the Google Meet videoconferencing. This interview could be recorded and transcribed with the Google Meet verbatim platform. Interview times varied and were scheduled at times conducive for both participants and the researcher. The researcher also took field notes during each interview.

The study examines how continuous summative assessment can provide immediate feedback for the teacher in evaluating a student's level of understanding. Therefore, the respondents are chosen according to their understanding towards continuous summative assessment and grammar. The data collected from participants will be divided into 2 parts. The first part will be illustrated to show the differences of likeliness or unlikeliness of the importance of teaching grammar approaches among them. On the other hand, a comparison between the lecturers on the implementation of continuous summative assessment has also been investigated.

4. RESULTS AND DISCUSSION

Lecturers are asked 10 questions from the interview question (Appendix A) prepared.

The first question is: **What do you think about the students' grammar competence among students in your institution?**

In this question, lecturers are expected to answer in regard to the grammar competence among their students in their respective institution. Majority of them answered that their competence is in the range of poor to average. The hesitation in Respondent 2 and 3 can be seen as a matter that needs immediate action to make sure students are able to absorb it as soon as possible.

Respondent 1 stated that: *"If you ask me based on my teaching for the past 5 years, I think it would be above average."*

Respondent 2 stated that: *"I think very few of them are very competent in grammar. The majority of the students do not have high competency in grammar."*

Respondent 3 stated that: *"Hmmm....Well, the student's here mostly comprise certificate students and most of them are SPM leavers. Their English is definitely poor. It baffles me because they have been learning English all their schooling life yet their grammar is poor. Things as simple as Articles, past and present, they get it all wrong."*

Respondent 4 stated that: *"Based on my 6 years of teaching experience, I've observed its average."*

Respondent 5 stated that: *"I think it varies, depending on what programme the student is enrolled in and also on whether the student is a local or international student. Students who are in the TESL programme for instance may have a stronger level of grammar competence, and this is also the case with local students who have a higher level of grammar competence compared to international students."*

The second question is **Do you think students depend on and converse in their first language extensively most of the time which leads them to making many grammatical mistakes in English?**

In this question, the lecturers are expected to answer in terms of their observation in their course works and other related in class assignments that they have administered to their students.

Majority of them mentioned that their first language has influenced their mistakes in their work and conversation. In this question, many of them also had shown their concern over their first language influence.

Respondent 1 stated that: *"Yes...if you ask me, it is yes for it because if you ask me most of the students tend to do direct translation when they want to do their writing and also for speaking. So maybe this is what they have exposed themselves in the schools where they do direct translation. Maybe because this is a second language."*

Respondent 2 stated that *"Oh yes...Many of them do not speak English outside the classroom. They think in their native language and will have to translate to English when speaking and writing. Hence, they are bound to make mistakes influenced by their first language."*

Respondent 3 stated that *"It is definitely one of the contributing factors but not the only one for sure. Aaamm, it's probably the general lack of interest and the lack of awareness on the importance of the language. The student's attitude: the 'couldn't care less' attitude is what probably led them to the pitiful state of their grammar usage."*

Respondent 4 stated that *"Yes, they rely on their native language for translation."*

Respondent 5 stated that: *"Not in the courses I teach – students only speak in English because they are going to be future English language teachers."*

The third question is: What is **your opinion over this statement? "Grammar incompetence causes students to have weaker grasp in English Language"**

In these questions, lecturers are expected to state whether grammar incompetence is an issue for students and majority of them are in favour except Respondent 3 who stated vocabulary is the issue.

Respondent 1 stated that: *"Okay, if you ask me for this particular statement, based on my experiences I would say students are always unmotivated to speak in English because they are afraid that they might have grammatical errors in the sentences in both skills...either writing or speaking."*

Respondent 2 stated that: *"I would say grammar competency is essential in mastering English language proficiency. So, grammar incompetence may lead to students having weaker grasp in the English language."*

Respondent 3 stated that: *"Ahhh, I am on the fence about this one. I believe grammar is important, but what's more important is the language itself. The vocabulary, the aesthetics of the language and the appreciation for the language. In other words, they should grasp English first and then grammar will fall in place or rather it will be easier to place grammar within the context. You can't learn language mechanics first before learning the language itself just like you can't be good at driving by learning about the car parts and engine systems. You need to learn how to drive first, then you can slowly identify and know about parts of your car. Haha, I hope I'm making sense."*

Respondent 4 stated that: *"Students are demotivated due to the anxiety in making errors."*

Respondent 5 stated that: *"Not necessarily. Depending on what aspects of the English language is being looked at. For instance, a student could have weak grammar competence, but they could have knowledge related to theories of English language teaching, etc."*

The fourth question is: Do you **think students fail to express ideas in class due to their incompetence in grammar which eventually influences their pronunciation?**

Lecturers are requested to look at the comparison between pronunciation and grammar and overall, all of them do agree to the fact that pronunciation is affected by grammar except there is an additional idea from Respondent 3 stating that it is also because of vocabulary.

Respondent 1 stated that: *"Yes, it will be influencing their pronunciation because they might be nervous in delivering their ideas because they tend to think about the grammatical errors that they might make."*

Respondent 2 stated that: *"I think students fail to express ideas in class mostly due to their lack of vocabulary. Good grammar will allow them to express their ideas effectively. So, students will need both vocabulary and grammar to be able to express ideas successfully."*

Respondent 3 stated that: *"Again, I have a different take on this. Student's fail to express ideas because they lack vocabulary and not grammar. I believe if they had the right words for it, they could muster up a sentence to express themselves. At that point they aren't looking to be grammatically right. They are most afraid of saying the wrong thing. And ermmm no I don't think grammar influences pronunciation. No."*

Respondent 4 stated that: *"No, as some of them can provide one-word ideas and it doesn't affect their speech."*

Respondent 5 stated that: *"Not necessarily. Perhaps some students who are bolder and have less language anxiety might still be open to expressing ideas in class in spite of their grammar incompetence."*

The fifth question is on **Do you think grammar components are not tested sufficiently in their tertiary education?**

Lecturers are to state the frequency of having assessment for grammar. Many of them tend to have it in minimal numbers and this eventually draws to the gap of not having grammar tested sufficiently in tertiary education.

Respondent 1 stated that: *“For this question based on my opinion, it is yes for languages-based subjects where we used look into grammar components, but I don’t think so other core subjects of other fields are looking into this component much.*

Respondent 2 stated that: *“Unless the students are taking an English major, grammar components are not directly tested.*

Respondent 3 stated that: *“Now this I agree. Grammar is hardly tested at tertiary level but only because we expect them to come in with enough proficiency and knowledge on this because they have been learning this language at school for what....almost 11 years. I also believe that tertiary level is not the best place to test grammar components. If we speak about having a class just to brush their rough edges up, then perhaps. Testing them hmmm....i don’t know if we should.*

Respondent 4 stated that: *“It is tested only during the English lessons.”*

Respondent 5 stated that: *“In the courses I teach, grammar components are not really the focus and play a more minor role.”*

The sixth question is on **Are you aware of the types of assessments? Mainly summative and formative assessment?**

This question focuses on whether lecturers know about both the assessment and they are aware of the types of assessments.

Respondent 1 stated that *“Yes. Formative...usually we monitor the students’ learning by providing ongoing assessment and feedback that can be used by instructors to improve their teaching and by students to improve their learning. Summative is basically to evaluate students’ learning at the end of an instructional unit by comparing it against some standard or benchmark.*

Respondent 2 stated that *“Yes, I am aware of both the types that you have mentioned.*

Respondent 3 stated that: *“Yes, I am aware of these assessments. Teachers and lecturers have been working on these types of assessments for the longest time.*

Respondent 4 stated that: *Yes. Formative is ongoing feedback likewise tutorials provided to the students whereas summative assesses the entire unit.*

Respondent 5 stated that: *“Yes, I am.”*

The seventh question is on **Do you think conducting continuous summative assessment helps students to solve their problems in relation to grammar?**

This question focuses on whether continuous summative assessment is feasible to improve students' grammar proficiency and they believe that it can help students if let's say it is done effectively.

Respondent 1 stated that: *“Yes, if you ask me, it might help students to improve their language and their confidence in both skills which are speaking and writing.”*

Respondent 2 stated that: *“I believe conducting assessments alone will not help the students in solving their problems in English grammar. They will have to do a lot of work on their own and always be mindful of the grammar aspects they have learnt previously when they are constructing sentences in their speech and writing.”*

Respondent 3 stated that: *“I don’t know realistically how this may be feasible, but if it can be done then I would really recommend it. The feedback from the assessment will help the student identify and rectify their issues with grammar.”*

Respondent 4 stated that: *“Yes, students will be aware of the errors and work on it accordingly. It's helpful for the long term.”*

Respondent 5 stated that: *“It depends on whether the focus of the assessment is on grammar. Also depends on whether the feedback given on these assessments touch on aspects related to grammar.”*

The eighth question is on **Continuous assessments help teachers to track students’ grammatical problems and will be able to provide feedback accordingly. Provide your opinion.**

This question actually requests lecturers to answer whether continuous assessment is a good way to monitor students' achievement. Everyone agrees to it.

Respondent 1 stated that: *"For this question I would yes, so that the lecturers can prepare proper assessment to help the students.*

Respondent 2 stated that: *"Yes, it will give the teachers a chance to gauge the students' competency in grammatical aspects and provide appropriate feedback to the students.*

Respondent 3 stated that: *"Definitely. All assessments that are continuous, formative or summative gives students and teachers enough insights into a situation. It's like diagnostics. Only with assessments will you know what are the areas that the students are struggling with. You could almost get a pattern. Students always leave a trail. Haha, and when teachers find this out, they will nab that grammar issue and deficiency by its neck. Students will also be able to see for themselves where they are weak at and perhaps do some self-study or exercises to address the issue. Teachers could also provide suggestions and extra exercise for the student"*

Respondent 4 stated that: *"Yes, for the preparation of better assessments which further helps learners in reducing and recognising errors made.*

Respondent 5 stated that: *"Somewhat similar answer to the previous question. Depends on what is the focus of the assignment. For instance, in some subjects I teach relating to the teaching of literature, grammar is not the focus."*

The ninth question is on **Do you always provide an assessment which gives importance to grammar?**

This question requires the lecturer to provide whether they have done assessment in terms of grammar thoroughly. Most of them stated they have but very minimal.

Respondent 1 stated that: *"Based on my experience I would say yes because I am teaching language papers. So, the first component that we will be looking into would be grammar because it is a language-based subject. So, all the assessments and my preparation for the class tasks, I will be giving importance for the grammar component.*

Respondent 2 stated that: *"I would say all the assessments in University Malaya that I have conducted give importance to the content and grammar rather equally. As far as I can remember, there was none that gave an utmost importance to grammar."*

Respondent 3 stated that: *"Only if the subject requires it. Like if I am teaching English then yes. I do give importance and will give importance to grammar. There will be time and assessment dedicated to brushing the student's grammar. However, if I am teaching a subject that doesn't require teaching grammar, I still give feedback through their assignments and their essays. I still correct the grammatical errors they make.*

Respondent 4 stated that: *"Yes, it's integrated with every skill."*

Respondent 5 stated that: *"No."*

The tenth and final question is on **Do you think feedback that is given from the continuous summative assessment proves to be a good solution for students?**

The final question focuses on whether assessment and corrective feedback plays a very important role in gauging students' performance. All agreed that it is important and continuous summative assessment will allow such feedback for students.

Respondent 1 stated that: *"Yes so that they can improve fast because when you give feedback frequently to the students, they can learn from their mistakes very fast so that we can find a good solution for them to help them to improve their language at an early stage.*

Respondent 2 stated that: *"It may help them with their grammar comprehension, but it is not a solution. It is because feedback alone will not be effective.*

Respondent 3 stated that: *"It is definitely one way. Errr, may not be the solution in entirety but it's a good start. Only when the teacher takes it seriously and does it continuously and hmmm tirelessly; the*

student's will pay attention and focus. Only then they will take it seriously. There are other ways to encourage and solve this issue, but it requires effort and motivation from the students mainly. They need to work hard. They must like and want to have or possess flawless English grammar.

Respondent 4 stated that: *"Yes, students learn from the mistakes made."*

Respondent 5 stated that: *"Yes, feedback can play an important role in students' learning."*

5. CONCLUSION

Summative assessment is an efficient technique that can be used in assessing students to improve their understanding on the matters that they are learning. If assessing grammar becomes an ongoing evaluation throughout their tertiary years, educators will be able to achieve the learning outcome goal. This will definitely help the students to know and recognize the standards and be able to correct them before they finish their education years in university. Therefore, all educators should take account of the importance of using summative assessment in assessing grammar proficiency among students.

ACKNOWLEDGEMENTS

We would like to thank all the lecturers that are involved in this research. Without them, the research will not be able to be completed. Besides that, a very big thank you to all the researchers that we met as they have provided us with resourceful information that is important for our research.

CITATION AND REFERENCES

- Anas, L. 2019. Study on the Effectiveness of Formative and Summative Assessment Techniques in Education. University of Sunderland
- Arshad, A.S. and E. Nurusus, 2015. The influence of teaching experience, school location and academic background on teachers' beliefs in teaching grammar. *Asian Social Science*, 11(15): 257-266.
- Clariana, R.B., D. Wagner and M.L.C. Roher, 2000. Applying a connectionist description of feedback timing. *Educational Technology Research and Development*, 48(3): 5-21.
- Corder, S.P., 1975. Error analysis, interlanguage and second language acquisition. *Language Teaching*, 8(4): 201-218.
- Din, M., 2007. English proficiency in Malaysia: Time for urgent action. Available from <https://dinmerican.wordpress.com/2014/01/07/english-proficiency-in-malaysia-time-for-urgent-action/>.
- Drach, M., 1981. The creative aspect of Chomsky's use of the notion of creativity. *Philosophical Review*, 90(1): 44-65.
- Good, T.L., S.A. Grouws and H. Ebmeier, 1983. *Active mathematics teaching*. New York: Longman.
- Kulik, J.A. and C.C. Kulik, 1988. Timing of feedback and verbal learning. *Review of Educational Research*, 58(1): 79-97.
- Mohammed, H. K., 2021 The Place of Grammar Instruction in the 21st century: Exploring Global Perspectives of English Teachers towards the role of teaching Grammar in ESL/EFL Classrooms. *World Journal of English Language*, Vol. 11, No. 1; 2021
- Nurul A and Hanifah, D.A., 2021 Developing e-learning media in grammar instruction for beginner learners. *Universitas KH.A Wahab Hasbullah* doi: 10.21070/jees.v6i1.363
- Nurusus, E., A.S. Arshad and Z.S.A.R. Sharifah, 2015. Exploring teachers beliefs in teaching grammar. *English Teacher*, 44(1): 23-32.
- Slavin, R.E. and R.J. Steven, 1995. The cooperation elementary school: Effects on students' achievement, attitudes and social relations. *American Educational Research Journal*, 32(2): 321-351.

MULTILINGUAL'S INCIDENTAL ACQUISITION OF NOVEL WORDS WITH LEXICAL CUES IN L1 AND L2

Irwan THAM^{1*}

¹ Faculty of Social Science and Humanities, Tunku Abdul Rahman University College, Kuala Lumpur, Malaysia
*irwantham@yahoo.com

ABSTRACT

The purpose of this study was to examine how multilinguals incidentally acquire novel words with lexical cues given in their first language (L1) and second language (L2). This study was conducted by obtaining quantitative data from a post-test. The population of this study were 252 Chinese multilingual Malaysian university students whose L1 is Mandarin. The L2 of participants are English in which they have undergone formal English education since primary school. The findings from the post-test results indicates that participants acquire novel words in L2 better when accompanied with lexical cues in their L1 as compared to cues in their L2. The L2 proficiency of participants did not show any significant effect when it comes to incidental acquisition in both L1 and L2 conditions. The use of L1 cues leads to higher incidental vocabulary acquisition despite the differences in L2 proficiency of participants compared to L2 cues. This study makes two contributions to research in language acquisition: Methodologically, this research aims to look into alternative vocabulary acquisition strategies namely the use of L1. Empirically, this study sheds light on how multilinguals incidentally acquire vocabulary when given cues in L1 and L2 with implications for future research and classroom practice.

Keywords: L1 & L2; Lexical cues; multilingual; novel words; translanguaging

1. INTRODUCTION

Before we begin to talk about second language acquisition (SLA), we must first know how the multilingual mind works. The multilingual, unlike the monolingual, is in possession of multiple languages, mainly their mother tongue (L1) and the second language (L2). Research on the multilingual has gained significant traction over the years (Lin & Lei, 2020).

Although the role of L1 in a multilingual language has always been debated, language teaching still relies heavily on conventions created in the nineteenth century (Cook, 2019). However, these outdated conventions are not supported by the recent view of second language education (Cook, 2019) and have negative repercussions to SLA. The lack of data itself to maintain or disallow the L1 in an L2 class, causes educators to face difficulty in making informed choices when it comes to appropriate language use in classrooms. As such, this issue is a constant source of problematic debate among linguists as well as educators (Almoayidi, 2018).

This research aims to offer new understandings that can be of use to students, educators and policy makers. This research seeks to provide evidence on L1 and its contribution to improved comprehension and retention of words when compared to L2. This research looks to shed light into the ongoing debates surrounding L1 and its position in ESL classrooms. This research aims to look into alternative vocabulary acquisition strategies namely the use of L1. This research will also look to tackle the matter that there are not enough studies when it comes to how multilinguals process texts as specified by Ellis (2008). This study aims to suggest an alternative method in language education from the current language education policy in Malaysia which adopts the monolingual education method which treats the L1 and L2 as two separate languages in the language user.

