<u>EDITORIAL</u>

Dear Readers,

Welcome to Volume 9, Number 2 of the ASEAN Journal of Management and Innovation (AJMI).

The end of the year is nearing and with it comes the ritualistic plunge into the past twelve months in search of defining moments in our lives and milestones that will shape our future. As usual, this year brought its share of challenges and achievements. One acronym captures it all, BANI, which stands for brittle, anxious, non-linear, and incomprehensible in reference to the way the world has become. The age of BANI is replacing another acronym, VUCA, its predecessor for decades, which stands for volatility, uncertainty, complexity, and ambiguity. BANI disrupted VUCA as more complicated circumstances have been affecting people.

Take anxiety, one element of BANI. As the dust from the pandemic is settling, new concerns have emerged. People are worried about the impact of various kinds of conflicts between nations, prominent among them, the Russia-Ukraine war and the US-China trade war. With central banks remaining committed to raising interest rates in response to high inflation, people are also fretful about the imminence of a demand-sapping recession. Surging interest rates and sky-rocketing prices are not only a source of anxiety, they are also a reflection of the brittleness of the world.

Another major concern is the increase in the frequency and intensity of extreme weather events, many of them due to climate change. The scale of economic losses forecasted for Southeast Asia is sobering. By 2030, average annual losses caused by natural disasters are projected to quadruple to be about 2.4 of the region's GDP. As **Areerat Leelhaphunt** reports in *Driving Green Innovation to Enhance Competitive Advantage: Thailand's Manufacturing Sector,* the old playbook is no longer relevant; hence the importance for companies to adopt innovative eco-friendly strategies.

With the world moving closer to a 'new normal,' this year has seen the return of a fundamental freedom. People can now move freely almost everywhere around the world. This comes as much-needed relief to the hard-hit tourism industry and makes **Ubonwan Suwannapusit** and **Ampol Chayomchai**'s article on experience-based tourism in two provinces in Northeast Thailand especially relevant. As emphasized in *Influence of Integrated Marketing Communication and Tourism Involvement on Local Experience-Based Tourism Decision,* the sustainability of this trendy type of tourism, though, requires concerted efforts from every stakeholder.

It is now quite clear that the pandemic has been an accelerator of trends and has made practices, which some sections of society were initially slow or reluctant to endorse, acceptable. This is the case, for instance, with social commerce. As discussed by **Chenicha Praphruetmon** in *Effect of Social Commerce on Social Media* Users, with the increase in the

number of people joining virtual communities of shoppers and sharing their experience with products and services, social media has grown in stature.

There has also been greater acceptance of new ways of working as the result of Covid-19-induced lockdowns, most notably the practice of working from home. Is this practice to continue? Focusing on the productivity, job commitment, and job engagement of workers in a particular sector in the Philippines, **Cristina Teresa Lim** and **Maritoni Carnela Matibag** precisely address this question in *Covid-19 Impact on the Business Process Outsourcing Sector in The Philippines: Is Work from Home to Continue*?

Another issue related to working from home is job motivation. While it is easy to see, given the lack of direct supervision at home, why it is a cause for concern for employers, this is also the case for employees working from the office. As **Ronel Geraldizo Dagohoy** and **Alger P. Dura** report in *Modeling the Public Service Motivation of Local Government Employees,* in the public sector, motivation is directly influenced by public leadership and organizational culture.

Age can have a substantial impact on customer perception and attitude. In *Gen Y & Gen Z's Perceived Service Quality and Customer Satisfaction in the Retail Banking Sector in Northeast China*, **Fei Lu** seeks to determine whether there is a generational gap between Gen Y and Gen Z's perception of service quality in the retail banking sector. At a time when the banking industry is switching to online services, this is helpful to know.

The internationalization of Thai SMEs is low. Yet, as reported by **Ulrike Guelich** and **Hans Michael Guelich** in *Determinants for Market Expansion of Thai SME Entrepreneurs as the ASEAN Economic Community is Taking Roots,* Thai entrepreneurs' internationalization opportunities across the region have been increasing thanks in no small part to the establishment of an ASEAN Economic Community (AEC). The article offers various recommendations as to what could be done to remedy this situation.

One contribution to this volume focuses on one specific financial data, the DuPont ratio. Specifically, in *Movements of Return on Equity of Thai Big Market Capitalization Companies: Revisiting the DuPont Ratio,* **Sumeth Tuvadaratragool** examines the causal relationship between net profit margin, total asset turnover, equity multiplier, and return on assets and the return on equity of some Thai companies.

Finally, in *Factors Affecting Certified Public Accountants' Professional Audit Data Analytics Competency*, **Suwan Wangcharoendate** seeks to analyze the effect of audit learning diversity, comprehensive audit adroitness, audit technological attention, and stakeholder pressure intensity on the professional audit data analytics competency of Thai certified public accountants (CPAs) as they are facing an increasing velocity of data, particularly in the contest of real-time information.

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Guideline for Authors

Driving Green Innovation to Enhance Competitive Advantage: Thailand's Manufacturing Sector

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Abstract
One of the various strategies a firm can implement to enjoy a competitive advantage is green innovation. This study seeks to examine both the direct and indirect effects of green innovation on competitive advantage by extending the research framework based on the strategic choice theory. Utilizing cluster sampling, data was collected among manufacturers operating in the six regions of Thailand. The direct effect of the three components of green innovation (green product innovation, green process innovation, and green managerial innovation) and the moderating effect of a green orientation were analyzed using the OLS Regression and PROCESS model 1. The findings reveal that (i) the three components have a positive impact on competitive advantage, and (ii) each conditional effect (a strong or a weak green orientation) has a positive impact on the linkage between green innovation and its three components and competitive advantage. Surprisingly, the interaction of green product innovation and weak green orientation provides a greater effect on competitive advantage than a strong one. This is because most executives are concerned with the high costs of eco-friendly raw materials. Ignoring environmental issues, however, can negatively impact the image a firm and cause it to miss opportunities. It is recommended that an executive opts for a certain level of green orientation in order to minimize unforeseen business risks and enjoy a competitive advantage.

Keywords: Green Product Innovation, Green Process Innovation, Green Managerial Innovation, Strategic Choice Theory, Competitive Advantage

1. Introduction
The issue of green innovation (GI) has now been given global attention and is becoming a solution to gaining competitive advantage (CA) and ensuring business sustainability (Begum et al., 2020; Liu & Yan, 2018). The term 'green innovation' was initially used to depict advancement in products, services, processes, and management resulting in longer product life cycle and in the reduction of environmental risk, pollution, and the inefficient consumption of natural resources. GI, however, is now believed to not only enhance environmental sustainability but also CA and business sustainability. In short, there is a strong relationship between GI and CA (Bataineh, 2021; Soewarno, Tjahjadi, & Fithrianti, 2019). According to Qiu, Hu, and Wang (2020) and Song et al. (2020), pressure from environmental restrictions, market competition, and various additional stakeholders have had an impact on the manufacturing sector in almost every country, including in Thailand. The priority is not only business sustainability and the cost and quality of product and the flexibility of its delivery but also environmental and social sustainability (Porter & Kramer, 2006). This is precisely why manufacturing firms need to come up with a green business strategy to address societal environmental concerns (Yahya et al., 2022). An eco-friendly production will positively impact the input, transformation, and output and the operating cost and therefore give the firm a CA. However, for this to happen, a GI strategy must be capable of creating added value. Simply put, today, environmental sustainability is an unavoidable element of any business operation.