2. LITERATURE REVIEW

2.1 ESL Classrooms in Malaysia

Multilingualism has been a big focus in Malaysian education as the ministry of education is pushing for the fluency of both the Malay language (Malaysians' national language) and English (Malaysians' second language).

Although that is the case, Malaysia has always emphasized that only English should be used in English classrooms. This approach entails that only L2 is used in interacting with students while any communication in L1 is discouraged (Cummins, 2005).

This policy adopted in our education ensures that the use of students' L2 is maximised while the L1 is highly discouraged. This policy can be viewed clearly when the then Deputy Education Minister, YB Chong Sin Woon, states that language educators have to abstain from utilizing students' L1 in the English classroom (Jalil, 2015). In the most recent Malaysia Education Blueprint 2013 – 2025, it is stated that Malaysia will employ “full immersion” in Bahasa Malaysia classes. The blueprint also stated that structural changes will be done to English classes to create a “more immersive English language environment”. Immersion here carries the meaning that the target language will be used fully and other languages in the classroom must be avoided. This statement goes on to show that Malaysian language education adopts the policy of the separation of language.

Understanding a context in which to provide English education is important. We need to have a sense of how English is viewed among the locals (Hazita Azman, 2009).

2.2 Use of L1 and L2 in the Classroom

Different views on the use of L1 in an L2 classroom comes from multiple clashing views in SLA. One prominent view against L1 use is to provide students with the maximum amount of L2 input. This is based on the view that students lack the chance to use their L2 outside of the classroom environment. (See, e.g. Cook, 2001; Ellis, 2008). Another view is that the overuse of L1 might cause students to lose enthusiasm to use their L2 (Nation, 2003). Some other assumptions can be summarised as below:

- 1.** L2 learning must follow the learning model of L1 in which L2 is maximised
- 2.** Separation of L1 and L2 is necessary for successful learning to occur.
- 3.** The continuous use of L2, will highlight its importance to learners.

There is however a growing number of researchers who are in support of the use of L1 in SLA classes. Support of this comes from the multilingual perspective (e.g. García 2014). Studies have argued on the major part that L1 plays in forming student's identity and that the separation of L1 from L2 will not make the L1 disappear but only causes it to be invisible to educators (e.g. Anton & DiCamilla, 1998; Auerbach, 1993; Cook, 2001, 2013; Creese & Blackledge, 2015). Students happen to use the L1 as a means of learning in SLA classes. The thoughts of students are connected to their vocabulary production. Failing to understand this would cause the learning of a language to be stunted (Anton & DiCamilla, 1998). The use of L1 and L2 in the classroom serves to reflect the entire communicative repertoire of language users when making meaning (Chau, 2015; García, 2014).

It is important to have a set of guidelines which are informed by research which might be useful for educators (Macaro, 2001). Ellis (2008) states that one important area that needs research is how the use or non-use of L1 affects L2 acquisition.

2.3 A New Perspective of the Multilingual

Many language educators do not have a full grasp of the ideological or empirical consequences of the monolingual norms and assumptions they apply in their work (Leung & Valdés, 2019). While the debate on the use of L1 in classrooms continues, a rising number of scholars calls for a moderate attitude when considering using L1. A more encompassing view of the multilingual is needed. One that empowers multilinguals and gives the agency of language learning back to them (cf. Cook, 2013; García, 2014; Man & Chau, 2019; Ortega, 2018; Tham, Chau and Thang, 2020). The multilingual language cannot be properly understood using conventional methods of language education and there is a need to find a different view which can create a healthier educational climate (Otheguy, García and Reid, 2019). One such emerging view of the multilingual is through the framework of translanguaging.

2.4 Translanguaging

Translanguaging refers to the flexible use of the bilingual repertoire (Lopez, Turkan & Guzman (2017). It is a theoretical lens that provides a new approach to multilingual education (Vogel & García, 2017). Vogel and García (2017) writes that while the traditional education method looks at multilinguals as having multiple autonomous systems of language, translanguaging looks at multilinguals as possessing a unitary linguistic repertoire which is applied to meaning making and to navigate communicative contexts. Translanguaging is also an approach to language pedagogy that confirms and utilises learners' dynamic language practices. It is used by multilinguals to make sense and meaning of the multilingual world (García, 2011) and to smoothly transition between their languages in their pursuit of knowledge (Joseph & Ramani, 2012) Translanguaging also serves to re-examine the unanswered question on the role of L1 in language education (Wei, 2018). Only by purposefully removing the artificial idea that divides the concept of L1 and L2, translanguaging empowers the learner and educator and returns the process of language education on meaning making (Creese & Blackledge, 2015).

2.5 Incidental Vocabulary acquisition

The meaning of incidental vocabulary acquisition used in this study is similar to the definition used by Hulstijn (2001) which is defined as the process in which learners obtain knowledge of a word from reading without expecting to be tested.

As the time spent learning vocabulary in the traditional classroom is not sufficient (Schmitt, 2008), there is a need for more chances for learners to acquire language. The importance of incidental

vocabulary acquisition must not be overlooked as most vocabulary acquisition comes from incidental reading (Nagy & Anderson, 1984).

2.6 Vocabulary of L2 Users

One major part of language acquisition is vocabulary acquisition (Nation, 2013; Schmitt, 2010). However, studies that investigate the connection between the role of L1 and L2 in vocabulary acquisition are lacking. One study by Na and Nation (1985) looked at vocabulary guessing in context and components that affect it. The research instructed participants to predict the meaning of novel words based on context. Participants were more successful in guessing words when given in higher numbers in the text. Na and Nation's (1985) study indicates that learners learning an L2 do not learn it in a similar manner as compared to their L1. Instead, learners use their existing L1 as a mediator. Ames (1996) studied the success rate in which participants manage to guess words from context. Ames used glosses where they were explained using their L1 and L2. His research indicated that participants remembered L2 words better when provided alongside their L1 equivalent.

Ammar and Lightbown's (2005) study indicated that providing both L1 and L2 aids learners in acquiring L2. This study is also supported by Lotto and de Groot (1998) where participants were given a post-test which asked them to recall words. This study found that using L1 and L2 pair words with participants encouraged higher acquisition of L2 vocabulary. Shieh and Freiermuth (2010) investigated the use of dictionary on student's reading comprehension. That study found that providing students with aid to reading in the form of bilingual L1-L2 and monolingual L2 dictionary performed significantly better than those with no access to a dictionary.

When it comes to more proficient L2 learners, it has been shown that they tend to link new vocabulary with their L1 correspondence (Van Hell & Mahn, 1997). Jiang (2004) suggested that L2 learners use their pre-existing native language to create associations with new vocabulary items.

This study aims to contribute to the literature by studying multilinguals' incidental acquisition of novel words when provided cues in their L1 and L2.

This study is based on the following research questions:

1. To what degree does supplying L1 and L2 cues aid in incidental vocabulary acquisition?
2. To what degree does students' English level proficiency affect their incidental vocabulary acquisition when provided cues in either L1 or L2?
3. How does the type of cues affect students with different proficiency in terms of vocabulary acquisition?

3. MATERIAL AND METHODS

3.1 Participants

The participant of this study consists of 252 undergraduate students from a private university in Malaysia. They were second- and third-year students majoring in various fields. The average age of participants was 21 years. Participants consisted of 94 females and 158 males. Participants were Chinese students with their L1 being Mandarin and L2 English. Participants all have at least six years of formal Mandarin education. They all scored within the range of A+ and E for their English paper in their Sijil Pelajaran Malaysia (SPM). Sampling method used in this study was simple random sampling. This method is chosen as it reduces selection bias (Creswell & Creswell, 2018).

3.2 Instruments

The instrument used for data collection in this study was reading materials and post-test questions. Post-test questions were used to obtain quantitative data.

3.3 Reading Materials

The reading materials were adapted from Tham et al. (2020). Six paragraphs in English were chosen from that study. The reason six paragraphs were chosen and not more was because a study which employs incidental acquisition with lengthy texts is not ecological valid (Elgort & Warren, 2014) To ensure participants understood all items in the paragraphs, the text underwent some processes before they were given to participants. First, VOCABPROFILE (Heatley, Nation, & Coxhead, 1994) was used to analyse the paragraphs. Words that were classified in the 2,000 most frequent words were kept while those not within this range were considered for substitution. Flesch Reading Ease test was also used where all paragraphs were given a score of 60 to 19.4 which indicated a reading level suitable for a high school graduate (CheckText.org., 2015).

A pilot study was also conducted by recruiting five participants to read each paragraph. Participants were asked to indicate words which they do not understand. Words which were indicated were considered for substitution.

3.4 Novel Words

Novel words are not real words which were created to be orthographically similar to English words. Novel words were included in paragraphs accompanied by their meaning in either L1 or L2. The purpose of novel words was for vocabulary control purposes. According to Webb (2007) novel words serves to eliminate sensitivity towards target words. This is to ensure that participants have not encountered such words outside of the experiment. This research controls parts of speech by replacing only nouns with novel words similar to the study conducted by Godfroid, Boers and Housen (2013). The selection of novel words used in this research were obtained from Godfroid et al. (2013) and Webb (2007).

3.5 Post-test Questions

A post-test adapted from Tham et al. (2020) was given to participants after the reading task. To ensure incidental vocabulary acquisition, participants were not told of the post-test. The test includes 10 multiple choice questions (five testing L1 and five testing L2). The amount of target words is in line with similar studies done on incidental language acquisition (e.g. Godfroid et al., 2013, Tham et al., 2020, Webb, 2005). The questions were designed to test meaning and form. Maximum obtainable scores for each L1 and L2 conditions were five. Words in the post-test were similar as appeared in the reading task but replaced by means of para-phrasing where the context of the original paragraphs were maintained. An empty line replaces the Novel words. Participants had to circle the correct answer out of the four choices provided. Only one answer is correct while the other three were distractors consisting of novel words participants come across during the reading task. Distractors from novel words and paraphrased questions ensures that orthographic form recognition of words

that looked familiar was not enough for participants to choose the right answer (Godfroid et al., 2013). Participants had to choose the right answer with the correct meaning bearing context which they read in the text. The reason multiple choice questions were used was because studies on incidental learning which focused on acquisition of novel words were assessed using this method (Pellicer-Sánchez, 2016).

3.6 Research Procedure

This research adapted the methodology used in Tham et al. (2020). Participants read six paragraphs in English. Each paragraph contained a maximum of two novel words and a minimum of one novel word with a total of ten novel words. Of all the ten novel words which appeared in the paragraphs, five were paired with their meaning in L2 and the other five paired with their translation in L1.

Table 1: Two conditions illustrated with an excerpt of one paragraph

Condition	Example
1. Novel words + L2	Wiseman interviewed the political SCRANDIVIST (REPORTER) Robin Day, asking him about his favorite film.
2. Novel words + L1	The sound of chart-topping albums is making STAVENERS (听众) feel sick.

Note: The target areas have been capitalized in Table 1 for reference but appears in regular print in the actual experiment

This research utilises a repeated measures design where one group of participants take part in both conditions of the independent variable. The reason for using repeated measures design is because this method allows for a reduction in the participants variables or individual difference which allows for a more accurate result in the post-test. To prevent order effects, this study counterbalances the order of conditions for participants. This step alternates the order in which conditions are given to participants. Out of the 252 participants, 126 will begin the experiment with the L1 condition followed by the L2 condition. Meanwhile, the remaining participants will begin the experiment with the L2 condition followed by the L1.

To answer all three research questions, a surprise post-test was given to participants as soon as they completed the reading task. A time limit was not set for participants to complete the post-test. All quantitative data were analysed in SPSS version 23. Participants' correct answers were analysed based on the mean of correct answer using paired a sample t-test. Analysis was also done on participants' results based on their SPM English paper score. Participants were divided into groups of three: Good (A+, A & A-), Average (B+ & B) and Poor (C+ & below) based on their results in their SPM English paper and were compared based on their score in the post-test using an ANOVA. A paired samples t-test was conducted between each group to test for any significance for the L2 and L1 condition.

4. RESULTS AND DISCUSSION

4.1 Results

The skewness and kurtosis for the results of the post-test for L2 and L1 conditions are normal as it falls under the range of -1.5 to +1.5. It has a normal distribution.

Participants' mean incidental language acquisition on novel words accompanied by their L2 cues was 2.45. The mean for participants' incidental language acquisition on novel words accompanied by their L1 cues was 2.81. The variation of scores for L2 and L1 conditions were $SD = 1.420$ and $SD = 1.362$ respectively.

A paired-samples t-test was conducted to compare participants' incidental vocabulary acquisition for novel words between L2 and L1 conditions. A significant difference was found in the scores for the L2 and L1 conditions; $t(251) = -3.89$, $p < 0.001$.

A paired-samples t-test was conducted to compare incidental vocabulary acquisition for novel words between L2 ($M = 2.45$, $SD = 1.39$) and L1 ($M = 2.85$, $SD = 1.43$) conditions for participants with good English proficiency. A significant difference was found in the scores for the L2 and L1 conditions; $t(73) = -2.43$, $p < 0.05$.

A paired-samples t-test was conducted to compare incidental vocabulary acquisition for novel words between L2 ($M = 2.49$, $SD = 1.46$) and L1 ($M = 2.79$, $SD = 1.40$) conditions for participants with average English proficiency. A significant difference was found in the scores for the L2 and L1 conditions; $t(111) = -2.12$, $p < 0.05$.

A paired-samples t-test was conducted to compare incidental vocabulary acquisition for novel words between L2 ($M = 2.38$, $SD = 1.41$) and L1 ($M = 2.79$, $SD = 1.22$) conditions for participants with poor English proficiency. A significant difference was found in the scores for the L2 and L1 conditions; $t(65) = -2.23$, $p < 0.05$.

A one-way ANOVA was performed to compare the effect of English proficiency on post-test scores in the L2 condition. A one-way ANOVA revealed that there was no statistically significant difference in mean post-test scores between all three groups ($F(2,249) = [0.13]$, $p = 0.88$).

A one-way ANOVA was performed to compare the effect of English proficiency on post-test scores in the L1 condition. A one-way ANOVA revealed that there was no statistically significant difference in mean post-test scores between all three groups ($F(2,249) = [0.06]$, $p = 0.94$).

4.2 Discussion

The main focus of this article has been to study how multilinguals' incidentally acquire novel words when provided cues in their L1 and L2. The first research question asks the degree to which supplying L1 and L2 cues aid in incidental vocabulary acquisition. It was found that based on the post-test scores, the participants did better in the L1 condition as compared to the L2 condition. This indicates that although the paragraphs were given in the participants' L2, the provision of L1 cues contributes to better acquisition of L2 vocabulary as compared to the provision of L2 cues. The results go against the belief that L1 acts as a disruption towards L2 learning (Ellis, 1986). The results also contradict the study of Tham et al. (2020) which indicates that there are no significant differences in incidental vocabulary acquisition when participants were provided cues in L1 or L2.

The second research question asks about the degree to which students' English level proficiency affects their incidental vocabulary acquisition when provided cues in either L1 or L2. Based on the post-test scores, students across all levels of English proficiency showed a significant improvement in post-test scores when provided with L1 cues as compared to L2 cues. This indicates that the use of students' L1 with the aim to increase incidental acquisition of vocabulary is an effective method across students of different L2 proficiency. This result adds to the study done by Siti Hamin Stapa & Abdul Hameed Abdul Majid (2006) who stated that students' L1 could aid in promoting literacy in lower proficiency students. This study expands the scope to also include the benefits of L1 towards higher proficiency students.

The final research question asks if the type of cues affect students with different proficiency in terms of vocabulary acquisition. The ANOVA performed on all levels of students' proficiency in both L2 and L1 conditions showed that the incidental vocabulary acquisition of students is similar despite different levels of L2 proficiency. This indicates that the L2 proficiency of students does not influence the acquisition of novel words when given cues in either L2 or L1. The results support the findings of Razina Abdul Rahman (2005) who investigated the use of translation as an aid to students learning in English where students who use their L1 to explain difficult passages in L2 improves on their understanding of the text.

Results of this study supports the view of appreciating the language practice of the multilingual identified in theories such as translanguaging (e.g. García, 2014) and languaculturing (e.g. Chau, 2015). The results support the argument that multilinguals make use of their full communicative repertoire in meaning making based on the needs which arise. The use of L1 in an L2 classroom is an opportunity for students to expand their vocabulary rather than a hindrance (Tham et al., 2020).

5. CONCLUSION

A number of interesting findings have been observed in this paper on multilinguals' incidental acquisition of lexical cues in L1 and L2. The results of this research indicates that multilinguals incidentally acquire vocabulary better when given cues in their L1. There is little proof which indicates that students' L1 disrupts their acquisition of L2 vocabulary. The results supports the view that language users use their entire complex linguistic repertoires based on situations which arise.