As determined by Longoni and Cagliano (2015), among other scholars, environmental sustainability does not confine firms to their usual business practices but on the contrary represents a source of inspiration that contributes to eco-friendly innovation and, as such, is therefore a source of CA. Implementing a GI strategy is not free of challenges (Hermundsdottir & Aspelund, 2021). In the industrial sector, gaining a CA through a sound GI strategy involves 3 forms of innovation: green product innovation (GPDI); green process innovation (GPRI), and green managerial innovation (GMNI). It is strongly believed that GPDI would enhance a firm's CA since the green product created would fulfill a new trend or a green consumers' need and achieve environmental sustainability as well (Andersen, 2021; Cheng, 2020).). GPDI, however, may cause the cost of the raw material used to rise significantly and lower the firm's CA. This is a real challenge for executives having to make the proper strategic choice in terms of green sustainability. A green process could reduce a firm's operating cost, but GPRI involves a trade-off between a huge investment and long-term efficiency as eco-friendly production will achieve both CA and environmental sustainability. In terms of GMNI, obviously top executives are the key players as they have to lead the entire organization into transiting to a green corporate strategy in order to gain a CA through environmental sustainability. This research study focuses on the green orientation (GO) of manufacturing firms located in (i) central; (ii) east; (ii) northeast; (iv) north; (v) south, and (vi) west Thailand. Specifically, through the lens of strategic choice theory, it explores the direct effect of GPDI, GPRI, GMNI on a firm's CA and the moderating effect of its GO on the three GI components and on its CA. The significance of this study lies in its ability to fill the research gap in the different degrees of green orientation (GO) of an executive and its impact on the firm's GI.

2. Literature Review and Hypothesis Development

- Strategic Choice Theory

The strategic choice theory addresses the rationale for adopting proactive strategies to cope with environmental sustainability issues. It describes the role that leaders or leading groups play in influencing an organization through making choices in a dynamic political process (Child, 1997). As an organizational theory, it is rooted in the contingency theory that claims that there is no best way to organize a corporation, lead a company, or make decisions (Child, 1972). It is also based on the assumption that an organization could become more efficient and better perform by appropriately implementing strategies within a specific context (Wagner & Bode, 2008). The implication for this study is that the executives of a manufacturing firm perform a proactive role in deciding on the proper choice of green practice to gain CA and be sustainable. Previous studies reveal that when an executive choses GI as a corporate strategy, the company gains CA and business sustainability (Gurlek & Tuna, 2018; Liu, Dong, & Wang, 2021). Based on the strategic choice theory, an executive thus tends to implement GI into its operating activities to enhance its firm's CA.

- Competitive Advantage

Competitive advantage (CA) is associated with the competitive strategies that a firm can implement to outperform its competitors, leading to a superior position in the rivalry among companies (Porter & van der Linde, 1995). CA is an essential way to differentiate between a firm and its competitors in terms of gains from a business strategy. In general, especially in the manufacturing sector, CA gained from GI can be measured by an increase in product sales, a lowering of the cost of the product, and/or a prompt response to the significant changes in the market, quality improvement, corporate image, and the R&D capability (Hermundsdottir & Aspelund, 2021; Li, Lei, & Han, 2018). Moreover, several studies confirm that GI is a crucial instrument for a firm to obtain a CA in a period of enhanced environmental concerns (Bataineh, 2021; Soewarno et al., 2019).

- Green Innovation

Green innovation (GI) can be defined as the advancement of a product, service, process, and management that has been implemented into an organization, resulting in the reduction of environmental risk throughout the entire life cycle of a product or service. GI also refers to other alternatives to natural resource consumption (Chang & Chen, 2013). As we saw in the introduction, GI can be classified as either: (i) green product innovation (GPDI); (ii) green process innovation (GPRI); or (iii) green managerial innovation (GMNI).

(i) Green Product Innovation:

GPDI relates to the advancement of products that derives from eco-friendly technology. It increases the quality of products and reduces product life cycles, leading to a superior marketing position (Carrillo-Hermosilla, del Ria, & Konnola, 2010). An executive may consider a cost-sharing strategy with the green product movement to gain a CA (Andersen, 2021; Cheng, 2020). In their study, Xie, Huo, & Zou (2019) determined that GPDI can enhance a firm's CA and financial performance. Therefore, the following hypothesis can be proposed:

    H₁: *GPDI has a positive linkage with CA.*

(ii) Green Process Innovation:

GPRI represents the new implementation of any green methods in the manufacturing process to enhance efficiency in a friendly environment (Artha & Mulyana, 2018; Haseeb et al., 2019; Banerjee, 2002).). A recent study by Rehman et al. (2021) reveals that a manufacturing firm can and use eco-raw material to enhance an existing process and avoid hazardous waste. Thus, as mentioned by Sun and Sun (2021), an executive is likely to consider GPRI as a crucial component of the firm's GI strategy to gain a CA. Consequently, the author can hypothesize that:

    H₂: *GPRI has a positive linkage with CA.*

(iii) Green Managerial Innovation:

GMNI refers to an efficient management practice adopted by a firm as part of its green practice to handle critical issues, such as marketing competition, environmental restrictions, and business operation costs (Chung, 2020). In a recent study, Li, Huang, and Tong (2021), found that an executive had chosen to cooperate with a competitor to create a GMNI strategy for mutual benefits. Furthermore, green transformational leadership can motivate and lead stakeholders to promote GI, thank to which business sustainability and CA can eventually be achieved (Ahmeda, Mozammelb, & Zamanc, 2020; Qiao, Zhao, & Zou, 2020). Thus, the author proposes the following hypothesis:

    H₃: *GMNI has a positive linkage with CA.*

Green Orientation

For decades, manufacturing firms have been pressured to develop their green orientation (GO). (Artha & Mulyana, 2018; Haseeb et al., 2019). As a result, they have been increasingly focusing on environmental issues and deploying green strategies. Because of consumer demands for greener products and processes, firms realize the benefits of incorporating GO that provide what consumers want. Executives are forced to recognize consumers' environmental concerns and integrate them into their ongoing business operations. GO thus relates to green business practices which a firm recognizes as crucial for achieving business sustainability (Qiao et al., 2022). This is consistent with Makhloufi et al.'s (2022) finding that a firm can enhance its CA over its competitors by deploying an eco-friendly strategy that connects with consumers' environmental concerns. The moderating effect of GO is examined through the GI and CA linkages. The underlying assumption is that a firm's strong GO manifests itself in the three components of GI practice, which leads to an enhancement of its CA. Conversely, a firm's weak GO shows in its GI practice and serves only as "window dressing" for its public image

(Leelhaphunt & Suntayuth, 2020). It results in stakeholders' doubt and distrust and leads to competitive incapability. The following 3 hypotheses can therefore be developed:

H₁ₐ: *A strong GO will moderate a positive linkage between GPDI and CA.*
H₂ₐ: *A strong GO will moderate a positive linkage between GPRI and CA.*
H₃ₐ: *A strong GO will moderate a positive linkage between GMNI and CA.*

Figure 1 shows the overall conceptual model developed in this study on the basis of the key concepts discussed above.
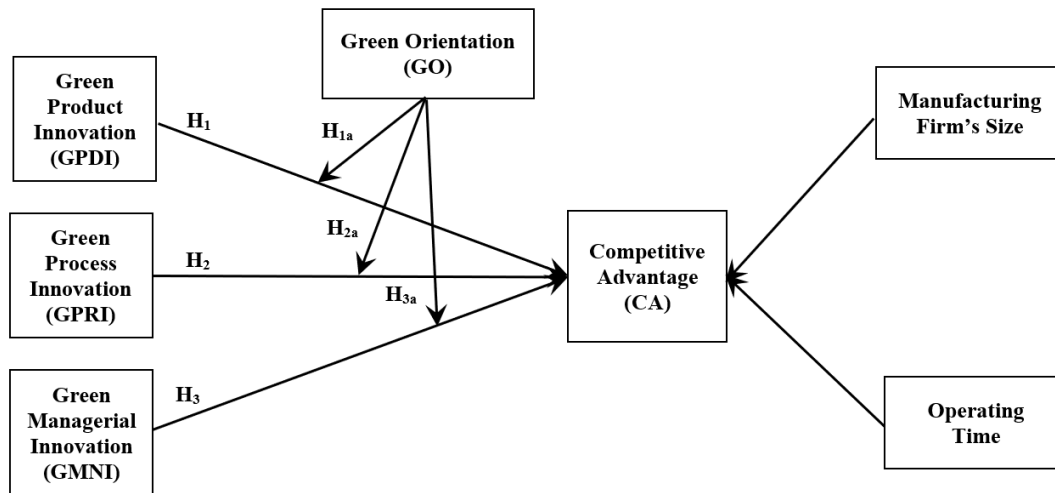
Figure 1: Overall Conceptual Model (created by the author for this study)

3. Research Methodology
- Sample and Procedures
As we just saw, as causal research at the organizational level, this quantitative research study explores the direct effect of GPDI, GPRI, GMNI on a firm's CA and the moderating effect of its GO on its CA. To this end, it investigates a number of manufacturing firms located in the 6 regions of Thailand: (i) central; (ii) east; (ii) northeast; (iv) north; (v) south, and (vi) west. The population consists of a total of 70,410 manufacturing firms located in Thailand (Department of Industrial Works, 2020). The sample size was determined by using Taro Yamane's formula with a 95% level of confidence (Yamane, 1973). It came down to 398 firms. Cluster sampling was utilized with an equal sample size rounded up to 67 samples per region, which means the total sample size ended up including 402 firms. For data collection, the author utilized an industrial network as well as formal invitations for academic purposes. After receiving participants' confirmations, online questionnaires were sent to a key person in the manufacturing operation of the company, for instance, the owner, top management, a factory manager, or a procurement manager.

- Measurements
Based on the conceptual model discussed above, the study includes five variables and two control variables (firm size and operating time). The 4-item scale of the GDPI, GPRI, and GMNI constructs were adapted from Alreshidi (2016), the 6-item scale of the GO variable from Benerjee spelling (2002), and the 7-item scale of the CA variable from Change spelling (2011). In addition, in order to avoid hesitations in terms of opinions expressed, a 6-point Likert scale questionnaire was used, ranging from 1 (extremely low agreement) to 6 (extremely high agreement).

- *Data Analysis*

Data analysis was a two-step process: An initial testing was conducted to obtain the participants' general demographics utilizing the statistical software program. It was also conducted to perform construct validity utilizing the confirmatory factor analysis. Second, hypothesis testing was then conducted to examine the direct effect of GPDI, GPRI, GMNI, and the moderating effect of GO. Process Model 1 was employed to investigate these linkages. Of great import here, this entire research procedure was reviewed and approved by the Institutional Review Board of Burapha University on September 6, 2021, under number IRB2-123/2564.

4. Research Results

The initial English questionnaire was modified and developed into a Thai questionnaire and verified by experts in the sector. A pilot test of 40 random samples was then conducted. The Cronbach's alpha of each scale was above 0.70, indicating acceptable reliability. These samples were removed from the final survey. The online questionnaire was collected over 2 months during the period September-October 2021. It achieved 100 percent collection. The demographic characteristics of the participants are shown in Table 1.

Table 1: Characteristics of Respondents

Demographic item		Frequency	Percentage
Gender	Male	243	60.45
	Female	159	39.55
Age	30-40 years	129	32.09
	41-50 years	176	43.78
	Above 50 years	88	21.89
Level of education	Bachelor's degree	267	66.42
	Master's degree	125	31.09
Current position	Factory/Production manager	177	44.03
	Procurement manager	118	29.35
	R & D Director	4	1.00
	Managing Director/CEO	86	21.39
	Owner	17	4.23
Type of industry	Automotive	58	14.43
	Industrial materials	98	24.38
	Energy/Petrochemical	44	10.95
	Electronic components	92	22.89
	Consumer products	89	22.14
Firm size	SME (≤ 200 employees)	226	56.22
	Large (> 200 employees)	176	43.78
Operating time	Lesser than 5 years	56	13.93
	6-10 years	179	44.53
	11-15 years	106	26.37
Total		402	100.00

60.45 percent of the 402 participants were males and the average age was between 41-50 years old (43.78% of the respondents). 66.42 percent of the participants held a bachelor's degree and 44.03 percent of them were factory/production managers. The rest of them filled the other types of executive positions listed in this study. 24.38 percent of the firms were in the industrial sector and 22.89 percent in the material sector. 56.22 percent of those firms were SMEs and the rest of them large firms. Almost half of them (44.53%) have been in operation for 6 to 10 years.

- Scales Validation and Reliability

Obviously, the quality of the questionnaire is crucial to achieving the study objectives. Construct validity was therefore performed, starting with convergent validity. The principal component extraction and varimax rotation techniques used in the factor analysis were applied to this study. The results show that each of the KMO value with a *p*-value of 0.00 ranged above 0.70, indicating that it was proper to utilize the factor analysis technique. An additional analysis indicated that all extraction values were higher than 0.50. As determined by Fornell and Larcker (1981), convergent validity is assessed via the composite reliability (CR) and the average variance extracted (AVE). CR is used to assess reliability and AVE to determine the validity of the measurements. CR values of 0.70 and above are acceptable whereas the acceptable AVE value is 0.50 and above (Hair, 2010). To analyze the CR and AVE, a first-order confirmatory factor analysis (CFA) was conducted. As Table 2 shows, the criteria of convergent validity based on CR and AVE were met. In addition, discriminant validity was tested by utilizing the first-order CFA with the maximum likelihood technique. Based on the analytical framework, the square root of the AVE should surpass its correlation with other constructs. Table 2 shows that the criteria of discriminant validity based on the square root of AVE and the latent variables correlation were met. Thus, construct validity was achieved.