Furthermore, the benefits of using L1 in an L2 classroom may benefit all students regardless of L2 proficiency. This research calls for the need to consider a more flexible approach in SLA classrooms when it comes to teaching and learning for multilingual students. The results in this study allows for educators to reflect on ways to support and enhance the learning process of multilingual students. The use of L1 in a multilingual student should not be suppressed but rather allowed and even encouraged in order for them to play an active role in their language learning. This study is not discouraging the use of L2 in SLA classrooms, but rather, encouraging the language learner and educators to employ the full linguistic repertoires of multilinguals. It is time for SLA classrooms to employ a more encompassing view of the multilingual; a view which returns the agency of learning back to them and one that empowers them (cf. Cook, 2013; García, 2014; Man & Chau, 2019; Ortega, 2018).

ACKNOWLEDGEMENTS

The contributions of Khairunnisa Salleh on her expertise on quantitative data analysis is gratefully acknowledged.

CITATION AND REFERENCES

- Almoayidi, K. A. (2018). The effectiveness of using L1 in second language classrooms: A controversial issue. *Theory and Practice in Language Studies*, 8(4), 375-379.
- Ames, W. S. (1966). The development of a classification scheme of contextual aids. *Reading Research Quarterly*, 2(1), 57-82.
- Ammar, A., & Lightbown, P. M. (2005). Teaching marked linguistic structures: More about the acquisition of relative clauses by Arab learners of English. In A. Housen & M. Pierrard (Eds.), *Investigations in instructed second language acquisition* (pp. 167-199). Berlin and New York: Mouton de Gruyter.
- Antón, M., & DiCamilla, F. (1998). Socio-cognitive functions of L1 collaborative interaction in the L2 classroom. *Canadian Modern Language Review*, 54(3), 314-342.
- Auerbach, E. R. (1993). Reexamining English only in the ESL classroom. *TESOL Quarterly*, 27(1), 9-32.
- Chau, M. H. (2015). From language learners to dynamic meaning makers: A longitudinal investigation of Malaysian secondary school students' development of English from text and corpus perspectives (Unpublished PhD thesis). University of Birmingham, Birmingham, UK
- CheckText.org | Free Text Analytics & Plagiarism Search. Checktext.org*. Retrieved 31 March 2016, from http://www.checktext.org/definitions#.Vvzko_l97IU.
- Cook, V. (2001). Using the first language in the classroom. *Canadian Modern Language Review*, 57(3), 402-423.
- Cook, V. (2013). Multicompetence. In C. A. Chapelle (Ed.), *The Encyclopedia of Applied Linguistics*. Oxford: Wiley- Blackwell.
- Cook, V. (2019). Challenging hidden assumptions in language teaching. *LEARN Journal: Language Education and Acquisition Research Network*, 12(1), 30-37.
- Creese, A., & Blackledge, A. (2015). Translanguaging and identity in educational settings. *Annual Review of Applied Linguistics*, 35, 20-35. doi:10.1017/S0267190514000233.
- Creswell, J. W., & Creswell, D. J. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (5th ed.). SAGE Publications, Inc.
- Cummins, J. (2005). A proposal for action: Strategies for recognizing heritage language competence as a learning resource within the mainstream classroom. *Modern Language Journal*, 89(4), 585-592.
- Elgort, I., & Warren, P. (2014). L2 vocabulary learning from reading: explicit and tacit lexical knowledge and the role of learner and item variables. *Language Learning*, 64(2), 365-414.
- Ellis, R. (1986). Activities and procedures for teacher training. *ELT Journal*, 40(2), 91-99.
- Ellis, R. (2008). *The Study of Second Language Acquisition*. Oxford: Oxford University Press.
- García, O. (2011). *Bilingual education in the 21st century: A global perspective*. John Wiley & Sons.
- García, O. (2014). TESOL translanguaged in NYS: Alternative perspectives. *NYS TESOL Journal*, 1(1), 2-10.

- Godfroid, A., Boers, F., & Housen, A. (2013). An eye for words: Gauging the role of attention in incidental L2 vocabulary acquisition by means of eye-tracking. *Studies in Second Language Acquisition*, 35(3), 483-517.
- Hazita Azman. (2009). English in 1Malaysia: A paradox in rural pluri-literacy practices. *Akademika*, 76, 27-41.
- Heatley, A., Nation, P., & Coxhead, A. (1994). Range. *Victoria University of Wellington, NZ*. [Computer program, available at <http://www.vuw.ac.nz/lals/>].
- Hulstijn, J. H. (2001). Intentional and incidental second language vocabulary learning: A reappraisal of elaboration, rehearsal and automaticity. In P. Robinson (Ed.), *Cognition and Second Language Instruction* (pp. 258-286). New York, NY: Cambridge University Press
- Jalil, H. (2015, December 8). Enough English teachers but in the wrong place. *The Sun*, p. 4.
- Jiang, N. (2004). Semantic transfer and development in adult L2 vocabulary acquisition. In P. Bogaards & B. Laufer (Eds.), *Vocabulary in a Second Language: Selection, Acquisition, and Testing* (pp. 101-126). Amsterdam/ Philadelphia: John Benjamins.
- Joseph, M., & Ramani, E. (2012). "Glocalization": Going beyond the dichotomy of global versus local through additive multilingualism. *International Multilingual Research Journal*, 6(1), 22-34.
- Leung, C., & Valdés, G. (2019). Translanguaging and the transdisciplinary framework for language teaching and learning in a multilingual world. *The Modern Language Journal*, 103(2), 348-370.
- Lin, Zhong & Lei, Lei. (2020). The Research Trends of Multilingualism in Applied Linguistics and Education (2000–2019): A Bibliometric Analysis. *Sustainability*. 12. 6058. 10.3390/su12156058.
- Lopez, A. A., Turkan, S., & Guzman-Orth, D. (2017). Conceptualizing the use of translanguaging in initial content assessments for newly arrived emergent bilingual students. *ETS Research Report Series*, 2017(1), 1-12.
- Lotto, L., & De Groot, A. (1998). Effects of learning method and word type on acquiring vocabulary in an unfamiliar language. *Language Learning*, 48(1), 31-69.
- Macaro, E. (2001). Analysing student teachers' codeswitching in foreign language classrooms: Theories and decision making. *The Modern Language Journal*, 85(4), 531-548.
- Malaysia Education Blueprint, M. (2013). Malaysia Education Blueprint 2013 - 2025. *Education*, 27(1), 1-268. <https://doi.org/10.1016/j.tate.2010.08.007>
- Man, D., & Chau, M. H. (2019). Learning to evaluate through that-clauses: Evidence from a longitudinal learner corpus. *Journal of English for Academic Purposes*, 37(1), 22-33. doi:10.1016/j.jeap.2018.11.007
- Na, L., & Nation, I. S. P. (1985). Factors affecting guessing vocabulary in context. *RELC Journal*, 16(1), 33-42.
- Nagy, W.E., & Anderson, R.C. (1984). How many words are there in printed school English? *Reading Research Quarterly*, 19(3), 304-330.

- Nation, P. (2003). The role of the first language in foreign language learning. *Asian EFL Journal*, 5(2), 1-8.
- Nation, I. S. P. (2013). *Learning vocabulary in another language* (2nd ed.). Cambridge: Cambridge University Press.
- Ortega, L. (2018). Ontologies of language, second language acquisition, and world Englishes. *World Englishes*, 37(1), 64–79. doi:10.1111/weng.12303
- Otheguy, R., García, O., & Reid, W. (2019). A translanguaging view of the linguistic system of bilinguals. *Applied Linguistics Review*, 10(4), 625-651.
- Pellicer-Sánchez, A. (2016). Incidental vocabulary acquisition from and while reading: An eye-tracking study. *Studies in Second Language Acquisition*. 38, 97-130.
- Razianna Abdul Rahman. (2005). Learning English from learners' perspective. *Kertas kerja Seminar Penyelidikan Pendidikan Kebangsaan ke XII 2005*. Putrajaya: Kementerian Pelajaran Malaysia.
- Schmitt, N. (2008). Review article: Instructed second language vocabulary learning. *Language Teaching Research*, 12(3), 329-363.
- Schmitt, N. (2010). *Researching Vocabulary: A Vocabulary Research Manual*. London: Palgrave Macmillan.
- Shieh, W., & Freiermuth, M. (2010). Using the DASH method to measure reading comprehension. *TESOL Quarterly*, 44(1), 110–128. doi:10.5054/tq.2010.217676
- Siti Hamin Stapa & Abdul Hameed Abdul Majid. (2006). The use of first language in limited proficiency classes: Good, bad or ugly. *Journal e-Bangi*, 1(1), 1-12.
- Tham, I., Chau, M. H., & Thang, S. M. (2020). Bilinguals' processing of lexical cues in L1 and L2: an eye-tracking study. *Computer Assisted Language Learning*, 33(7), 665–687.
- Van Hell, J. G., & Mahn, A. C. (1997). Keyword mnemonics versus rote rehearsal: Learning concrete and abstract foreign words by experienced and inexperienced learners. *Language Learning*, 47(3), 507-546.
- Vogel, S., & García, O. (2017). Translanguaging.
- Webb, S. (2005). Receptive and productive vocabulary learning: The effect of reading and writing on word knowledge. *Studies in Second Language Acquisition*, 27 (1), 33-52.
- Webb, S. (2007). The effects of repetition on vocabulary knowledge. *Applied Linguistics*, 28(1), 46-65.
- Wei, L. (2018). Translanguaging as a practical theory of language. *Applied linguistics*, 39(1), 9-30.

The Influence of Product Quality and Service Quality on Brand Leadership: An Empirical Study of Petrol Station Outlet Users

Khairul Anuar Abdul Shukor¹, Siri Roland Xavier^{2*} and Azrul Fazwan Kharuddin³

^{1, 2, 3}Universiti Tun Abdul Razak, Malaysia

ABSTRACT

The purpose of this study is to examine the influence of product quality and service quality on brand leadership. Brand leadership refers to a technique and strategies that organizations use to market a product and service. Current researchers focus on the brand equity dimension and yet less examine the relationship between product quality, service quality, and brand leadership, especially in petroleum industries. Therefore, a petrol station outlet user was selected to conduct this case study due to its importance in driving economic status and demonstrating the relationship between product quality, service quality, and brand leadership. The result of this study strengthens the research performed by Hanaysha, J., (2013). A survey questionnaire was administered to petrol users in Kuala Lumpur, Shah Alam, and Putrajaya. A convenience sampling survey technique was used in this study and 390 questionnaires were successfully collected from petrol users. In this research study, all data collected from the questionnaire summarized using SPSS (Statistical Package for Social Sciences) and AMOS (Analysis of Moment Structure) software and used structural equation modeling (SEM) to validate the measurement model and test hypothesis. Results indicated that product quality and service quality have a significant positive relationship with brand leadership.

Keywords: Brand Equity, Brand Leadership, Product Quality, Service Quality

1. INTRODUCTION

The increasing business competition in a diverse market has become important for firms to create brand awareness and brand management. Brand management becomes a significant approach to establish customers' good positive perceptions and loyalty. According to Murphy, J (1992), branding is a strategic process by the marketer to lead the brand with quality value, satisfying service, generating consumers' loyalty, and the reliability of the product or services. In other words, consumers shall generate loyalty towards the brand if the promised quality, value, and reliability are fulfilled. Through this idea of the brand concept, Aaker & Joachimsthaler (2000) have developed a brand leadership model that guides companies to design and build a strong brand for the sustainability of their products and services. As mentioned by Reizebos (2003), to create such a benefit to customers' perception of the brand, the brand must be meaningful to customers. Customers require a good perception of certain products and services to develop customers' trust. Quality is the

main factor to develop consumers' perspective, as stated by Aaker (1991), "consumer's perception of the overall quality or superiority of a product or services with respect to its intended purpose, relative to the alternative."

Quality in the customer's context is not very technical. Instead, it is based on perceptions of the product or services whether it is tangible or intangible. In the other words, it is about how customers feel about the specific product brand. Therefore, the brand manager needs to understand the influence of product quality and service quality on brand leadership as a strategy to remain competitive. Indeed, product quality and service quality are both important elements that drive the success and the image of a brand. Despite the importance of product quality and service quality, there is limited research about the significant role of product quality and service quality in developing brand leadership, particularly in the petroleum industry.

The petroleum industry is one of the main industries that contribute to the economy and gross domestic product (GDP) of the country, as in the case of Malaysia. Generally, the petroleum industry is divided into three major sectors that are: (1) Upstream, (2) Midstream, and (3) Downstream. Upstream refers to activities of exploration, field excavation development, and production operation. Midstream sectors are involved in activities such as transportation, processing, and distribution. Downstream refers to activities such as manufacturing, refining, research development on petrol-chemical and wholesale and marketing (petrol station). This study shall focus on downstream activities more specific on wholesale and marketing (petrol station) as a medium to examine the relationship between product quality, service quality, and brand leadership.

2. LITERATURE REVIEW

The purpose of this study is to examine the influence of product quality and service quality on brand leadership; this would strengthen the finding to demonstrate the positive relationship between product quality, service quality, and brand leadership performed by Hanaysha et al 2013. However, the medium of the study changes from automotive (Hanaysha et al 2013) to petrol station outlet (Petroleum Industry).

2.1 Brand Equity

The concept and the importance of brand equity have been widely discussed among both researchers and practitioners. Brand equity is generally accepted as a critical success factor to differentiate a company from its competitors. Aaker (1996) combines customer's behavioural and perceptual approach to evaluate brand equity. Aaker's brand equity derives from customer perception. In fact, it is focused on customer satisfaction and builds a strong brand for the company to deliver product quality and service quality at a higher level. This creates a brand value to the company and the willingness of customers to pay premium price (Yoo et al. 2000). Whilst, brand equity dimension stated by Keller, et al (1993) focuses on how to develop customer relationship. The relationship is based on customer response on the quality of the product or services. This shows both scholars have a common perspective on quality as a dimension of brand equity (Janiszewski and van Osselelaer, 2000). Indeed Keller, et al., (1993) suggested that brand equity derives from two sources: (1) brand awareness and (2) brand image. Both sources are influenced by quality, favourability, strength and uniqueness of product or services. This shows that quality in product and services has a serious

impact in brand equity and leads brands to compete in a competitive market. The success of brand equity leads to raising the brand equity to the level of management and leadership (Aaker, 2000).

2.2 Brand Leadership – The New Imperative

The brand leadership concept was introduced by Aaker (2000) to enhance the brand management process with the ability of the brand to continually achieve excellence and competitiveness in the market. Current researchers make a contribution to brand leadership literature in several ways. First, the researchers offer to concrete operational definition of brand leadership by relating to brand equity dimension for example the element of brand evaluation and the importance of brand recognition strategic to the product or services and in organization branding context (Cheng et al. 2007). Second, researchers offer a reliable and valid measurement tool with brand leadership that can be systematically measured from consumers' perspectives. This allows researchers to explore the theoretical relationship between brand leadership and other brand equity construct, for example, perceived quality (Miller and Mills 2011).

Building a brand is a useful advantage for industrial capture larger market shares and obtain leadership position status within competitive players (Keller, 2008). Indeed, for a brand to obtain a brand leadership position, it is essential to have different products or services with something valuable, unique, and of good quality. Hanaysha et al (2013) have demonstrated that brand leadership can be sustained by being dependent on the ability to provide product quality and service quality. This relationship shows that brand leadership is significant for firms to pay attention. Thus, this study serves to demonstrate that product quality and service quality are important elements of success in brand leadership.

2.3 Product Quality

According to Shaharudin, M.R., et. al., (2011) contemporary researchers and practitioners have considered product quality as one of the strategy positioning tools that significantly influence customers' buying decisions. Supported by Hilman, H. (2015), and Eze et. al., (2012) has expressed that product quality is one of the brand strategic techniques that can be utilized for building sustainable competitive advantage and improving managing brand leadership. Thus, to achieve that practically by offering a quality product with meaningful characteristics and improving customer requirements.

The typical definition for product quality was introduced by Zeithaml (1998), as “the perceived superiority in a product as compared with competing alternatives forms the customer’s perspective product quality, product value, consumer trust, consumer relationship value and commitment as representing important aspects of business relationships”. Whilst Insch and McBride (2004) have stated there are three elements that represent product quality: (1) design quality, (2) manufacturing quality, and (3) overall quality. Further, Kotler, P. and Armstrong, G., (2010) have defined a product quality as the ability to demonstrate a product in its function, it includes the overall reliability, durability, featuring, performance, and acceptable cost. Thus, product quality is one of the critical brand success factors in any industry. In fact, Otubanjo (2013), believed product quality is one of the significant factors to enhance brand leadership. Therefore, product quality plays an important role to develop the leading brand in a competitive market. Based on this discussion, the following hypothesis is offered:

H1: Product quality has a significant relationship with brand leadership.

2.4 Service Quality

Providing superior quality in services is important for any service provider including a petrol station and it is a fundamental strategy for long-term brand success in a competitive market. According to Gronroos, (1984), service quality is the outcome of an evaluation process where the customer will compare between what they expect regarding service and their perception about the service that they have received or experienced. Offering a good service quality shall impact customer justification for selecting a certain brand over another. Indeed Hilman, H., (2009) strongly stated any firm to obtain in a competitive market should focus on differentiating their services from other competitors by providing quality of services to its respected customers, thus in return in the long run shall build a positive brand image and brand perceptions.

Modern literature has defined service quality from many different perspectives. Classic definition on service quality made by Meffert and Bruhn (1996), “the service quality is the capability of a provider to shape the character of a primarily intangible service requiring the participation of the customer to meet specific standards based on customer expectations”. According to Haywood-Farmer, (1998) service quality means when a service organization meets customer preferences and expectations consistently.