Table 2: Construct Validity Analysis

Variable	Item	CR	AVE	GPDI	GPRI	GMNI	GO	CA
1. GPDI	4	0.79	0.50	0.71[a]				
2. GPRI	4	0.80	0.52	0.30[b]	0.72[a]			
3. GMNI	4	0.81	0.53	0.30[b]	0.33[b]	0.73[a]		
4. GO	6	0.87	0.54	0.31[b]	0.32[b]	0.34[b]	0.74[a]	
5. CA	7	0.90	0.55	0.31[b]	0.33[b]	0.35[b]	0.40[b]	0.74[a]

Note: N = 402, [a] = square root of AVE, [b] = latent variables correlation

- Hypothesis Testing: GPDI Direct and Indirect Effects

Based on H_1, the direct positive linkage of GPDI with CA was examined. In the meantime, H_{1a} tested the conditional effect of the GO moderator on this linkage. The underlying assumption of the moderator was that it was either a strong or weak GO. Hayes (2013) recommends using PROCESS model 1 to evaluate the conditional effects of moderation. Thus, both hypotheses were tested separately. Starting with the direct effect of H_1, a multiple regression analysis (MRA) was conducted by entering the dependent, independent, and control variables. Firm size and operating time were treated as ordinal scales. As indicated in Table 3, it was found that GPDI had a significantly positive impact on CA (b = 0.15, $p < 0.01$, adjusted $R^2 = 0.64$). Thus, H_1 was supported. Moreover, being a large firm had a significantly greater positive impact on CA than being a smaller company (b = 0.86, $p < 0.01$) and having been in operation for a long time also had a significantly greater positive impact on CA than having been in operation for a short time (b = 0.41, $p < 0.01$).

Table 3: GDPI Direct and Indirect Effects

Variable	Direct Effect on CA (Y) Adjusted $R^2 = 0.64$, F = 236.31**					Indirect Effect on CA (Y) $R^2 = 0.64$, F = 173.49**		
	b	β	SE	t	VIF	b	SE	t
Constant	1.35		0.14	9.86**		1.98	0.10	20.41**
GPDI (X_1)	0.15	0.15	0.03	4.66**	1.11	0.14	0.04	3.79**
GO (M)						0.10	0.05	1.96*
Interaction (X_1M)						-0.03	0.07	-0.40
Firm size	0.86	0.53	0.05	16.83**	1.08	0.85	0.05	16.64**
Operating time	0.41	0.47	0.03	15.14**	1.04	0.41	0.03	14.26**

Note: N = 402, *$p < 0.05$, **$p < 0.01$

Next, the separated PROCESS model 1 was performed to explore each conditional effect of either a strong or a weak GO. The analysis, presented in Table 4 and Figure 2 shows "Path b_1" from GPDI (X_1) to CA (Y), and a significant result (b = 0.14, p < 0.01). "Path b_2" was from a GO (M) to CA (Y) and "Path b_3" an interaction term aroused by X_1 x M. The results indicate that "Path b_3" to CA was nonsignificant (b = -0.03, p = 0.69).

Path $X_1 \rightarrow Y$
Path b_1: X_1(mean centered), b= 0.14, p=0.00
Path b_2: M (mean centered), b= 0.10, p=0.05
Path b_3: Interaction, b= -0.03, p=0.69

Path $X_2 \rightarrow Y$
Path b_1: X_2(mean centered), b= 0.14, p=0.00
Path b_2: M (mean centered), b= 0.11, p=0.04
Path b_3: Interaction, b= -0.01, p=0.91

Path $X_3 \rightarrow Y$
Path b_1: X_3(mean centered), b= 0.15, p=0.00
Path b_2: M (mean centered), b= 0.10, p=0.07
Path b_3: Interaction, b= -0.04, p=0.55
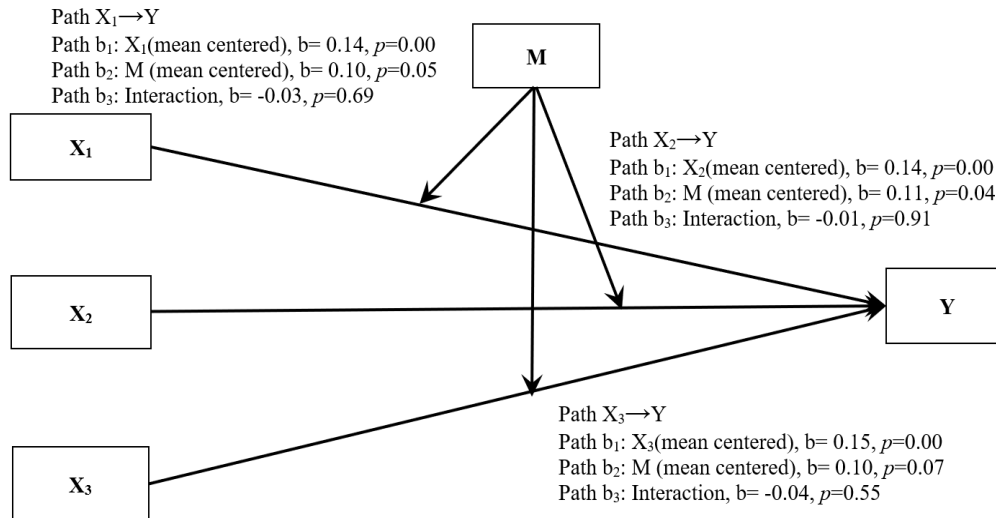
Figure 2: Results of Moderating Effect

For other perspectives, as recommended by Hayes (2013), the 95% bias-corrected bootstrap confidence interval with a 5000-sample was utilized and the evidence of the conditional effect of X on Y at the value of each moderator indicated by "no zero" in the confidence intervals. One of the advantages of a PROCESS analysis is that it shows the results of the conditional effects of both a strong and weak moderator, including the *p*-value and the statistical inference of the confidence intervals. To calculate the conditional effects of X on Y at the value of each moderator, the following equation can be used: $\Theta = b_1 + b_3 V$

where: Θ = Total conditional effect of M on Y at the value of V
b_1 = Path b_1 from M to Y
$b_3 V$ = Interaction term
V = Value of each moderator

Table 4: GO Moderating Effect of GO

Conditional effect of (X) on (Y) at value of each moderator (V): $\Theta = b_1 + b_3 V$				
GPDI[a] (X_1)	CA (Y)			
	Θ	SE	LLCI[b]	ULCI[c]
Strong GO (V = 0.47)	0.12*	0.04	0.04	0.20
Weak GO (V = -0.53)	0.15*	0.06	0.03	0.27
GPRI[a] (X_2)	CA (Y)			
	Θ	SE	LLCI[b]	ULCI[c]
Strong GO (V = 0.47)	0.14*	0.06	0.02	0.26
Weak GO (V = -0.53)	0.13**	0.04	0.05	0.21
GMNI[a] (X_3)	CA (Y)			
	Θ	SE	LLCI[b]	ULCI[c]
Strong GO (V = 0.47)	0.17**	0.64	0.05	0.30
Weak GO (V = -0.53)	0.13**	0.42	0.05	0.21