However, contemporary studies on service quality have focused on pure services context for example education, hospital service, automotive service, and banking sectors. In addition, the relationship between service quality and brand leadership has received less attention. Therefore, this study is to fill the gap by examining the relationship between service quality and brand leadership. Supported by Varghese (2010) has given a shred of strong evidence on the relationship between service quality and brand leadership. Further, offering a quality of service to customers represents the key driver for building brand leadership. Based on this discussion, the following hypothesis is proposed:

H2: Service quality has a significant relationship with brand leadership.

2.5 Relationship Between Product Quality, Service Quality and Brand Leadership

Previous research on product quality and service quality has focused on customer satisfaction and less attention to relate with brand leadership (Hilman, H. 2015). Evidence shows that offering a quality product or service is the main factor to enhance brand leadership (Varghese, 2010 and Otubanjo 2013). Thompson (2013) and Beverland et al. (2007) further demonstrated that product quality and excellent services would promote favourable brand image and play an important role in differentiating a brand from its competitors.

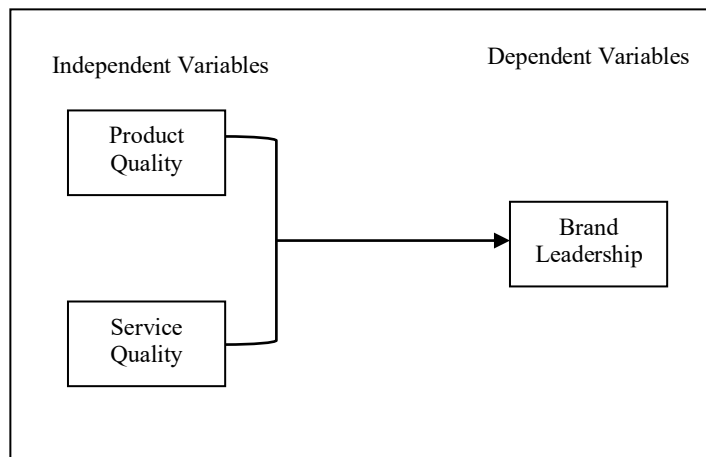
Jahanshahi, A. A et. al., (2011) highlight that brand leadership management is important to both internal and external customers. Shaharudin, M. R., et. al (2011) further argued that good brand leadership management will not benefit multinational companies but also small and medium enterprises (SMEs). Hence, generally, firms need to think of branding and brand leadership as a tool to sustain competitive brand advantage. Hanaysha J, et. al. (2013) highlights other factors that contribute to brand leadership such as loyalty, brand image, product quality, and service quality.

Researchers propose to examine the influence of product quality and service quality on brand leadership. Thus, the positive relationship between product quality, service quality, and brand leadership are believed to be able to strengthen the literature finding on the relationship of the variables. This helps the firm to understand the important factors required to retain their brand (product/services) as competitive advantages.

2.6 Research Framework

Based on the literature review, a conceptual framework for this study was developed as per Figure 1. This conceptual framework was adapted from Hanasyha J. et al. (2013). There are two qualities that were measured in this study: Product Quality and Service Quality. Then these two qualities were linked to brand leadership to measure positive or negative relationship of product quality and service quality on brand leadership. From the research framework, the independent variable for this study is product quality and service quality. While the dependent variable or outcome is the brand leadership.

Figure 1: Research Framework. (Hanasyha et.al., 2013)



3. MATERIAL AND METHODS

This study is to examine the influence of product quality and service quality on brand leadership thus strengthening the findings made by Hanasyha J. et al. (2013). Petrol users were selected as a medium to conduct this study. Product quality and service quality are represented as independent variables whereas brand leadership represents the dependent variables. The data was collected by distributing a set of questionnaires to petrol users in Shah Alam, Kuala Lumpur, and Putrajaya of Malaysia. In this study, the questionnaire was adapted to suit the objective of this study (Hansyha et al. 2013) and (Garvin D. A. 1998). This is because the reference items have acceptable reliabilities, with Cronbach's alphas of more than 0.70, and were tested previously in different industry sectors but the same study concept. All constructs were measured using a Five-Point Likert scale that ranged from (1) strongly disagree and (5) strongly agree.

IBM SPSS® and AMOS® software has been used for model fitting and analysis purposes. The analysis used in this study was Confirmatory Factor Analysis (CFA), Discriminant Validity (DV), and Structural

Equation Modeling (SEM). Confirmatory Factor Analysis (CFA) is commonly used in a social investigation to test whether the steps are in line with the investigators' objective or required to modify (Azrul et. al. 2020).

4. RESULTS AND DISCUSSION

In this study, 500 questionnaires were distributed to random petrol users in the Kuala Lumpur, Shah Alam, and Putrajaya region of Malaysia. However, only 390 questionnaires were returned representing a 78% response rate of the overall study. As stated by DeMaio (1980), it is not expected to obtain a maximum response in studies where participation in the survey is voluntary. Whilst, Baruch & Holton (2008), claim that the average aggregate response rate to be a benchmark must be settled at about 50%. Thus, the data collected is acceptable for analysis. The demographic characteristics of respondents are shown in Table 1. The majority of the respondents are female (50.8%). In terms of age, 50.3% of the respondents are between 31 – 40 years old.

The analysis on Petroleum Company branding preferred choices revealed that 160 (41.0%) respondents' preferred choice was Petronas. Closely followed by Shell with 158 (40.5%) respondents. There were 48 (12.3%) respondents whose preferred brand was Petron, 18 (4.6%) respondents chose BHP, and 6 (1.6%) respondents chose Caltex as their preferred petroleum brand.

Similarly, the engine oil brand preferred choice showed that 106 (27.2%) respondents chose Petronas Syntium engine oil, 122 (31.3%) respondents were choosing Shell Helix engine oil, while BHP Syn Guard and Caltex Havoline engine oil both have 2 (0.5%) respondents each. The majority of respondents preferred to use other specific engine oil brands representing 158 (40.5%).

The responses to the survey revealed that the availability of other services and location nearer to home or route is an important aspect in consumers' decision to drive into a petrol station. Proximity to home or route shows 36.9% of customers drive into petrol stations and followed closely by the availability of other services at petrol stations, which is 36.4%. Aside from that, about 15.9% of respondents make up decisions based on a factor such as avoiding traffic conditions at petrol stations. The product brand and the loyalty card show very low decision-making to drive into a petrol station. Statistically, it shows that consumers' decision to drive into the petrol stations is due to proximity to home location or route during traveling.

Table 1: Survey Respondents' Demographic Frequencies

Variable	Frequency	Percentage	Chart
Gender			
Male	192	49.2	
Female	198	50.8	
Age			
Below 20 years old	2	0.5	
20 - 30 years old	78	20	
31 - 40 years old	196	50.3	
41 - 50 years old	86	22.1	
51 years old and above	28	7.2	
Religion			
Islam	370	94.9	
Christian	4	1	
Hindu	14	3.6	
Others	2	0.5	
Education			
Secondary School	78	20	
Diploma	156	40	
Bachelor's Degree	118	30.3	
Master's Degree	24	6.2	
Others	14	3.6	
Ethnic Group			
Malay	366	93.8	
Chinese	2	0.5	
Indian	14	3.6	
Others	8	2.1	

4.1 Goodness of the data

A confirmation factor analysis was conducted to measure adequate of the items constructs. The results show that the value of the Kaiser-Meyer-Olkin (KMO) measure of sampling is equal to .845 for product quality, .797 for service quality, and .852 for brand leadership. According to Hair et al (2018), it is suggested that if the Kaiser-Meyer-Olkin (KMO) is greater than 0.6, the sampling is adequate to proceed with factor analysis. The Bartlett's Test of Sphericity (BTS) for all sampling was found to be significant ($P=.000$), which confirms that the inter-correlation matrix contains sufficient variance to make all the factor analysis valid. Moreover, to support the sampling validity, the factor loading and communalities based on principal components analysis with varimax for all 18 items were measured. The results show that the communalities for all items are ranging from 0.534 to 0.868, which can be interpreted as the proportion of variance of each item that was explained by three factors, which are Product Quality, Service Quality, and Brand leadership. Principal

components analysis was used to identify and compute all items into specific factors components that should be 0.5 (50%) or better as suggested by Garson (2012) and Azrul et. al. (2020).

In addition, Cronbach's alpha reliability coefficient was calculated to test the reliability analysis of measures across all construct items. The results revealed that all the variables have acceptable reliability (internal consistency), for product quality is 0.865, followed by service quality which is 0.786, and brand leadership is 0.836. According to Hair et al. (2018), when the co-efficient alpha is greater than 0.70, it indicates that high internal consistency of all instruments, hence convergent validity is supported.

Composite reliability (CR) was also calculated to determine the consistency of construct validity of sampling measure the value for product quality variable is 0.865, service quality variable is 0.786 and the brand leadership shows a value of 0.836. Therefore, all variables are reliable as a measurement tool in this study because the composite reliability value is above the provisions of 0.6 (Suprpto, W and Stefany, S, 2020).

Furthermore, Average Variance Extracted (AVE) was also measured which can support and better reflect the characteristics of each research variable in the model as suggested by Arbuckle, J.L., (2010). AVE value for product quality is 0.832, service quality is 0.875 and brand leadership shows the result of 0.860. Thus, the overall indicators for each variable are declared reliable as they have an AVE value greater than the minimum score of 0.5 (Suprpto, W and Stefany, S, 2020). All the constructs and measurement results are shown in Table 2.

Table 2: Constructs and Measurement Results

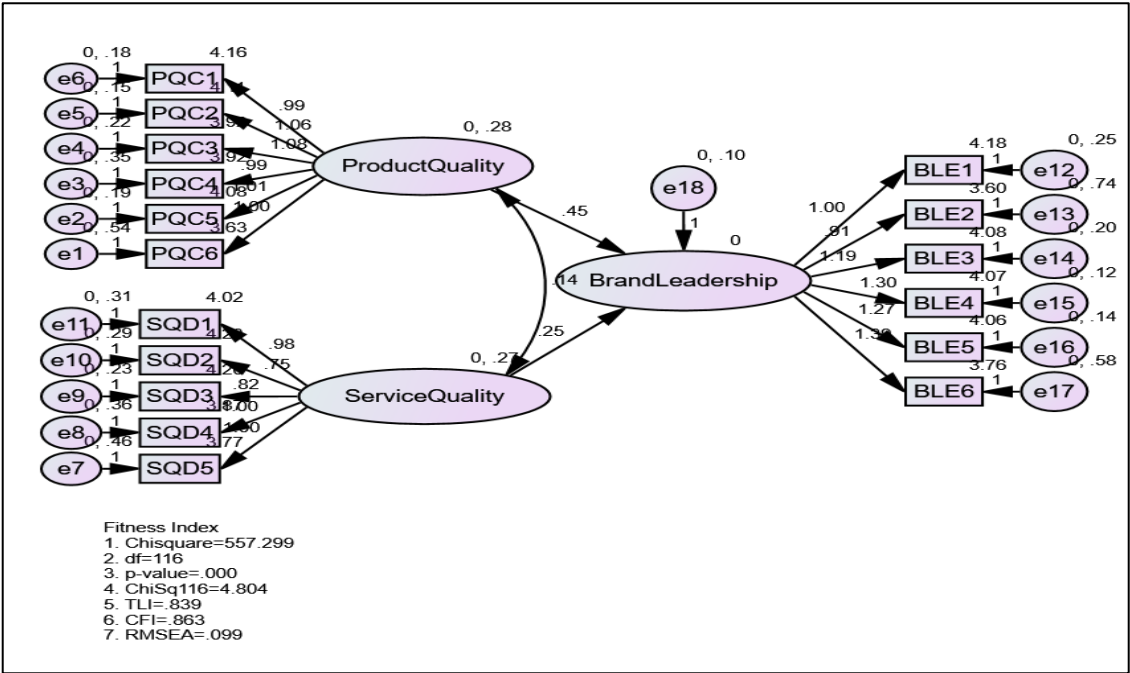
Items	Constructs and Measurement	Cronbach's Alpha, α	Composite Reliability	AVE
Product Quality		0.865	0.693	0.832
PQC1	This petrol brand has good quality			
PQC2	This petrol brand offered better engine protection			
PQC3	I feel more power behind the wheel after filled with this petrol brand			
PQC4	I feel fuel consumption value to price			
PQC5	Engine oil of this brand has good quality for engine			
PQC6	I use this petrol brand because it's recommended by engine specialist/workshop technician			
Service Quality		0.786	0.766	0.875
SQD1	I choose this petrol station brand because the payment method is easy			
SQD2	I choose this petrol station brand because its nationwide.			
SQD3	The petrol station brand and the retails shop available is clean and well stoked.			

SQD4	The loyalty card gives reasonable cumulative points amount to redeem compared to others brand.			
SQD5	The use of specific credit card / e-wallet card gives me value either rebate or off price.			
SQD6	Provided variety of services in petrol station retails shop			
Brand Leadership		0.836	0.739	0.860
BLE1	I believe this petrol brand is one of the leading brands in its category			
BLE2	Advertisement influences my purchasing decision			
BLE3	The petrol brand is growing in popularity			
BLE4	The brand lead with advance in product			
BLE5	the brand lead with advance in service			
BLE6	I am loyal to one petrol station brand because of its reputation			

4.2 Hypothesis Testing

Structural Equation Modelling (SEM) is concerned with the model, which comprises all variables together. However, several indices were used to determine the goodness of fit of the model. As shown in Figure 2, the modified structural model has yielded an expected significant chi-square which is (557.299, $p < 0.05$) given the large sample size employed in this research study. Other fit indices were also used to support chi-square and measure the goodness of fit for example (TLI = 0.839, CFI = 0.863, and RMSEA = 0.099). From this result, it can be concluded that the model achieved well for the data, and it is consistent with Hanasyha, J. et al (2013) and Hair et al (2018).

Figure 2: Research Framework Structural Model



In fact, to test the offered hypothesis, the covariance and correlation tables were taken from the output of the measurement model performed on AMOS. The results indicated that product quality has significant positive influence on brand leadership where ($\beta = 0.450$, CR = 7.196, $p = < 0.05$). Thus, this means that H1 is supported:

H1 Product quality has a positive relationship on brand leadership.

While for service quality the results indicated that service quality also has a significant positive influence on brand leadership where ($\beta = 0.251$, CR = 0.545, $p = < 0.05$), therefore that H2 is accepted:

H2 Service quality has a positive relationship on brand leadership.

Table 2: Research Findings

	Hypothesized Effect	Std. Estimate (β)	S.E	C.R	P	Support
H1	Product quality has significant relationship with brand leadership	0.450	0.062	7.196	***	Yes
H2	Service quality has significant relationship with brand leadership	0.251	0.055	0.545	***	Yes

Notes: ***: $p < 0.001$; **: $p < 0.01$; *: $p < 0.05$

4.3 Discussion

The focus of this study is to determine the effect of product quality and service quality on brand leadership in the context of petrol station users in a certain specific location of Malaysia, hence adding value from an empirical study by Hanasyha J. et al. (2013). The study was tested using a questionnaire survey and analysed using structural equation modelling (SEM) and confirmation factor analysis (CFA). The results indicated that product quality and service quality have a significant relationship with brand leadership. The objective of this study was to examine the influence of product quality and service quality on brand leadership and to demonstrate the relationship between variables. This result was expected because customer perception depends on the petrol company brands that emphasize product quality and value of purchasing. Similarly, Otubanjo (2013) agreed that increasing the level of product quality (service quality) plays an important role to build a strong brand in a competitive marketplace. In the other words, the key to brand leadership sustainability is related to the level of product (service) quality offered by the provider. Additionally, Keller (2008) declared that the leading brand is influenced by the image of product or service quality level among customer perceptions. In addition, in highly competitive markets, with the increasing numbers of brands, delivering products with high quality and offering excellent services to customers not only can improve brand image, but also would enable such product or services brands to sustain competitive advantage in the long run and become the leading brand.

By understanding customer preferences and requirements, petrol station services or any business environment should enhance their product and service quality. Beverland et.al (2007) claimed that leading brands are considered as powerful and influential in gaining customers' attraction through focusing on improving product and service quality. Based on the above discussion, shows the

importance of quality in developing brand leadership. Thus, it is suggested that the petroleum industry should utilize maximum efforts towards improving its product quality and service quality.

5. CONCLUSION

Recent brand leadership and consumer perception studies emphasize the importance of perceived quality as an instructive construct in building brand awareness and brand image to obtain a competitive advantage. This study has aligned and strengthened the past research about the influence of product quality and service quality on brand leadership. In addition, it has demonstrated consistency with prior literature that has shown that product quality and service quality have a positive and significant relationship with brand leadership.

This study exercise has confirmed that there is a positive significant relationship between product quality, service quality, and brand leadership. Hence, it is important for industries or business firms to ensure that consumers are satisfied with the product or services they provide. When consumers are satisfied with the product or services, they will trust and recommend them to others. Indeed, this positive influence will be able to develop brand sustainability in a competitive market. It is suggested that industries or business firms incorporate product quality and service quality into their business strategies.

This study has some limitations. For the sample size, for example, the respondents were only from a specific area (Kuala Lumpur, Shah Alam, and Putrajaya) of Malaysia, therefore it is suggested for future research to conduct such similar study in other larger areas to gain more data collection. Moreover, this study focuses on quality elements of products and services to relate to brand leadership strategy. An interesting study would involve other brand leadership factors such as brand experience, innovativeness, value, and popularity. By doing so, it would strengthen the results and provide informative information to the petroleum industry or other industries to better understand the possible strategies to develop brand leadership and gain a competitive advantage.

ACKNOWLEDGEMENTS

The authors would like to thank the respondents for participation and co-operation in the survey and heartfelt gratitude to reviewers who have provided suggestions to improve the research articles.

CITATION AND REFERENCES

- Aaker, D.A (1996). *Building strong brands*, New York, NY: The Free Press.
- Aaker, D.A. & Joachimsthaler, E. (2000). *Brand leadership*. New York: The Free Press.
- Aaker, D.A., (1991). *Managing brand equity*. New York, NY: The Free Press.
- Arbuckle, J.L., (2010). *AMOS 18.0 User's Guide*. USA: AMOS Development Corporation.
- Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Organizational Research*, 61 (1139).
- Azrul Fazwan K., Norazura A., Zaida M., Ku Faridah K. I., Darvinatasya K., (2020). Application of structural equation modeling (SEM) in estimating the contributing factors to satisfaction of TASKA services in East Coast Malaysia. *Asian Journal of Assessment in Teaching and Learning*. Vol. 10, Issue 1, 2020 (68-76).
- Beverland, M., Napoli, J., & Lindgreen, A. (2007). Industrial global brand leadership: A capabilities view. *Research Memorandum*, 75, 1-32.
- Cheng, J.M.S., Chen, L.S.L., Lin, J.Y.C. and Wang, E.S.T., (2007). Do consumers perceive differences among national brands, international private labels and local private labels? The case of Taiwan. *Journal of Product and Brand Management* 16(6): 368-376.
- DeMaio, T. (1980). Refusals: Who, Where and Why. *Public Opinion Quarterly*, 44, 223-233.
- Eze, U. C., Tan, C.-B., & Yeo, A. L.-Y. (2012). Purchasing Cosmetic Products: A Preliminary Perspective of Gen-Y. *Contemporary Management Research*, 8(1), 51- 60.
- Garvin, D.A. (1998), *Managing Quality: The Strategic and Competitive Edge*, The Free Press, New York.
- Gronroos, C. (1984). A Service Quality Model and its Marketing Implications. *European Journal of Marketing*, 18(4), 36-44.
- Hair, J. F., Jr., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2018). *Multivariate Data Analysis (8th ed.)* Upper Saddle River, N.J: Pearson Prentice Hall.
- Hanaysha Jalal, Noor Hasmini Abd. Ghani and Haim Hilman Abdullah (2013). *The influence of product quality and service quality on brand leadership: Empirical evidence from Malaysia*. Retrieved from Repo.UUM.edu.my.
- Haywood-Farmer, J. (1988). A conceptual model of service quality. *International Journal of Operations and Production Management*, 8(6), 19-29.
- Hilman, H. (2009). *The relationship of competitive strategy, strategic flexibility and sourcing strategy on organizational performance*. PhD Thesis, Uiniversiti Putra Malaysia, Malaysia.
- Hilman, H. (2015). Strategic effects of product innovation, service quality, and relationship quality on brand equity. *Asian Social Science*, Vol 11, No. 10.
- Insch, G.S., & McBride, J.B (2004). The Impact of Country of Origin Cues on Consumer Perceptions of Product Quality: A Binational Test of the Decomposed Country of Origin Construct. *Journal of Business Research*, 57, 256-265. [https://doi.org/10.1016/S0148-2963\(02\)00323-5](https://doi.org/10.1016/S0148-2963(02)00323-5)
- Jahanshahi, A. A., Gashti, M. A. H., Mirdamadi, S. A., Nawaser, K., & Khaksar, S. M. S. (2011). Study the effects of customer service and product quality on customer satisfaction and loyalty. *International Journal of Humanities and Social Science*, 1(7), 253-260
- Janiszewski C., and Osselaer Van Stijn M. j., (2000). A Connectionist Model of Brand-Quality Associations. *Journal of Marketing Research*. <https://doi.org/10.1509/jmkr.37.3.331.18780>.

- Keller, K.L. (2008). *Strategic Brand Management: Building, Measuring and Managing Brand Equity*, Prentice-Hall, Upper Saddle River, NJ.
- Keller, Kevin L., (1993). Conceptualizing, Measuring, Managing Customer-Based Brand Equity. *Journal of Marketing*. Jan93, Vol. 57 Issue 1, p1-22, 22p.
- Kotler P, Armstrong G (2010). *Principles of marketing*. Pearson Prentice Hall, Thirteenth Edition, New Jersey, NJ.
- Meffert, H. & Bruhn, M. (1996). *Service Marketing: Principle, Concepts, Methods*. Wiesbaden, Gabler:Verlag.
- Miller, K.W. and Mills, M.K. (2011). Contributing Clarity by Examining Brand Luxury in the Fashion Market. *Journal of Business Research*. 65 (10): 1471-1479.
- Murphy, J. (1992). *What is Branding?* In Murphy, John (Eds.), *Branding, a key marketing tool* (pp. 1-12). Macmillan: London.
- Otubanjo, O. (2013). A Discourse Approach to Brand Leadership Management. *International Journal of Marketing Studies*, 5(2), 131-137.
- Riezeboz, R. (2003). *Brand Management – A Theoretical and Practical Approach*. Pearson Education Limited: Harlow.
- Shaharudin, M. R., Mansor, S. W., Hassan, A. A., Omar, M. W., & Harun, E. H. (2011). The relationship between product quality and purchase intention: The case of Malaysia's national motorcycle/scooter manufacturer. *African Journal of Business Management*, 5(20), 8163-8176.
- Suprpto, W., Stefany, S., & Ali, S., (2020). *Service Quality, Store Image, Price Consciousness, and Repurchase Intention on Mobile Home Service*. SHS Web of Conferences 76, 01056 (2020) ICSH 2019. Retrieved from <https://doi.org/10.1051/shsconf/20207601056>.
- Thompson, A. B., (2013). *The Changing Face of Brand Leadership*. 19 November 2013. Retrieved from: <http://www.mediapost.com/publications/article/191513/the-changing-face-of-brand-leadership.html>
- Varghese, T. (2010). Cummins India: Brand Leadership Through Service Excellence. *Journal of Indian Business Research*, 2(3), 181-189.
- Yoo B., Donthu N., and Lee S., (2000). An Examination of Selected Marketing Mix Elements and Brand Equity. *Journal of the Academy of Marketing Science*.
- Zeithaml, V. A. (1998). Consumer Perceptions of Price, Quality, and Value: A Means-end Model and Synthesis of Evidence. *Journal of Marketing* 52(July): 2-22.

A Study on Working Environment, Victims Attitude and Power towards Sexual Harassment Experience amongst the Working Adults in Kuala Lumpur**Nishail Lilaram, Benjamin Chan Yin Fah, Jugindar Singh Kartar Singh**

Graduate School of Business, Universiti Tun Abdul Razak (UNIRAZAK), Malaysia

Asia Pacific University of Technology and Innovation, Malaysia

ABSTRACT

Sexual harassment has been recognised as a serious problem for the past 30 years. In this research, the forms of sexual harassment will be discussed. The main focus of this research will be the factors of sexual harassment to women working in the private sector in Malaysia. An overview on effects of sexual harassment and ways to overcome sexual harassment is also provided in this topic. Different theoretical perspectives and models of sexual harassment are also considered and reviewed. This research will help to better identify the factors causing sexual harassment. By identifying the factors of sexual harassment, appropriate ways can be planned to overcome the factors of sexual harassment.

1.0 INTRODUCTION

Sexual harassment occurs in all occupations and industries, and organisational culture is key to understanding how and why it occurs in some places and not in others. Organisational violation is seen in terms of sexual harassment bullying and physical violence. The culture of the organisation is what causes individual employees to be treated abusively or with disrespect. Hierarchical and managerial powers are central to understanding how such a culture develops and continues. As the climate of disrespect within an organisation worsens, the more likely it is for certain inappropriate behaviour to be taken for granted, leading to the creation of an 'incivility spiral'. This is where discourteous behaviour becomes routine and regarded as normal by employees and employers. For the victims who have made their situation known, their complaints have typically been ignored, trivialised, or denied.

Sexual harassment has been found to be more prevalent in certain work situations, for example, in jobs where there are large power differentials between women and men, where there is an unequal sex ratio, when a new supervisor or manager is appointed or during periods of job insecurity. Two types of leadership style are particularly, although not exclusively, associated with harassment and bullying, an authoritarian style where there is limited consultation with staff and a laissez faire style where management fails to lead or intervene in workplace behaviour.

People who belong to a socially advantaged group, the 'in-group', tend to have a preference for members of their own group and are likely to be biased against members of any socially disadvantaged 'out-group'. What this means in terms of sexual harassment is that the greater the distinction between the in and out group in the workplace, for example in the power held by men and women, the more likely it is that sexual harassment will occur.

According to the International Labour Organisation (ILO), sexual harassment is a clear form of gender discrimination based on sex, a manifestation of unequal power relations between men and women. The problem relates not so much to the actual biological differences between men and women – rather, it relates to the gender or social roles attributed to men and women in social and economic life, and perceptions about male and female sexuality in society that can lead to unbalanced male-female power relationships.

2.0 RESEARCH OBJECTIVE AND SIGNIFICANCE OF STUDY

The purpose of this study is to gain a better insight of sexual harassment experienced by working adult at their workplace. This research has both practical and theoretical insight into the results. Through this research, the factors that cause sexual harassment will be highlighted. In addition, the type of sexual harassment that working adult go through at their workplace will also be addressed. The negative impacts of sexual harassment on working adult psychology will also be explored. This will contribute to reducing sexual harassment in the workplace by the recommendations given on how to prevent working adult from being sexually harassed at their workplace.

The objectives of the study will be:

- 1) To identify forms of sexual harassment problems faced by working adults in the workplace.
- 2) To identify factors that causes sexual harassment to working adults in the workplace.
- 3) To identify ways to prevent sexual harassment to working adults at the workplace.
- 4) To identify the negative impacts of sexual harassment on working adults.

3.0 RESEARCH METHOD

This research aims to study the sexual harassment experience faced by working adults in KL. The reason this study focuses on the working adults in KL because they are the group that faces sexual harassment mostly based on statistical data from previous study. This study is focusing on the population of working adults in KL to collect more data on this issue.

Percentages and frequency count will be calculated to examine the factors that contribute to sexual harassment to women employees in the private sector in Malaysia. The probability sampling technique which is simple random sampling will be used in this research. The sample size was checked in terms of statistical power for model testing. The examination was made using an a priori power analysis performed with G*Power application (Faul et al., 2009) which indicated $N = 146$, as minimum sample-size needed for detecting medium-size effects in a six-factor model, estimated with 0.05 error probability and 95 per cent power. Therefore, the sample size ($N = 200$) was found appropriate for approaching the proposed model.

This research study will be tested using a questionnaire-based data collection method. The questionnaire is developed based on the literature review. The questionnaire is an online google form which was distributed through social media like WhatsApp and Facebook. The selection criteria of the respondents were people who were 18 and above and worked in Kuala Lumpur.

The questionnaire used in this research is divided into three components consisting of Section A, Section B and Section C. All the variables and information are operationalised and measured for this research. Section A will contain questions designed to analyse the independent variable. Section B will contain questions designed to analyse the dependent variable. Section C will contain information regarding the demography of the respondents. Information such as age, rank, years of service, income and marital status will be included. Section A and Section B will be measured using the Likert Scale. Most previous research had used the five point Likert Scale. By using this scale, respondents will be able to decide to which extent they agree or disagree with a statement.

Statistical Package for Social Science (SPSS) is the software that will be used in this research. SPSS is one of the most common software used in this type of research. This software is useful for analysing large scale survey data. Previous research based on literature review also commonly used this software. By using the SPSS software, a more accurate data analysis will be obtained which in turn will be used to come out with a conclusion and recommendations.

4.0 RESULTS

A total of 80 valid responses were received from this distribution. The background information of the survey would be best illustrated with a frequency distribution. Table 1 shows the demography data of the respondents of this research.

Variables	Categories	Frequency	Percentage (%)
Gender	Male	28	35
	Female	52	65
	Total	80	100
Age	18 -19 years old	11	13.8
	20 - 29 years old	47	58.8
	30 - 39 years old	13	16.3
	40 - 49 years old	7	8.8
	50 & above	2	2.5
	Total	80	100
Marital Status	Single	61	76.3
	Married	18	22.5
	Divorce	1	1.3
	Total	80	100
Years of Employment	Less than 2 years	47	58.8
	2 - 5 years	14	17.5
	6 - 10 years	7	8.8
	More than 10 years	12	15.0
	Total	28	100.0

Table 1: Demography data of the respondents

Table 1 indicates that more than 50% of the respondents were females (65%) among the 80 respondents. In regards to age, the highest percentage of respondents are between 20 and 29 years of age (58.8%), followed by the age group between 30 and 39, which is (16.3%). The lowest percentage reported for age groups 50 and above, with only two respondents.

As can be seen from Table 1, the majority of respondents (76.3%) in the current study reported that they were single while they were (22.5%) of the respondents are married. On the other hand, a total of one respondent indicated that he/she is divorced (1.3%).

The demographic analysis shows (58.8%) or 47 of the respondents of this research with less than 2 years of working experience, while those with working experience of 2 to 5 years are only (17.5%), followed by 12 respondents (15%) with more than 10 years of working experience. Respondents with working experiences of 6 to 8 years, reported to have 7 respondents with the lowest percentage, which was (8.8%) compared to others.

Variables	Cronbach's Alpha
Working Environment	0.449
Victim's Attitude	0.719
Power	0.677
Sexual Harassment	0.887

Table 2: Correlating Sexual Harassment experience with Selected Variables

Table 2 shows the numerous variable results with the respective Cronbach's Alpha (r) value. Based on the result above shows sexual harassment variable scored the highest value $r=0.887$, followed by the victim's attitude $r=0.885$ and power $r=0.677$. Meanwhile, the working environment variable scored at $r=0.449$. Therefore, the reliability is satisfactory for all the variables.

	Working Environment	Victim's Attitude	Power	Sexual Harassment
Working Environment	1	.382**	.251*	.447**
Victim Attitude	.382**	1	.526**	.182
Power	.251*	.526**	1	.201
Sexual Harassment	.447**	.182	.201	1
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

Table 8: Pearson Product-Moment Correlation Coefficient

Table 8 shows the relationship coefficient between independent variables and independent variable itself, including working environment, power and victim's attitude, and also these independent variables with dependent variable of sexual harassment. Among all of the variables tested showed a positive relationship. The strongest relationship of independent variable with dependent variable is between working environment with sexual harassment (0.447), followed by power with sexual harassment (0.201) and victim's attitude with sexual harassment (0.182).

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-0.157	1.706		-0.092	0.927
Working Environment	0.476	0.121	0.436	3.941	0.000
Victim's Attitude	-0.037	0.102	-0.045	-0.360	0.720
Power	0.101	0.105	0.115	0.962	0.339

Table 9: Multivariate test

The F statistic for the overall goodness of fit of model is 6.728, which is significant at $\alpha = 0.01$. After excluding the non-significant variable, the final regression model produced by enters method for sexual harassment is:

$$\text{Sexual Harassment} = -0.157 + 0.476 (\text{working environment}) + 0.101 (\text{power})$$

$$R \text{ square} = 0.210, df = 3, F = 6.728 ; p = 0.000$$

This model explains 21% of the variance in sexual harassment. This indicates that 21% of the dependent variable (sexual harassment) was explained by the linear combination of the two-predictor variable. Among the two-predictor variable, working environment was found to contribute more significantly towards the sexual harassment experience.

Hypothesis	Statement	Findings	Result
H ₁	There is a significant relationship between the summed score of working environment and sexual harassment.	p = 0.000 p < 0.05	Hypothesis Accepted

H ₂	There is a significant relationship between the summed score of victim's attitude and sexual harassment.	p = 0.720 p > 0.05	Hypothesis Rejected
----------------	----------------------------------------------------------------------------------------------------------	-----------------------	---------------------

H ₃	There is a significant relationship between the summed score of power and sexual harassment.	p = 0.339 p > 0.05	Hypothesis Rejected
----------------	----------------------------------------------------------------------------------------------	-----------------------	---------------------

Table 10: Result of Hypothesis Testing

Table 10 shows the summary result of the hypothesis testing for this study. In the hypothesis testing, the p value of the hypothesis is significant, where p value < 0.05. For the entire above stated hypothesis, H1 was accepted while H2 and H3 were rejected. This indicated that working environment factor (p=0.000) is highly significant with the sexual harassment experience among working adults in KL. H2 and H3 were rejected because the sample size was too small. Moreover, the respondents were from a homogenous group which shared the same culture.

5.0 CONCLUSION

This research study aims to understand the factors that contribute towards sexual harassment experience amongst the working adults in Kuala Lumpur. Few studies had been conducted in Chapter Two: Literature Review had found the significant factors of sexual harassment experience towards the experience amongst the working adults in Kuala Lumpur. Furthermore, this research study also investigated how these determinants (working environment, victim's attitude, power) contributed towards the sexual harassment experience. In addition, despite looking into the determinants of the variable, demographic is also part of the research contents. Although, initially the respondents were included in the research framework and were removed in the later research on going. Due to the sampling methodology used, specific demographic profiles such as years of employment, gender, marital status and age need to be included as part of the research design.