Note: N = 402, *$p < 0.05$, **$p < 0.01$
[a] = mean-centered, [b] = a lower level of Bootstrap confidence interval,
[c] = an upper level of Bootstrap confidence interval

Moderating effect of GO on $P_{X1 \to Y}$	CA (Y)	
	Strong	Weak
Direct effect of X_1 on Y: Path ($P_{X1 \to Y}$) = c′	0.14**	0.14**
Conditional effect of X_1 on Y based on each moderator	0.12*	0.15*
Total effect of X_1 on Y	0.26	0.29
= direct effect + conditional effect of X_1 on Y		
Moderating effect of GO on $P_{X2 \to Y}$	**CA (Y)**	
	Strong	Weak
Direct effect of X_2 on Y through direct path ($P_{X2 \to Y}$) = c′	0.14**	0.14**
Conditional effect of X_2 on Y at the value of moderators	0.14*	0.13**
Total effect of X_2 on Y	0.28	0.27
= direct effect + conditional effect of X_2 on Y		
Moderating effect of GO on $P_{X3 \to Y}$	**CA (Y)**	
	Strong	Weak
Direct effect of X_3 on Y through direct path ($P_{X3 \to Y}$) = c′	0.15**	0.15**
Conditional effect of X_3 on Y at the value of moderators	0.17**	0.13**
Total effect of X_3 on Y	0.32	0.28
= direct effect + conditional effect of X_3 on Y		

As indicated in Table 4, the conditional effect of X_1 on Y with a strong GO (V = 0.47) had "no zero" presented in the 95% confidence interval (CI [0.04, 0.20]) and had a positive conditional effect ($\Theta = 0.12$, $p < 0.05$). Thus, H_{1a} was supported.

- Hypothesis Testing: GPRI Direct and Indirect Effects
Based on H_2 and H_{2a}, the direct and indirect effects of GPRI on CA were examined. Using the method described above, both hypotheses were tested separately. As Table 5 shows, the direct effect of GPRI is that it has a significantly positive impact on CA (b = 0.15, $p < 0.01$, adjusted $R^2 = 0.64$). Thus, H_2 was supported. Moreover, both control variables provided the same results as the test above (firm size: b = 0.86, $p < 0.01$, operating time: b = 0.41, $p < 0.01$).

Table 5: GPRI Direct and Indirect Effects

Variable	Direct Effect on CA (Y) Adjusted $R^2 = 0.64$, F = 236.86**					Indirect Effect on CA (Y) $R^2 = 0.65$, F = 173.32**		
	b	β	SE	t	VIF	b	SE	t
Constant	1.34		0.14	9.82**		1.98	0.10	20.20**
GPRI (X_2)	0.15	0.15	0.03	4.72**	1.11	0.14	0.04	3.67**
GO (M)						0.11	0.05	2.03*
Interaction (X_2M)						-0.01	0.07	-0.11
Firm size	0.86	0.53	0.05	16.80**	1.08	0.84	0.05	16.38**
Operating time	0.41	0.46	0.03	15.08**	1.05	0.41	0.03	14.10**

Note. N = 402, *$p < 0.05$, **$p < 0.01$

The analysis presented in Table 4 and Figure 2 above indicates that the "Path b_1" from X_2 to Y was significant (b = 0.14, p < 0.01) and that the "Path b_2" was from M to Y. The result of "Path b_3" from the interaction term to Y was nonsignificant (b = -0.01). In addition, as indicated in Table 5, the conditional effect of X_2 on Y with a strong GO (V = 0.47) had "no zero" presented in the 95% confidence interval (CI [0.02, 0.26]) and had a positive conditional effect ($\Theta = 0.14$, $p < 0.05$). Thus, H_{2a} was supported.

- Hypothesis Testing: GMNI Direct and Indirect Effects

Lastly, based on H_3 and H_{3a}, the direct and indirect effects of GMNI on CA were examined. Using the same above method, both hypotheses were tested separately. Table 6 shows that the direct effect of GMNI is its significantly positive impact on CA (b = 0.16, $p < 0.01$, adjusted $R^2 = 0.64$). Thus, H_3 was supported. Both control variables provided similar results (firm size: b = 0.85, $p < 0.01$, operating time: b = 0.41, $p < 0.01$).

Table 6: GMNI Direct and Indirect Effects

Variable	Direct Effect on CA (Y) Adjusted R^2 = 0.64, F = 240.15**					Indirect Effect on CA (Y) R = 0.65, F = 176.07**		
	b	β	SE	t	VIF	b	SE	t
Constant	1.34		0.13	10.09**		2.01	0.10	20.42**
GMNI (X_3)	0.16	0.16	0.03	5.11**	1.14	0.15	0.04	3.92**
GO (M)						0.10	0.05	1.83
Interaction (X_3M)						-0.04	0.07	-0.60
Firm size	0.85	0.52	0.05	16.60**	1.10	0.84	0.05	16.19**
Operating time	0.41	0.46	0.03	14.79**	1.06	0.41	0.03	13.85**

Note. N = 402, *$p < 0.05$, **$p < 0.01$

The results shown in Table 4 and Figure 2 above indicate that "Path b_1" from X_3 to Y was significant (b = 0.15, p < 0.01) and that Path b_2" was from M to Y. However, Path b_3" from the interaction term to Y was nonsignificant (b = -0.04). In addition, as Table 6 shows, the conditional effect of X_3 on Y at strong GO (V = 0.47) had "no zero" presented in the 95% confidence interval (CI [0.05, 0.30]), and a positive conditional effect (Θ = 0.17, $p < 0.01$). Thus, H_{3a} was supported.

5. Discussion and Conclusion

Although numerous studies have examined the linkage between GI and CA (Gurlek, & Tuna, 2018; Li et al., 2021), none of them has focused on the conditional effect of the three GI components (GPDI, GPRI, and GMNI). Another distinctive feature of this study is that its author used the theoretical framework of the strategic choice theory to explain how an executive chooses GI to enhance the CA of its company. In addition, the findings in this study show how an executive's choice of either a strong or a weak GO reinforces the 3 components of GI in response to a certain level of CA of the company. Beginning with H_1, the results show that GPDI has a positive correlation with CA. This is consistent with previous studies in which it was determined that CA can be enhanced by GPDI (Chouaibi & Chouaibi, 2021; Jianhong et al., 2020; Xie et al., 2019). Taking into account the conditional effect of H_{1a}, the results indicate that the interaction of GPDI and a strong GO has a positive linkage with CA. However, a further analysis of both a strong and weak GO reveal that a weak GO has a higher positive effect on a firm's CA than a strong GO does. This is counter intuitive and implies that an executive is often more concerned with the variable cost of raw materials than with a green approach to the management of the firm as, in general, eco-friendly raw materials are more expensive. To survive in a highly competitive business, a firm will often seek short-term gains, even if this means facing business unsustainability on the long term or, to put it another way, not prioritizing a green orientation. One of the consequences of such a choice is that following the route of unsustainability may negatively affect the corporate image of a firm and caused it to lose a business opportunity in the form of a positive image. As consumers are becoming more sensitive to climate change and its effects on their environment, this may be a source of concerns to executives. Next, based on H_2, the result indicates that GPRI has a direct positive linkage with CA. This is in keeping with recent studies concluding that a firm could gain more