Furthermore, numerous tests had been conducted to find out the relationship of each determinant toward the dependent variable. As in, Pearson Product-Moment Correlation Coefficient test, found all of the determinants had a significant relationship towards the sexual harassment experience. While Multiple Regression Test is also conducted, found that the working environment achieved the highest score and the strongest predictor of the sexual harassment experience, it then followed by power as the second predictor towards the sexual harassment experience. While victim's attitude remains as the variable that had significant value and relationship towards the sexual harassment experience.

CITATION AND REFERENCES

- Allgeier, E. R., & McCormick, N. B. (1983). *Changing boundaries: Gender roles and sexual behaviour*. Palo Alto, CA: May field
- Buchanan, N. T., Settles, I. H., Hall, A. T., & O'Connor, R. C. (2014). A review of organizational strategies for reducing sexual harassment: Insights from the U.S. military. *Journal of Social Issues*, 70, 687-702.
- Challapalli, C., S., (n.d.), Sexual Harassment of Women at Workplace, Retrieved from https://www.academia.edu/10173222/SEXUAL_HARASSMENT_OF_WOMEN_A_T_WORKPLACE?
- Gruber, J. E., Smith, M., & Kauppinen-Toropainen, K. (1996). *Sexual harassment types and severity: Linking research and policy*. In M. S. Stockdale (Ed.), *Sexual harassment in the workplace: Perspectives, frontiers, and response strategies* (pp.151–173). ThousandOaks, CA: Sage.
- Howald, N., Walker, J., & Melick, S., (2018), Addressing sexual harassment in the workplace, 1-14, Retrieved from <http://www.infocoponline.es/pdf/ACOSOSEXUALLABORAL.pdf>
- McDonald, P. (2012). Workplace sexual harassment 30 years on: A review of the literature. *International Journal of Management Reviews*, 14, 1-17.
- O'Hare, E., & O'Donohue, W. (1998). Sexual harassment: Identifying risk factors. *Archives of Sexual Behavior*, 27(6), 561-579.
- Pina, A., Saunders, B., & Gannon, T. A. (2009). An overview of the literature on sexual harassment: Perpetrator, theory, and treatment issues, *Aggression and Violent Behavior*, 14(2), 126-138.
- Tangri, S., & Hayes, S. (1997). *Theories of sexual harassment*. In W. O'Donohue (Ed.), *Sexual harassment: Theory, research, and treatment* (pp. 112–128)
- Theories of Workplace Sexual Harassment, (2011). Retrieved from <https://www.endvawnow.org/en/articles/509-theories-of-workplace-sexual-harassment.html>

The US-China Competition: Industrial Chain and the Future of Systemic Great Power

Huang Jie¹, Yee Choy Leong^{2*} and Fang Fang³

Universiti Putra Malaysia (UPM), Malaysia

Correspondence Author's email address: *Yee@upm.edu.my, gs61176@student.upm.edu.my

ABSTRACT

The global supply chain system driven by U.S.-China strategic competition faces a new contraction, adjustment, and reconstruction pattern. Facing the current possible development directions such as "limited globalisation", "de-globalization", and "de-China-ization", the global supply chain system, especially the role of China in supply chain engagement, will become more and more uncertain. From the perspective of China's response, this paper proposes several key response strategies and presents a win-win alternative for developing countries.

Keywords: Global Supply Chain, Industrial Chain, Dual Circulation, US-China Competition

1 INTRODUCTION

In March 2018, then-President Trump demanded tariffs imposed on goods imported from China based on "China's theft of US intellectual property and trade secrets," involving an estimated \$60 billion in goods (Nytimes.com, 2018). It is the beginning of the US-China trade dispute (USTR, 2018).

Since then, the US has launched a technology blockade policy against Chinese high-tech companies headed by Huawei and ZTE (Mascitelli & Chung, 2019). It denotes that the US and China have entered a period of comprehensive strategic collision. Not only do they compete with each other in economics, but also technological innovation (Wang & Zeng, 2020).

The devastating and ongoing effects of COVID-19 is strengthening resolve in the United States to consider ways to entrench 'economic distance' from China. Even with Biden in the White House in 2021, that sentiment remained. US authorities raised the 3Ds rhetoric of Diversify, Disentangle and Decouple of supply chains (Lee, 2020).

In March 2021, only 45 days after Biden was elected, the "Interim National Security Strategy Guidance" was released. The "Guidance" is the first draft and framework of the Biden administration's National Security Strategy Report (Biden Jr, 2021).

The US Secretary of State Blinken delivered his first foreign policy speech on the same day that the "Guidance" came out. He listed China as the most significant geopolitical threat of the century. He argued that China could continuously challenge a stable and open international order. Whether in economy, diplomacy, military or science and technology, China has become a big power with the comprehensive application of these capabilities (USAGov, 2021).

The US government has put forward the concept of "The Great Power of Systemic". The US government has tagged the label on their perception towards China, and it also shows that the US-China trade war has entered a stage of systemic competition (Korkmaz & Turan, 2021). The supply chain plays a significant role in this systematic competition between the US and China.

Intel's announcement at the end of 2021 that it would ban products from Xinjiang altogether was a harbinger of "multinational involvement in geopolitical disputes between China and the United States" that would be repeated in the coming years. The US will try to curb China's development by frequently disrupting the supply chain (SWP, 2021).

"How to reduce the dependence of the American manufacturing industry on China" has become the most core political policy of the US. According to that, the "de-China-zation" of global industrial and supply chains has become irreversible (Liu, 2021).

Last five years, the relationship between U.S.-China has changed unpredictably (Shangguan & Seow, 2022). Although, several scholars have offered their perspectives on the game between the great powers of the US and China from the viewpoint of geopolitics (Lee et al., 2018; Wong, 2021), economic development (Pop & Grigoraş, 2021), and trade disputes (Tyers & Zhou, 2021; Wang et al., 2021). Nevertheless, few researchers from the industrial chain layout try to understand the confrontation between the two countries. Some scholars are willing to pay attention to the suppression and policy adjustment of the US against China, but few researchers observe how China finds a way out of a stalemate (Jin et al., 2021). Scholars focus on the U.S.-China trade gap but fail to systematically review China's "alternatives" (Jeong & Lee, 2021).

Considering the above, the analytical framework is shown : First, it critically reviews the unstable development status. It states the strategies and changes of their respective industrial chain layouts in the past two years from the perspectives of the United States and China. Then from the perspective of China, the current situation and possible development direction of China's industry are analysed through the dual-cycle model. Finally, emerging trends are illuminated by assessing comments from policy practitioners and policy elites, as well as critical signals of changes in government policy.

2. Re-definition of Supply Chain Management

Supply chain management (SCM) was first proposed in the early 1980s. It only focused on logistics management at first (Houlihan, 1985). With the gradual development of economic globalisation, SCM becomes more and more complex (Zhu & Sarkis, 2004).

Yee and Tan (2004) defined Supply Chain Management as integrating other management functions and business processes across organisational boundaries. He stated that a supply chain is not a single business unit anymore but also can be a network.

However, the traditional definition of supply chain management is static (Zamboni et al., 2009). The dynamic environment is not considered (Gammelgaard & Flint, 2012). After the 2010s, more and more scholars have begun to analyse the supply chain from a dynamic perspective (Fahimnia et al., 2015; Kazemi et al., 2019; Khan et al., 2021). Putting the supply chain into a dynamic environment for analysis, how the supply chain works as a system and to be a key factor affecting the dynamic development, and controlling it has become a remarkable new insight from recent policymakers and scholars (Wieland, 2021).

Since the trade war between the US and China began in 2018, supply chain management has become more and more changeable. Numbers of enterprises adopt new supply chain management strategies

to counter geopolitical risks (Choi, 2021; Sodhi & Tang, 2021). The supply chain no longer only pursues resources, low prices and high efficiency, and stability becomes a more urgent demand (Bui et al., 2021). Some scholars put forward the concept of Supply Chain Diversification.

2.1 Supply Chain Diversification

Supply Chain Diversification means that countries or companies manage the risks in the supply chain by using multiple suppliers simultaneously (McMaster et al., 2020). It is a risk-prevention action to prevent over-reliance on some countries or companies as a significant supplier (Zhou et al., 2020). Diversification of supply chains does not necessarily lead to disentangle or to decouple. However, before attempting to disentangle or decouple from suppliers, it must diversify its supply chain system (Lin et al., 2021).

Supply chain diversification can reduce a company's dependence on critical suppliers, but also adds complexity to its management (Handfield et al., 2007). Supply chain diversification is a big challenge to the coordination ability of enterprises. Insufficient coordination ability will reduce enterprises' judgment on the sustainability of the supply chain and even affect the ability of enterprises to respond after the chain is disconnected (Hwang & Min, 2015). To make up for this lack of capacity, companies need to increase additional efforts and investment in personnel and resources to coordinate with more suppliers and customers (Choi & Krause, 2006), meanwhile, communication to different regions and cultural backgrounds will generate more time and costs.

Furthermore, larger customer bases and more complex supply nodes require higher information processing capabilities (Pereira et al., 2014). All of the above will lead to a geometric increase in the number of information flows, physical flows, and relationships (Rushton et al., 2022). When there is a risk of chain breakage, companies with multiple suppliers and customers need multiple interfaces to arrange transportation, and the secondary risk also increases several times (Katsaliaki et al., 2021). In short, to diversify supply chains, companies will pay an additional price to increase their information processing capabilities (Srinivasan & Swink, 2018), especially during a pandemic with a highly volatile and uncertain environment (Ozdemir et al., 2022). Also, failure to coordinate with suppliers can affect production schedules, lead to related issues such as inconsistent product quality, and require additional effort.

2.2 Disentangle Supply Chain

After China promulgated the "Made In China 2025 (MIC2025)" (Gov, 2015), the US recognised that China had become a significant actor in power, authority, and wealth distribution in today's world (Regilme Jr, 2019). It is not difficult to find from Figure 1 that in the past 20 years, Global trade power has been quietly shifting. China has become a competitor that the U.S. cannot be ignored. According to data released by Knoema (2020), among countries in the world, only the U.K., France, Canada, and Mexico currently have more trade with the U.S. than with China. There are statistical errors in the trade between "U.S.-India" and "China-India". China has gradually taken the lead in the trade volume with the economies of various countries.



Figure1. US-China as a Global Trade Power Compare

Data from Knoema Data Hub Catalog 2022. Retrieved from

<https://cn.knoema.com/infographics/hxkevje/global-economic-trends-us-overtaken-by-china-as-a-global-trade-power>

In White House’s latest report on building resilient supply chains to revitalize U.S. manufacturing, they propose a new approach: reducing reliance on China by disentangling the Chinese element in the supply chain. The report emphasizes that Chinese components in supply chains need to be stripped away, especially in important technological and strategic areas like semiconductors. It is necessary to prevent China from becoming stronger. At present, the required technical areas that need to be separated include Semiconductor manufacturing and advanced packaging, large capacity batteries, Critical minerals and materials, and Pharmaceuticals and active pharmaceutical ingredients (APIs) (House, 2021). However, the definition of such areas will continue to expand (Lee, 2020).

Although more scholars regard supply chain disentangling as a preventive risk management method, it is also a precursor of decoupling. Especially in the current situation between China and the United States, decoupling means that decoupling will become possible.

2.3 Decouple Supply Chain

Supply chain decoupling represents the last step of the 3Ds strategy and the successful diversification and disentangling of the supply chain. Decoupling implies a complete split from China in the supply chain or sector (Lee, 2020).

However, until 2021, China still takes the top 1 import by country and over Vietnam (Top2 country) almost 35.2%. See Figure 2 as follows.

U.S. Imports by Country | 2021

Country	Percent of U.S. Imports	Number of U.S. Imports
China	41.5%	3,139,939
Vietnam	6.3%	474,305
India	4.8%	359,675
Germany	4.0%	301,815
Taiwan	3.3%	249,465
South Korea	3.3%	248,959
Italy	3.1%	236,731
Japan	2.4%	182,636
Thailand	1.9%	145,421
Belgium	1.8%	136,298
Spain	1.6%	119,431
Indonesia	1.5%	116,989
Brazil	1.4%	107,471
Hong Kong	1.4%	107,428
Mexico	1.4%	105,763
Malaysia	1.1%	84,990
France	1.0%	77,469
United Kingdom	1.0%	76,557
Everywhere Else	17.2%	1,298,985

All countries with 1%+ of global imports of the U.S. between January 1 and June 30, 2021 shown. See Methodology for more and contact Jungle Scout for the complete list.

Figure 2. U.S. imports by country in 2021.
Adapted by JungleScout (2021), Global Imports Report 2021

Figure 3 shows the trend of US imports from 2015 to the first half of 2021. The top 10 countries have consistently captured ~70% of the total share of importance to the U.S. since 2015, with China accounting for about 40% of the entire claim. Although, the percentage of U.S. imports has fluctuated in recent years, with Vietnam consistently gaining share and India bouncing back from a challenging 2020. Compared to early 2020, India, Vietnam, and Italy are the countries that increased their share of total U.S. imports the most. Australia, New Zealand, and Canada experienced declines during this same period (JungleScout, 2021).

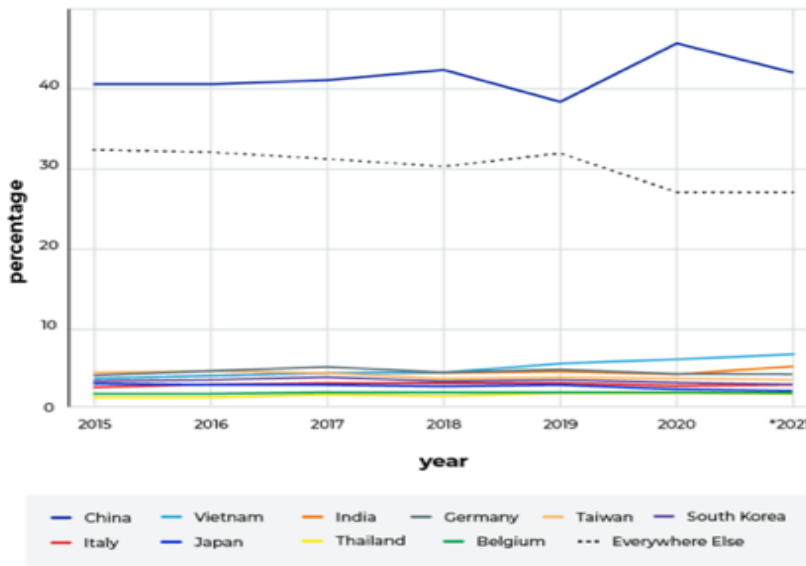


Figure3. Share of U.S. Imports by Country between 2015 and 2021.
Adapted by JungleScout (2021), Global Imports Report 2021

However, among the top ten importing countries and regions, China has always been at an absolute advantage, which also made the U.S. authorities see the vulnerability of its supply chain and put forward the concept of "de-China-ization" in early 2021.

2.4 De-China-ization

A 250-page supply chain analysis report released by the White House in early 2022 pointed out that five drivers lead to the fragility of the U.S. supply chain (House, 2021).

2.4.1 Insufficient manufacturing capacity

After the 21st century, the manufacturing capacity of the United States is declining. Between 2000 and 2010, nearly one-third of manufacturing jobs were replaced by low-wage countries (Bonvillian, 2017). Economists in the United States have estimated that about 25% of unemployment can be attributed to China's rise, especially after China accedes to the World Trade Organization (David et al., 2013). However, productivity growth in the United States is also not optimistic, with most industries lagging Germany on average (Baily et al., 2020). In the United States today, many small and medium-sized manufacturers do not invest enough in new technology to increase productivity. Contrary to popular belief that "robots are coming", the loss of manufacturing capacity in the United States has resulted in a loss of innovation (Pisano & Shih, 2012). Once innovating is lost, it is not easy to rebuild. When production capacity goes overseas, R&D and the wider industrial chain often move overseas as well.

2.4.2 National policies and current trends

In 2019, the European Union announced a research and development investment of up to 3.5 billion US dollars to stimulate the production of lithium batteries for electric vehicles. It is the strategic plan adopted by the EU to improve its internal competitiveness after the US investment in the domestic industrial base has declined. As the world's most advanced semiconductor chip production area, Taiwan provides companies with subsidy policies, including 50% of land costs and 45% of construction and facilities. Likewise, semiconductor subsidies in South Korea and Singapore have

also reduced the cost of facility ownership by 25-30%. China's promotion policy stands out among other countries. Stimulate domestic production and stimulate the landing of critical supply chains in China (House, 2021).

2.4.3 The rely of the U.S.

Globalization used to be a good option for keeping supply chains resilient. However, on the road of globalization, companies blindly seek to reduce costs and improve efficiency, combined with the incentive policies of relevant countries, resulting in the current geographical concentration of supply chains in a few countries. Such centralization would make U.S. and global manufacturing companies vulnerable.

Whether it is a global pandemic like covid-19 or a geopolitical event, it will easily cause a chain-broken crisis. The United States relies heavily on specific countries and regions in specific industries: 92% of cutting-edge semiconductor production relies on Taiwanese companies. More than 75% of battery manufacturing comes from China. Although India and China are vying for market share in U.S. pharmaceuticals, nearly 70% of India's APIs are imported from China.