CA by promoting GPRI (Rehman et al., 2021; Saudi et al., 2019; Wang et al., 2020). As to H_{2a} prediction, it was found that the interaction of GPRI and a strong GO has a positive linkage with CA. Moreover, while both a strong and weak GO generates a positive effect on CA, a higher level of GO has a greater effect on the firm's CA. The implication is that adopting either a strong or a weak GO reinforces the firm's GPRI could generate a higher CA. For example, in their recent study, Rehman et al. (2021) found that manufacturing firms focused on the avoidance of hazardous waste from an existing process to minimize any treatment expenses, eventually enjoyed a stronger CA. Lastly, regarding H_3, it was found that GMNI has a direct positive linkage with CA. This is in line with previous studies, in which it was determined that a firm's CA can be achieved by implementing GMNI (Almeda et al., 2020; Begum et al., 2020; Yacob, Wong, & Khor, 2019). Taking H_{3a} into account, the results indicate that the combination of GMNI with a strong GO has a positive linkage with CA. While a further analysis shows that both a strong and a weak GO have positive effect on CA, it also indicates that a stronger degree of green orientation will a much greater effect and a weak one. Opting for a strong firm GO should thus be a key component of an executive's leadership as it will provide the organization with a higher competitive advantage.

These findings make it abundantly clear that, as expounded by the strategic choice theory, the stance taken by a firm's executive in terms of environmental issues can have a profound impact on the firm's CA. All that said, while a strong proactive green strategy and practice will enhance the CA and business sustainability of the organization – and substantially limit the risk of a negative image, any degree of GO (either strong or weak) will have a positive effect on its CA. By implication, these findings also make it abundantly clear that no GO can be highly detrimental to a firm's CA, and among other consequences, seriously damage its reputation, generally regarded as one of the main assets of a firm (Chung, 2020; Sun & Sun, 2021).

- Managerial Contribution
Based on the above discussion, executives have several options in terms of a firm's green orientation. They may either together or separately:
1. Adopt a strong GO and reenforce the firm's GPDI in order to minimize unforeseen business risk and enjoy a real CA.
2. Not hesitate to implement a strong GO on GPRI as an essential corporate strategy since securing sustainability and a robust CA requires heavy investment in eco-manufacturing process.
3. Only opt for a strong GO in order to secure a greater effect on the firm's CA since managerial expenses play a major part in administration costs. Thus, an executive should provide a strong proactive green practice to enhance CA and business sustainability.

- Theoretical Contribution
As explained earlier, the strategic choice theory is based on the fundamentals at the root of the classic contingency theory, which provides the rationale for adopting proactive strategies to address critical business issues and ensure environmental sustainability. Given his/her proactive role, an executive's strategic choice can result in high organizational efficiency and a strong performance. As applied to this study, one of the implications of this theory is that the proactive response of a firm's executive leads to a high level of commitment to green initiatives in order to enhance the company's competitive advantage and environmental sustainability. The findings of this study can therefore add to the body of literature on green innovation strategies capable of enhancing CA. They can also reaffirm the validity of the strategic choice theory.

- Limitations of this Study and Future Research

Notwithstanding the above, this study has two main limitations. The first is the timing of the research and its costs as data collection was conducted during the COVID-19 pandemic, which caused many manufacturers to temporary halt their operations. Second, the manufacturing firms surveyed in this study operate in very different business environments, they are not similarly situated in terms of environmental concerns and have different degrees of green business practices. Besides, their capital or management orientations may contribute unequally to their green orientation. These two limitations limit the generalizability of this study's results. Future research on the issues tackled in this study should therefore be conducted post-Covid-19 when manufacturers fully resume their operations. Furthermore, it should concentrate on different types and a wider range of industries, thereby making a generalization of Thailand's industrial context.

References

Ahmeda, U., Mozammelb, S., & Zamanc, F. (2020). Green HRM and green innovation: Can green transformational leadership moderate: Case of pharmaceutical firms in Australia. *Systematic Reviews in Pharmacy, 11*(7), 612-617.

Alreshidi, B. A. (2016). *Toward Sustainability in Manufacturing: Linking Green Training and Green Supplier Development for Sustainable Business Advantages.* Doctoral dissertation, University of Toledo, Ohio, United State of America.

Andersen, J. (2021). A relational natural-resource-based view on product innovation: The influence of green product innovation and green suppliers on differentiation advantage in small manufacturing firms. *Technovation, 104*.

Artha, I. W. B., & Mulyana, B. (2018). The effect of internal and external factors of companies on profitability and its implications on stock price index of state-owned banks. *The Economics and Finance Letter, 5*(2), 58-71.

Bataineh, A. Q. (2021). The moderating effect of supply chain eco-centricity between green supply chain management practices and firm performance. *International Journal of Procurement Management, 14*(3), 328-341.

Begum, S., Ashfaq, M., Xia, E., & Awan, U. (2020). Does green transformational leadership lead to green innovation? The role of green thinking and creative process engagement. *Business Strategy and the Environment, 31*(1), 580-597.

Banerjee, S. (2002). Corporate environmentalism: The construct and its measurement. *Journal of Business Research, 55*(3), 177-191.

Chang, C. H. (2011). The influence of corporate environmental ethics on competitive advantage: The mediation role of green innovation. *Journal of Business Ethics*, *104*(3), 361-370.

Chang, C. H., & Chen, Y. S. (2013). Green organizational identity and green innovation. *Management Decision*, *51*(5), 1056-1070.

Carrillo-Hermosilla, J., del Ria, P., & Konnola, T. (2010). Diversity of eco-innovations: Reflections from selected case studies. *Journal of Clean Production*, 18, 1073-1083.

Cheng, C. C. J. (2020). Sustainability orientation, green supplier involvement, and green innovation performance: Evidence from diversifying green entrants. *Journal of Business Ethics, 161*, 393-414.

Child, J. (1972). Organizational structure, environment, and performance: The role of strategic choice. *Sociology*, *6*(1), 1-22.

Child, J. (1997). Strategic choice in the analysis of action, structure, organizations, and environment: Retrospect and prospect. *Organization Studies, 18*(1), 43-76.

Chouaibi, S., & Chouaibi, J. (2021). Social and ethical practices and firm value: The moderating effect of green innovation: Evidence from international ESG data. *International Journal of Ethics and Systems, 37*(3), 442-465.

Chung, K. C. (2020). Green marketing orientation: Achieving sustainable development in green hotel management. *Journal of Hospitality Marketing & Management, 29*(6), 722-738.

Department of Industrial Works. (2020). Annual Statistic of Manufacturing Firms in Thailand. Retrieved May 28, 2021, from https://www.diw.go.th/hawk/content.php?mode=spss63

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research, 18*(3), 382-388.