Accordingly, the White House proposes the following recommendations to address the short-, medium- and long-term supply chain problems encountered by the United States and make corresponding countermeasures to maintain a distance from China. 1. Reinvigorate the US manufacturing industry by reshaping the supply chain to ensure the production and innovation capabilities of US companies; 2. Through cooperation with allies, reduce the Chinese element in the supply chain to reduce the vulnerability of the global supply chain; 3. Continue to invest and increase incentive policies, and play the role of the government as a market player, so that the US supply chain can gain a firm foothold.(House, 2021).

3. Reshaping the supply chain: what we will gain ?

The above chapter describes the White House's analysis, attitude, and plans which are already underway or in the pipeline. It will have a significant impact on the global supply chain, and the reshaping of the global supply chain will be irreversible.

However, the reshaping of supply chains is a strategic crackdown by the US in response to China's rise. In essence, the comparative economic scale between the United States and China has reached a critical turning point. It is the inevitable result of the actual collision of the comprehensive national development capabilities of the U.S. and China (Shangguan & Seow, 2022). However, it has caused great shocks and oscillations to the world economy and many multinational corporations.

3.1 Re-layout of the industrial chain

At present, this extreme and unilateral trade protectionism in the United States will inevitably be transmitted from the field of investment to the area of trade. The resulting negative effect is that emerging countries and developing countries have fully stimulated their awareness of investment barriers and trade barrier protection in high-end consumer markets. Emerging countries and developing countries have more substantial incentives to promote the independent innovation ability of local enterprises (Zheng et al., 2021). On the other hand, when the U.S. and other western developed countries implement trade protectionism, populism will gradually increase or even explode. Developed and developing countries' populism and trade protectionism will form a fierce confrontation. Under such a trend, the scale of global trade is bound to be severely impacted and shrink sharply. The export market of traditional manufacturing in developing countries will face highly fierce competition. A further drop in profits could trigger deeper populism. The willingness of developing countries to participate in global supply chains will also be further dissipated. Such

negative behaviour will further aggravate the contraction and reconstruction of the global supply chain system. Regional supply chains or joint supply chain systems will become the trend (Tsai et al., 2021).

The exclusive regional trade system formulated by the United States, Canada, Mexico, and other countries has made all countries realize that a balanced game pattern between regions can maximize development benefits (Vu et al., 2021).

The global supply chain system may be gradually decomposed into regional supply chain systems such as Europe, North America, and Asia (Bui et al., 2021). This regional supply chain system and more prominent regional boundaries will make deglobalization possible. Therefore, the industrial chain will also follow the trend of the supply chain to further regionalize (Pla-Barber et al., 2021).

3.2 Reshuffle in the global industrial chain

The seller and buyer countries have formed an interdependent and mutually restrictive interest game pattern in the original global supply chain division of labour and trade system. Take Huawei mobile phones as an example: developed countries use their leading advantages in scientific and technological innovation to create and produce all kinds of advanced production equipment, critical spare parts and critical materials with high-tech innovation content and export them to China. Chinese enterprises Huawei use advanced production equipment from developed countries. Essential spare parts and materials are assembled and manufactured to produce mobile phones or other terminal products, exported to the markets of developed countries and other developing countries to form a global circular system dominated by the division of labour and trade system of development and industrial chain. More importantly, in the worldwide supply chain division of the labour and trade system dominated by the form of "developed countries sell → developing countries buy + developing countries sell → developed countries buy", there is an interdependent and mutually restrictive benefit game and symbiotic pattern between developing and developed countries. Specifically, the "sale" of developed countries and the "purchase" of developing countries are formed in the links of critical spare parts and advanced production equipment with high-tech content.

In contrast, the "purchase" of developed countries and the "sale" of developing countries are formed in the final commodity link of assembly and are mutually beneficial. Win-win trade and benefit cycle mechanism is formed between them (Hauge, 2020).

However, the "U.S. priority" and a series of actions taken by the U.S. against China have broken the balance naturally created by the market (Boylan et al., 2021). Therefore, the interest distribution pattern in the global value chain system will inevitably undergo significant adjustment and reconstruction under the impact of U.S.-China strategic competition. Then it directly leads to the reshuffle and distribution of the industrial chain.

3.3 The impact of different countries

The U.S. ban on Huawei has dealt a fatal blow to the global supply chain system of Chinese high-tech companies. This in turn undermines China's leading position in the global supply chain system. It may even curb the continued rise of the Chinese economy (Kwan, 2020). Therefore, many countries believe that China is the biggest victim of the contraction and reconstruction of the global supply chain system.

However, from the perspective of China's unique comprehensive advantages and deepening opening-up strategy, China is not the biggest victim of this round of contraction and reconstruction of the global supply chain system. Instead, the main victims are Germany and Japan, India, and Vietnam.

Developed economies such as Germany and Japan, which are highly dependent on exports, will undoubtedly become one of the biggest victims of the contraction and reconstruction of the global supply chain system (Mendoza, 2020). Because, as the main beneficiaries of the global supply chain system, Japan and Germany will inevitably suffer considerable losses in the pattern of benefit distribution in the global value chain as long as the existing global supply chain system shrinks and adjusts.

On the other hand, developing countries such as India and Vietnam, which only rely on the advantages of low-cost labor and try to obtain economic development opportunities through export-oriented strategies, will also become prominent development stakeholders in economic contraction and reconstruction. Global supply chain system. In the strategic thinking of India, Vietnam and other countries, the strategic competition launched by the United States against China has brought additional strategic opportunities for these countries to develop manufacturing industries. Therefore, choosing to follow the U.S.'s strategy of challenging China during this critical period can gain tolerance and concessions from the U.S. in occupying China's market share in the global supply chain system. However, the U.S. strategic motivation and core goal is to use import restrictions to expand U.S. exports to solve the dilemma of underemployment and sluggish income growth among the U.S. middle class. Countries such as India and Vietnam cannot import a large amount from the United States, so they will not gain continuous export opportunities and trade surplus space to the United States. On the contrary, the most important thing for the contraction and reconstruction of the global supply chain system is to completely block the space for large developing countries such as India to use the existing global supply chain system to obtain opportunities for export-oriented development. Moreover, the destructive reconstruction behavior strategy of the United States driven by the current global supply chain system and value chain system is bound to stimulate and affect the most fundamental development opportunities and development interests of many other developed countries, large developing countries, and small and medium-sized countries. Large-scale developing countries, the resulting chaos and complex game state, as well as rebound and confrontation effects, are likely to exceed the imagination and control of the U.S. itself (Fajgelbaum & Khandelwal, 2021).

4. From China's perspective :

4.1 "de-China-ization" or "de-U.S.-ization"

From the current situation, the worst of the competition between the U.S. and China may lead to the "de-China-ization" of the global supply chain system (Liu, 2021). It will seriously damage the external environment for China's economic development. However, given the current interdependence of the supply chain between the U.S. and China, the consequences of "de-China-ization" may also mean the occurrence of "de-U.S.-ization".

The leading advantage of the U.S. in the global supply chain now lies in the benign development mechanism that the high-tech multinational companies in the U.S. have formed: 1. Continued massive investment in research and development, and 2. The innovative high rate of return brought by occupying the global high-end consumer market (Bhidé, 2009).

Take the integrated circuit industry as an example. In the past ten years, the investment in the R&D of the integrated circuit industry in the United States was 312 billion U.S. dollars, and it reached 39 billion U.S. dollars in 2018 alone (Matyushok et al., 2021).

In 2018, the global product revenue of the U.S. integrated circuit industry was about \$226 billion, twice that of South Korea, five times that of Japan, six times that of Europe, and 15 times that of China (Hart, 2018).

High income is the premise of maintaining high innovation input. However, the market size of the U.S. integrated circuit industry, the U.S. domestic market only accounts for less than 25%, while China accounts for 23%. In the long run, "de-China-ization" will eventually weaken the virtuous cycle mechanism in massive R&D in U.S. hi-tech areas (Grimes & Du, 2020).

Based on China's national conditions, the technological blockade of the U.S. is likely to force and accelerate China's independent rise in the field of international technological innovation and strategic emerging industrial systems. In China's latest 2035 plan promulgated; the government has given a particularly active response to the current blockade of 35 key core technologies (Harold & Kamijima-Tsunoda, 2021). If this U.S.-China game falls into a long-term confrontation, "de-China-ization" will likely turn into "de-U.S.-ization".

4.2 China proposes a new option of " dual circulation "

The "dual circulation" development pattern is not to exclude opening-up and generalise the national system but to consolidate, improve and cultivate internal skills under the environment of poor external circulation (Javed et al., 2021).

It is a countermeasure for the U.S. to contain China's rise. In the short term, it relies on the domestic consumption of the super-large population, and in the long term, it relies on the continuous R&D of enterprises to achieve technological breakthroughs. It combines the reconstruction of the global supply chain with the adjustment of the domestic economic structure to find an exemplary method for import substitution and technological breakthroughs.

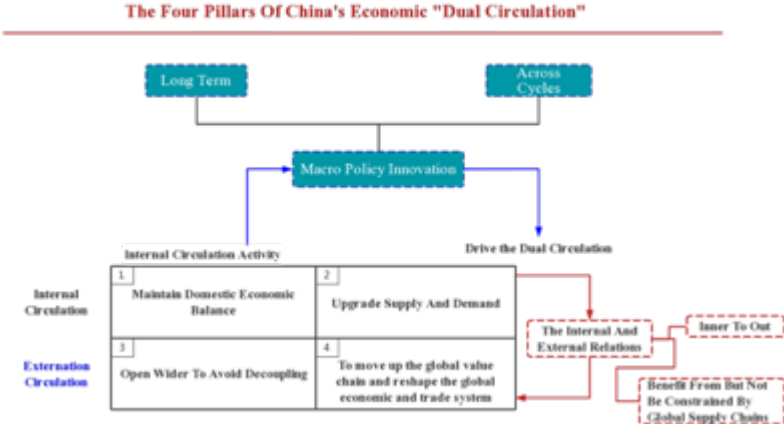


Figure 4. The four pillars of Dual Circulation. Own Work.

Recently, the Chinese government has frequently mentioned accelerating the formation of a new "dual circulation" development pattern. The proposal of "dual circulation" as the most critical governance strategy is by no means accidental. It is a significant judgment made by the central government based on the current more severe international environment and domestic situation that may last for a long time. It is determined by various constraints encountered by chance (Yifu & Wang, 2021).

Figure 4 shows the apparent logical chain behind it is: Based on the significant changes, facing the medium and long term, and based on the protracted war, form a "dual circulation", which should not only solve the problem of poor circulation of domestic demand but also solve the problem of "neck sticking" in the core technology field through greater openness and independent innovation.

In short, the "dual circulation" is a comprehensive system of both passive defense and active attack under the situation of "de-globalisation" and the increased risk of "decoupling" between the U.S. and China. It is a comprehensive measure of "passive response" + "active planning". Also, a response to China and the U.S. in science technology Partial "decoupling" in the economic and trade field is the core of the pressure.

4.3 Connotation of "dual circulation"

Build a domestic circulation based on domestic demand. The domestic cycle is in the dominant position, which is the basis and guarantee of the international process. It is a system aimed at solving economic security. From the perspective of the four links of production, distribution, exchange, and consumption in the economic cycle, unblocking the domestic process requires opening the connection mechanism between income distribution and circulation exchange and organically combining production and consumption. We should support the vast domestic market demand through solid production capacity and feedback the production transformation and upgrading through the enormous domestic market volume; Through the reform of income distribution, we will develop productive social forces and stimulate market vitality.

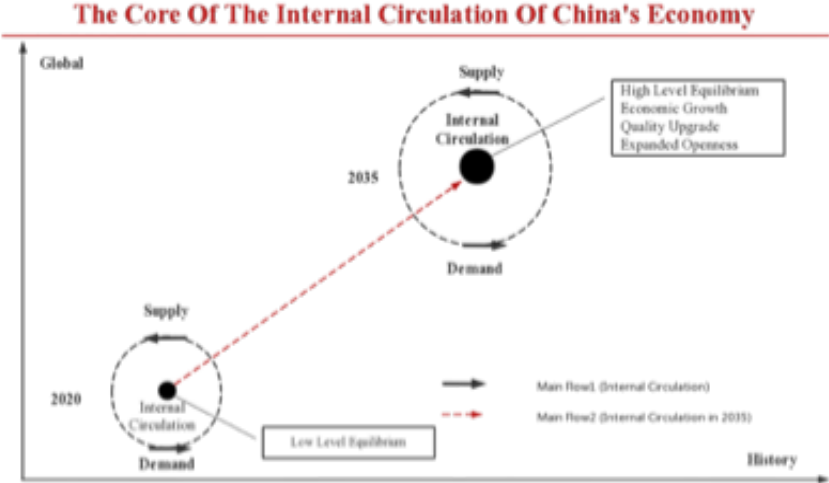


Figure 5. The core of the internal circulation of China. Own Work.

The dual circulation focuses on domestic processes and promotes international circulation. The National Development and Reform Commission emphasized that over the past 40 years of reform and opening, China has deeply integrated into the East Asian financial system and the global economic system, and its comprehensive economic strength has been significantly enhanced (Bi & Zhang, 2021). Its participation in the global economy has steadily increased and it has become a connecting hub for the value cycle of major economies around the world. Global circulation is the extension and supplement of domestic circulation (Lin, 2021).

The Core Of The External Circulation Of China's Economy

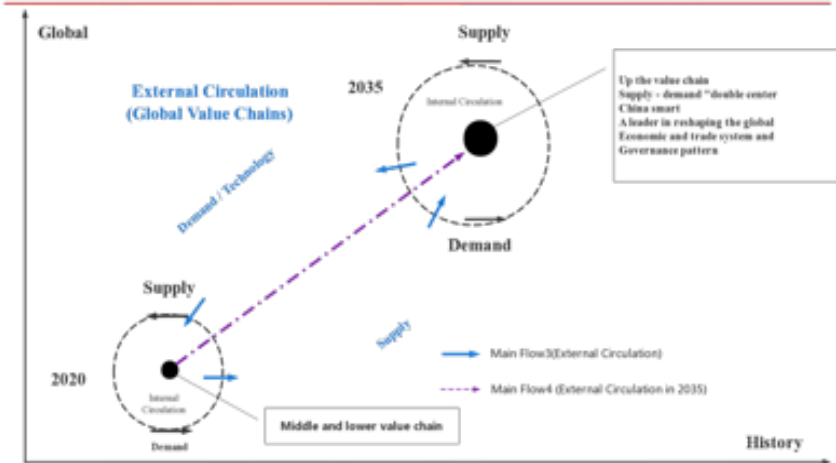


Figure 6. The core of the external circulation of China. Own Work.

So far, more than 163 countries and regions in the world have relations with China through the trade of final consumer goods or intermediate products (Wu et al., 2021). Therefore, in addition to insisting on expanding domestic demand, China also needs to further expand its high-level opening to the outside world. Support the "external circulation" with the "internal circulation" and accelerate the formation of a new development pattern in which the domestic and international dual circulations promote each other.

With the intensification of the anti-international globalization trend and the intensification of the negative impact of the epidemic, China and even the global industrial chain and supply chain have exposed problems such as the disconnection of production, supply, and marketing, and the asynchronous upstream and downstream, reflecting the insecurity, instability and fragility of the world production system (Sodhi & Tang, 2021).

Therefore, China urgently needs to give full play to the super-large-scale processing and manufacturing system and the potential of the domestic market, based on the two major market advantages of domestic production and consumption, and gradually build a mutually beneficial domestic and international dual- circulation mechanism (See as Figure7).

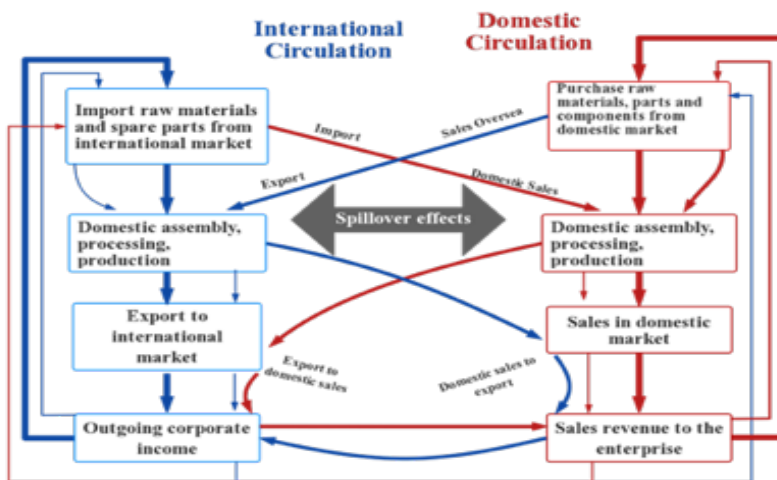


Figure 7. International-Domestic dual circulation (Own work).

5. Conclusion

5.1 China's coping strategy and its key strategies

First, avoid falling into the trap of treating strategic thinking with tactical thinking, and try to trade the concessions and compromises of various short-term interests for the United States to stop or reduce its strategic intention to curb the improvement of China's independent ability of scientific and technological innovation. As a unique, developing country like China, entirely relying on the existing global supply chain system and its export-oriented development strategy can only promote China's transformation from a low-income country to a middle-income country; Relying on the two-way virtuous circle mechanism between China's colossal scale and upgraded domestic demand market and the sustainable improvement of independent innovation ability, it is possible to promote China to continue to develop from a middle-income country to a high-income country. For China at a specific stage, appropriately reducing its dependence on the low-end links of the global supply chain system may be more conducive to implementing China's domestic demand-driven development strategy and the overall transformation and upgrading of its economic structure. In other words, the blockade and containment strategy of scientific and technological innovation launched by the United States against China may not fundamentally cause actual damage to China's core development interests, and the core task facing China is to promote the formation and strengthening of the domestic demand-driven development model as soon as possible.

Second, give full play to the dual incentive role of the government and the market, fully implement the new national system, achieve a comprehensive breakthrough in the critical core technological innovation restricting the current and future essential industrial chains and strategic emerging industrial approach as soon as possible, and ensure the global competitiveness of China's industry and national security. The comprehensive technology blockade and containment strategy launched by the United States against China's local high-tech multinational enterprises have had a significant impact on the safety of China's critical industrial chain and strategic emerging industrial system in the short term, forcing China to implement a comprehensive independent breakthrough strategy in the required core technology innovation fields of key industrial chain and strategic emerging industrial system at present and the future.

At present, China's continuous investment in basic research applied basic research, original innovation, disruptive technological innovation, advanced production equipment, critical spare parts, and critical materials at the national and enterprise levels is insufficient, resulting in a severe lack of independent ability in the field of crucial core technological innovation in key industrial chains and strategic emerging industrial systems. Therefore, the strategy to resolve and crack the national security risks of China's industrial chain and product chain should be to make use of China's unique government and market mechanism, organically integrate the system, actively implement the new national strategy, and focus on the critical core technological innovation fields related to China's economic security. On the one hand, in line with the principle of fair competition, the state must make full use of and encourage institutions of higher learning and government-affiliated scientific research institutions to form interdisciplinary, interdisciplinary and interdisciplinary cutting-edge research teams in basic research, applied basic research, original innovation and disruptive technological innovation. Through the sustained massive investment of the government, we can encourage these areas to focus on tackling critical problems. On the other hand, by deepening the integration system of industry, University and research, tax reduction and exemption policies, preferential listing and financing policies, and various enterprise research funding plans given by the government based on the principle of market competition, we can mobilise and encourage enterprise departments to invest in high-intensity and sustainable research in advanced production equipment, essential parts and components and critical materials, to form a micro-enterprise led New joint research teams and enterprise groups strongly supported by the government.

Third, go beyond the simple dichotomy of state-owned enterprises and private enterprises, give full play to the synergy of state-owned enterprises and private enterprises in China's current and future critical industrial chains and strategic emerging industrial system, especially grasp their joint role in breaking the "neck" of key core technological innovation restricting key industrial chains and strategic emerging industrial approach. In particular, we should pay attention to the essential role of joint-stock enterprises in China's market competition mechanism. The United States and some western developed countries accuse China of violating the WTO market fair competition mechanism. One focus is state-owned enterprises. Therefore, how China scientifically defines the essential position of state-owned enterprises in the national economy and scientifically considers the specific expression of public ownership in China is not only related to the practical form of China's basic socialist principles but also related to China's essential positioning of how to adhere to the strategy of deepening opening to the outside world and further integrate into the global system. From the perspective of improving the independent ability in the field of crucial core technological innovation that restricts China's current and future critical industrial chains and strategic emerging industrial system, as well as China's comprehensive strategic task of building an innovative country, we must also have a new understanding of the expression form and strategic positioning of state-owned enterprises. On the one hand, we should take the initiative to give full play to the synergy between state-owned enterprises and private enterprises in China's current and future critical industrial chains and strategic emerging industrial system, especially in the field of breaking the "neck" key core technological innovation restricting key industrial chains and strategic emerging industrial strategy. On the other hand, it is necessary to go beyond the current simple dichotomy between state-owned enterprises and private enterprises, strengthen the essential position of joint-stock enterprises held by the whole people in China's public ownership, take the initiative to make use of the direct channel financing mechanism of listed enterprises, and truly solve the breakthrough of enterprises in the implementation of basic research, applied basic research and critical core technology innovation, And the dilemma of short R & D investment in advanced production equipment, necessary spare parts, essential materials and core processes.

At present, the attitude of the United States towards China is a competitive, life and death, zero-sum game strategy. China is trying to achieve a peaceful rise and hopes to make a steady leap forward through a win-win policy. This contradicts the idea of the United States. In the next few years, the most challenging problem for enterprises, especially multinational enterprises, is how to find their own living space among big countries. The United States is inevitably far more robust than China in the field of high-end science and technology, and China's manufacturing capacity and efficiency in the middle and low end are unmatched by any country. It isn't easy to occupy dividends on both sides as a multinational company in two or three years. Only cause the lowest loss by reorganising the supply chain layout.

CITATION AND REFERENCES

- Baily, M. N., Bosworth, B., & Doshi, S. (2020). *Productivity Comparisons: Lessons from Japan, the United States, and Germany*. Brookings Institution. January 22.
- Bhidé, A. (2009). The venturesome economy: How innovation sustains prosperity in a more connected world. *Journal of Applied Corporate Finance*, 21(1), 8-23.
- Bi, J., & Zhang, Z. (2021). Prioritizing the Domestic Circulation to Establish a New Development Paradigm. *China Economic Transition= Dangdai Zhongguo Jingji Zhuanxing Yanjiu*, 4(1), 17-31.
- Biden Jr, J. R. (2021). *Interim National Security Strategic Guidance*.
- Bonvillian, W. B. (2017). *US manufacturing decline and the rise of new production innovation paradigms*. OECD Paris, France.
- Boylan, B. M., McBeath, J., & Wang, B. (2021). US-China relations: Nationalism, the trade war, and COVID-19. *Fudan Journal of the Humanities and Social Sciences*, 14(1), 23-40.
- Bui, T.-D., Tsai, F. M., Tseng, M.-L., Tan, R. R., Yu, K. D. S., & Lim, M. K. (2021). Sustainable supply chain management towards disruption and organizational ambidexterity: A data driven analysis. *Sustainable production and consumption*, 26, 373-410.
- [Record #31 is using a reference type undefined in this output style.]
- Choi, T. Y., & Krause, D. R. (2006). The supply base and its complexity: Implications for transaction costs, risks, responsiveness, and innovation. *Journal of operations management*, 24(5), 637-652.
- David, H., Dorn, D., & Hanson, G. H. (2013). The China syndrome: Local labor market effects of import competition in the United States. *American Economic Review*, 103(6), 2121-2168.
- Fahimnia, B., Sarkis, J., & Davarzani, H. (2015). Green supply chain management: A review and bibliometric analysis. *International Journal of Production Economics*, 162, 101-114.
- Fajgelbaum, P., & Khandelwal, A. (2021). *The economic impacts of the us-china trade war*.
- Gammelgaard, B., & Flint, D. (2012). Qualitative research in logistics and supply chain management: beyond the justification for using qualitative methods. *International Journal of Physical Distribution & Logistics Management*.
- Gov. (2015). *Made in China takes the first step of "from big to strong" -- understand the core intention of made in China 2025 with six keywords*. Retrieved May 19 from http://www.gov.cn/zhengce/2015-05/19/content_2864782.htm
- Grimes, S., & Du, D. (2020). China's emerging role in the global semiconductor value chain. *Telecommunications Policy*, 101959.
- Handfield, R. B., Blackhurst, J., Elkins, D., & Craighead, C. W. (2007). *A framework for reducing the impact of disruptions to the supply chain: Observations from multiple executives*. *Supply Chain Risk Management: Minimizing Disruption in Global Sourcing*. Taylor and Francis, Boca Raton, FL, 29-49.
- Harold, S. W., & Kamijima-Tsunoda, R. (2021). Winning the 5G race with China: a US-Japan strategy to trip the competition, run faster, and put the fix in. *asia policy*, 28(3), 75-103.
- Hart, J. A. (2018). *Rival capitalists*. Cornell University Press.
- Hauge, J. (2020). Industrial policy in the era of global value chains: Towards a developmentalist framework drawing on the industrialisation experiences of South Korea and Taiwan. *The World Economy*, 43(8), 2070-2092.
- Houlihan, J. B. (1985). *International supply chain management*. *International Journal of Physical Distribution & Materials Management*.

- House, W. (2021). Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-based Growth: 100-Day Reviews under Executive Order 14017. A Report by The White House.
- Hwang, D., & Min, H. (2015). Identifying the drivers of enterprise resource planning and assessing its impacts on supply chain performances. *Industrial Management & Data Systems*.
- Javed, S. A., Bo, Y., Tao, L., & Dong, W. (2021). The 'Dual Circulation Development model of China: Background and insights. *Rajagiri Management Journal*.
- Jeong, B., & Lee, H. (2021). US–China commercial rivalry, great war and middle powers. *International Area Studies Review*, 24(2), 135-148.
- Jin, Y., Dorius, S., & Xie, Y. (2021). Americans' Attitudes toward the US–China Trade War. *Journal of Contemporary China*, 1-21.
- JungleScout. (2021). Global Imports Report 2021.
- Katsaliaki, K., Galetsi, P., & Kumar, S. (2021). Supply chain disruptions and resilience: a major review and future research agenda. *Annals of Operations Research*, 1-38.
- Kazemi, N., Modak, N. M., & Govindan, K. (2019). A review of reverse logistics and closed loop supply chain management studies published in IJPR: a bibliometric and content analysis. *International Journal of Production Research*, 57(15-16), 4937-4960.
- Khan, S. A. R., Yu, Z., Golpira, H., Sharif, A., & Mardani, A. (2021). A state-of-the-art review and meta-analysis on sustainable supply chain management: Future research directions. *Journal of Cleaner Production*, 278, 123357.
- Knoema. (2020). Global Economic Trends: US Overtaken by China as a Global Trade Power. Knoema. Retrieved December 25 from <https://cn.knoema.com/infographics/hxkevje/global-economic-trends-us-overtaken-by-china-as-a-global-trade-power>
- Korkmaz, H., & Turan, İ. (2021). Analysis of the Competition Between China and the US in the 21st Century from the Perspective of the Concept of Hybrid Cold War. *Anadolu Üniversitesi Sosyal Bilimler Dergisi*, 21(2), 367-390.
- Kwan, C. H. (2020). The China–US trade war: Deep-rooted causes, shifting focus and uncertain prospects. *Asian Economic Policy Review*, 15(1), 55-72.
- Lee, J. (2020). US-China economic distancing in the era of great power rivalry and COVID-19. Retrieved January 28 from <https://www.ussc.edu.au/analysis/us-china-economic-distancing-in-the-era-of-great-power-rivalry-and-covid-19>
- Lee, S.-O., Wainwright, J., & Glassman, J. (2018). Geopolitical economy and the production of territory: The case of US–China geopolitical-economic competition in Asia. *Environment and Planning A: Economy and Space*, 50(2), 416-436.
- Lin, J. Y. (2021). Dual Circulation and China's Development. *Frontiers of Economics in China*, 16(1), 30-34.
- Lin, Y., Fan, D., Shi, X., & Fu, M. (2021). The effects of supply chain diversification during the COVID-19 crisis: Evidence from Chinese manufacturers. *Transportation Research Part E: Logistics and Transportation Review*, 155, 102493.
- Liu, Y. (2021). Application of improved recursive regression algorithm on I&O model under COVID-19. *Journal of Physics: Conference Series*,
- Mascitelli, B., & Chung, M. (2019). Hue and cry over Huawei: Cold war tensions, security threats or anti-competitive behaviour? *Research in Globalization*, 1, 100002.

- Matyushok, V., Krasavina, V., Berezin, A., & García, J. S. (2021). The global economy in technological transformation conditions: A review of modern trends. *Economic Research-Ekonomiska Istraživanja*, 34(1), 1471-1497.
- McMaster, M., Nettleton, C., Tom, C., Xu, B., Cao, C., & Qiao, P. (2020). Risk management: Rethinking fashion supply chain management for multinational corporations in light of the COVID-19 outbreak. *Journal of Risk and Financial Management*, 13(8), 173.
- Mendoza, A. R. (2020). Trade in the time of corona: broken chains and mended barriers. *Nytimes.com*. (2018). Trump's Trade War With China Is Officially Underway (Published 2018). <https://www.nytimes.com/2018/07/05/business/china-us-trade-war-trump-tariffs.html>
- Ozdemir, D., Sharma, M., Dhir, A., & Daim, T. (2022). Supply chain resilience during COVID 19 pandemic. *Technology in Society*, 101847.
- Pereira, C. R., Christopher, M., & Da Silva, A. L. (2014). Achieving supply chain resilience: the role of procurement. *Supply Chain Management: an international journal*.
- Pisano, G., & Shih, W. C. (2012). Why America Needs A Manufacturing Renaissance'. Hbs. Edu.
- Pla-Barber, J., Villar, C., & Narula, R. (2021). Governance of global value chains after the Covid-19 pandemic: A new wave of regionalization? *BRQ Business Research Quarterly*, 24(3), 204-213.
- Pop, A., & Grigoraş, R. (2021). Towards a bifurcated future in the US-China relationship: What is in it for the EU? *Futures*, 125, 102634.
- Regilme Jr, S. S. F. (2019). The decline of American power and Donald Trump: Reflections on human rights, neoliberalism, and the world order. *Geoforum*, 102, 157-166.
- Rushton, A., Croucher, P., & Baker, P. (2022). *The handbook of logistics and distribution management: Understanding the supply chain*. Kogan Page Publishers.
- Shangguan, J. Z., & Seow, G. S. (2022). The Changing Business Landscape in an Era of Growing US-China Strategic Rivalry. In T. Wu & N. Bu (Eds.), *International Business in the New Asia-Pacific: Strategies, Opportunities and Threats* (pp. 33-51). Springer International Publishing. https://doi.org/10.1007/978-3-030-87621-0_2
- Sodhi, M. S., & Tang, C. S. (2021). Supply chain management for extreme conditions: Research opportunities. *Journal of Supply Chain Management*, 57(1), 7-16.
- Srinivasan, R., & Swink, M. (2018). An investigation of visibility and flexibility as complements to supply chain analytics: An organizational information processing theory perspective. *Production and Operations Management*, 27(10), 1849-1867.
- SWP. (2021). Strategic Rivalry between the United States and China. *Stiftung Wissenschaft und Politik*. Retrieved January 28 from <https://www.swp-berlin.org/10.18449/2020RP04/>
- Tsai, F. M., Bui, T.-D., Tseng, M.-L., Ali, M. H., Lim, M. K., & Chiu, A. S. (2021). Sustainable supply chain management trends in world regions: A data-driven analysis. *Resources, Conservation and Recycling*, 167, 105421.
- Tyers, R., & Zhou, Y. (2021). THE US-CHINA TRADE DISPUTE: A MACRO PERSPECTIVE. *The Singapore Economic Review*, 1-28.
- USAGov. (2021, Mar 3, 2021). Secretary Blinken delivers a speech on U.S. Foreign Policy U.S. Department of State.
- USTR. (2018). Findings of the Investigation Into China's Acts, Policies and Practices Related to Technology Transfer, Intellectual Property, and Innovation Under Section 301 of the Trade Act of 1974. Office of the United States Trade Representative, Executive Office of the ...

- Vu, V.-H., Soong, J.-J., & Nguyen, K.-N. (2021). The Political Economy of China's Rising Role in the Asia-Pacific Economic Cooperation (APEC): Strategies and Instruments of the Chinese Way. *The Chinese Economy*, 1-13.
- Wang, X., Wang, X., Zhong, Z., & Yao, J. (2021). The impact of US-China trade war on Chinese firms: Evidence from stock market reactions. *Applied Economics Letters*, 28(7), 579-583.
- Wang, Z., & Zeng, J. (2020). From economic cooperation to strategic competition: Understanding the US-China trade disputes through the transformed relations. *Journal of Chinese Political Science*, 25(1), 49-69.
- Wieland, A. (2021). Dancing the supply chain: Toward transformative supply chain management. *Journal of Supply Chain Management*, 57(1), 58-73.
- Wong, P. N. (2021). *Techno-Geopolitics: US-China Tech War and the Practice of Digital Statecraft*. Routledge India.
- Wu, X., Guo, J., Chen, G., Wu, X., Meng, J., Alhodaly, M., & Wakeel, M. (2021). Energy use flows in the supply chains of the world economy: A full account of both primary and intermediate inputs. *Journal of Cleaner Production*, 320, 128621.
- Yee, C. L., & Tan, K. H. (2004). A process and tool for supply network analysis. *Industrial Management & Data Systems*.
- Yifu, L. J., & Wang, X. (2021). Dual Circulation: a New Structural Economics view of development. *Journal of Chinese Economic and Business Studies*, 1-20.
- Zamboni, A., Bezzo, F., & Shah, N. (2009). Spatially explicit static model for the strategic design of future bioethanol production systems. 2. Multi-objective environmental optimization. *Energy & Fuels*, 23(10), 5134-5143.
- Zheng, Y., Han, W., & Yang, R. (2021). Does government behaviour or enterprise investment improve regional innovation performance?-evidence from China. *International Journal of Technology Management*, 85(2-4), 274-296.
- Zhou, Q., He, Z., & Yang, Y. (2020). Energy geopolitics in Central Asia: China's involvement and responses. *Journal of Geographical Sciences*, 30(11), 1871-1895.
- Zhu, Q., & Sarkis, J. (2004). Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises. *Journal of operations management*, 22(3), 265-289.