Gurlek, M., & Tuna, M. (2018). Reinforcing competitive advantage through green organizational culture and green innovation. *Service Industries Journal, 38*(7-8), 467-491.

Hair, J. F. (2010). *Multivariate data analysis: A global perspective.* Upper Saddle River, London: Pearson.

Haseeb, M., Hussian, H. I., Slusarczyk, B., & Jermsittiparsert, K. (2019). Industry 4.0: A solution towards technology challenges of sustainable business performance. *Social Sciences, 8*(5), 154.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* New York: The Guilford Press.

Hermundsdottir, F., & Aspelund, A. (2021). Sustainability innovation and firm competitiveness: A review. *Journal of Cleaner Production, 284.*

Jianhong, H., Yaling, L., Xiao, F., Chia-Hsun, L., & Chih-Hsiang, C. (2020). How can manufacturers promote green innovation in food supply chain? Cost sharing strategy for supplier motivation. *Frontiers in Psychology*, *11.*

Porter, M. E., & van der Linde, C. (1995). Green and competitive: Ending the stalemate. *Harvard Business Review, 73*(5), 120-134.

Qiao, X., Zhao, X., & Zou, J. (2020). Retailing Platforms in the Carbon Neutrality Era. *International Journal of Environmental Research and Public Health, 19*(1), 384-391.

Qiu, L., Hu, D., & Wang, Y. (2020). How do firms achieve sustainability through green innovation under external pressures of environmental regulation and market turbulence? *Business Strategy and the Environment, 29*(6), 2695-2714.

Rehman, S. U., Kraus, S., Shah, S. A., Khanin, D., & Mahto, R. V. (2021). Analyzing the relationship between green innovation and environmental performance in large manufacturing firms. *Technological Forecasting and Social Change, 163.*

Saudi, M. H. M., Sinage, O., Roespinoedji, D., & Razimi, M. S. A. (2019). Environmental sustainability in the fourth industrial revolution: The Nexus between green product and green process innovation. *International Journal of Energy Economics and Policy, 9*(5), 363-370.

Soewarno, N., Tjahjadi, B., & Fithrianti, F. (2019). Green innovation strategy and green innovation: The roles of green organizational identity and environmental organizational legitimacy. *Management Decision, 57*(11), 3061-3078.

Song, M., Yang, M. X., Zeng, K. J., & Feng, W. (2020). Green knowledge sharing, stakeholder pressure, absorptive capacity, and green innovation: Evidence from Chinese manufacturing firms. *Business Strategy and the Environment, 29*(3), 1517-1531.

Sun, Y. & Sun, H. (2021). Green innovation strategy and ambidextrous green innovation: The mediating effects of green supply chain integration. *Sustainability, 13*(9).

Wagner, S. M., & Bode, C. (2008). An empirical examination of supply chain performance along several dimensions of risk. *Journal of Business Logistics, 29*(1), 307-325.

Wang, J., Xue, Y., Sun, X., & Yang, J. (2020). Green learning orientation, green knowledge acquisition and ambidextrous green innovation. *Journal of Cleaner Production, 250*.

Xie, X., Huo, J., & Zou, H. (2019). Green process innovation, green product innovation, and corporate financial performance: A content analysis method. *Journal of Business Research, 101*.

Yacob, P., Wong, L. S., & Khor, S. C. (2019). An empirical investigation of green initiatives and environmental sustainability for manufacturing SMEs. *Journal of Manufacturing Technology Management, 30*(1), 2-25.

Yahya, S., Khan, A., Farooq, M., & Irfan, M. (2022). Integrating green business strategies and green competencies to enhance green innovation: Evidence from manufacturing firms of Pakistan. *Environmental Science and Pollution Research.*

Yamane, T. (1973). *Problems to accompany statistics: An introductory analysis.* New York (NY): Harper & Row:

Gen Y & Gen Z's Perceived Service Quality and Customer Satisfaction in the Retail Banking Sector in Northeast China

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Abstract

The purpose of this study is to investigate the effect of the generational differences between Generation Y and Generation Z on the relationship between customer perceived banking service quality and customer satisfaction in Shenyang, the capital city of one of the largest Northeastern provinces in China. The study focuses on two key demographic characteristics, age and gender. Data was collected during the period October-December 2021 using snowballing sampling and multiple and moderation regression analyses were conducted to test the hypotheses. The findings indicate that two service dimensions, responsiveness, and assurance, significantly influence customer satisfaction at $p=0.000$ and $p=0.024$ levels, respectively. The effect of Gen Y and Gen Z generational differences on Chinese customers' perception of bank service quality was found to be significant only in regard to the empathy dimension. Age and gender, however, were found to impact Chinese customers' perceived bank service quality. This research adds to the body of knowledge on service marketing and Gen Y and Gen Z's perception of service quality in China, and provide insights for Chinese retail banks who intend to target Gen Y and Gen Z customers.

Keywords: Generations Y and Z, Perceived Service Quality, Customer Satisfaction, Age, Gender

1. Introduction

The financial services and products offered by banks have become increasingly undifferentiated, making satisfying customers by exceeding their expectations of service quality an essential component of any profit-maximizing financial strategy in a highly competitive banking industry (Naushad, 2020). This requires banks to rely on superior service quality as an effective instrument to distinguish themselves from competitors (Ramachandran, 2020). According to Nguyen et al. (2020), banks with superior service quality will experience an increase of their market share, enjoy greater revenues, and enhance customer perception. Banks in China are no exception. With the acceleration of economic policy reforms since 2003, the Chinese banking industry has been exponentially growing at an unprecedented rate, close to double digits. Initially dominated by five main finance service providers entangled in an oligopolistic market, the number of players grew with the gradual removal by the Chinese government of some of the rules regulating foreign business investment after 2006 (Wang et al., 2014). Foreign banks began to receive the same treatment as domestic banks. This has resulted in the significant growth in the number of foreign banks and financial joint ventures in China and allowed the Chinese banking industry to shift to a more westernized free market economic model and become more competitive (Luo, 2015). Today, although the domestic commercial banking field is still dominated by the five largest state-owned commercial banks, namely, Agriculture bank of China, Bank of China, China Construction Bank, Industrial and Commercial Bank of China, and Bank of Communication, it also includes 1012 other banks of various types (Luo, 2015). Needless to say, competition is fierce.

The highly competitive Chinese banking industry requires financial service providers to develop sustainable strategy in order to survive. One such strategy is to provide quality service and ensure that customers are satisfied (Bandyopadhyay, 2016; Baumann, 2007). This study focuses on perceived service quality and customer satisfaction in the retail banking sector in Northeast China. Defined by customers' own judgment, service quality evaluation can be influenced by various factors such as age, gender, race, education and so on (Munnukka, 2007). These demographic related components can directly affect the formation of consumers' beliefs, lifestyles and buying behaviors (Munnukka, 2007). Marketing academicians regard age and its related factors as the most crucial variable impacting not only perceived service quality, but also customer satisfaction and buying intention as customers in various age groups often display unique consumption patterns and decision-making processes (Petzer & De Meyer, 2011; Hossain, 2009; Kumar & Lim, 2008;). Different generations of customers will have unique expectations from their financial service providers (Tang, Wang, & Zhang, 2017; O'Neill & Palmer, 2003).

Two generations are considered in this research study, generation Y (Gen Y) and generation Z (Gen Z). Gen Y cohort refers to the group of people born between 1981 and 1996. In China, they are currently estimated to account for approximately 40 percent of the total population. In 2018, they were estimated to represent one third of world population (Wood, 2018). As to the population of Gen Z cohort, it includes people born between 1997 and 2012 and accounts for about 12 percent of Chinese people and 30 percent of the world population (Wood, 2018). Their significant weight in the total population of China (and the world) makes the examination of the perception of bank service quality of these two cohorts in the context of China especially relevant. Despite the richness of the empirical research evaluating service quality, significant research gaps remain (Zeithaml, 2000). First, research on service quality assessment is predominantly conducted in a western cultural setting in developed countries, which means that, consequently, relatively little knowledge is available regarding the impact of service quality on customer satisfaction in countries with a collective cultural background such as China (Su et al., 2021). Second, whether Western service quality concepts are applicable in a oriental cultural settings is debatable. In addition, notwithstanding evidence showing the benefits of improved bank service quality on customer satisfaction and business performance, there is an inadequate amount of empirical studies conducted from the perspectives of different generation cohorts such as Gen Y and Gen Z (Kreituss et., 2021).

Thus, given the rising financial potential and unique characteristics of these two market segments, such research is essential to expand marketing knowledge of their perception of service quality. Finally, although many studies have examined the impact of bank service quality on performance outcome (Kumar, 2010; Islam & Ali, 2011), few studies have examined how Chinese customers' demographic factors relate to their perception of bank service quality (Abdur, 2018). While participants in these studies were sampled as a general population, the individual traits of younger generations, in particular Gen Y and Gen Z groups, have yet to be scrutinized adequately. Therefore, as part of addressing this discrepancy, this study seeks to investigate the relationship between perceived service quality and customer satisfaction in the Chinese banking industry and determine how Gen Y and Gen Z of Chinese customers compare by incorporating the effects of their respective characteristics. This study can be helpful to professionals who wish to broaden their knowledge of these two generational customer groups and meet their expectations of service quality.

2. Literature Review and Hypothesis Development

- Service Quality Measurement

Building on Gronroos' (1982) conclusions, Parasuraman et.al. (1994) postulated that service quality ought to be measured as the difference between customers' expectations of their desired service and their perceptions of what they experienced. A service quality measurement scale, named SERVQUAL, was subsequently developed based on this conceptualization of service quality. The SERVQUAL model is regarded as a significant milestone in service quality literature and has been widely adopted in various service settings (Do, 2020). Still, the SERVQUAL model also received criticism for its theoretical and operational shortcomings, such as the expectation and perception gap scores, questionnaire design, prognostic reliability, and service dimension validity (Cronin & Taylor, 1992; Jain, 2004). Given these drawbacks, marketing academics felt the urge to come up with a more methodological framework. As a result, several alternative measuring models were proposed; the SERVPERF model being one of them (Cronin & Taylor, 1992). Solely based on the perception aspect of the Gap Model, the SERVPERF model is seen as having conceptual and methodological superiority over the SERVQUAL model (Cronin & Taylor, 1992). Over time, researchers have increasingly adopted the performance only SERVPERF model to measure service quality (Cronin Jr, Brady, & Hult, 2000; Jamal, 2003; Sohail & Hasan, 2019). The notion that service quality is a critical element of customer satisfaction has been supported by further research (Karin, 2004; Narteh, 2018; Nunkoo et al., 2020). The same conclusion also holds true for the banking industry (Lee, 2009; Fouzan, 2020; Sahiti, 2020). The implication is that banks need to comprehend what customers' expectations of banking services are, how customers assess the quality of these services, and what factors can influence the customer evaluation process (Teeroovengadum, 2020; Nguyen et al., 2020).

- Customer Satisfaction

Customer satisfaction has been defined in various ways. It can be defined as circumstances when customers are remunerated for certain cost (Jeong, 2016) or as the notion of a pleasurable complementary activity that consumers experience when consuming the product or service (Oliver, 1999). Customer satisfaction occurs when consumers believe that the act of consuming the product or service fulfills certain needs, longings, and objectives. They also consider this complementary action to be pleasant (Oliver, 1999). Customer satisfaction can also be defined as the post purchase belief or opinion of consumers toward certain product or service (Jamal & Naser, 2002). In this case, it is therefore the outcome of the seller's actions that connects different stages of the customer procuring behavior. Moreover, Beerli (2004) described customer satisfaction as the consequence derived from comparing pre-purchase cost and post-purchase performance. Focusing on the expectancy-disconfirmation paradigm, Fornell (1992) found that consumers are said to be satisfied with a products or service when their post perception conforms to their prior expectations. All research studies concurs on the fact that customer satisfaction will result in with various positive business performance outcomes. For instance, satisfied consumers tend to share their positive experiences with other customers, which becomes the foundation of word-of-mouth marketing promotion (Spathis, 2004; Dimitriades, 2007). Satisfied consumers also display brand loyalty despite premium prices and competitive offering (Naushad, 2020). Thus, it is crucial for banks to be aware that customer satisfaction has become a modern business tactic in organizations that have customer-oriented culture and values (Ramachandran, 2020).

- Generational Theory

The generational theory states that groups of people within a population who were born during a specific time span or political and social moments tend to develop and display common values, beliefs, and characteristics, which can lead to the formation of predictive patterns (Howe &

Strauss, 2007). Because of a similar life span, generation cohorts usually go through identical social events and external impacts in their formative years, which means that they possess similar life experiences (Jordaan & Ehlers, 2009; Lissitsa & Kol, 2016). The events referred to in the generational theory can be, for instance, political and socio-economic shifts, industry developments, financial crisis, and phenomenon of scarcity or security (Macky, Gardner, & Forsyth, 2008). These events further shape members of generation cohorts' core values that do not alter drastically during their lives (Li, Li, and Hudson, 2013). Howe and Strauss (2007) labelled these generational principles 'peer personality', which can be identified as cues for behavioral actions. It has been found that individual behaviors related to consumption patterns are led by priorities in one's value system (Li et al., 2013). Even though the attitudes and behaviors of individuals are seldom identical, each generation cohort is projected to exhibit common behavioral and consumption patterns within same generation group that differ with other generational categories (Alwin & McCammon, 2003). All that said, as pointed out by Howe and Strauss (2007), the differentiation of generational cohorts is not entirely absolute and unbiased as individuals born in close but different time span do not act utterly differently although, by strict standards, they belong to different cohort groups. Thus, subtle differences shall be recognized when categorizing various generation segments (Lissitsa & Kol, 2016). A number of studies support the notion that generational-related characteristics can play a vital role in influencing customer perception, behavior, and decision-making process. Therefore, the study of generational cohorts can assist businesses in classifying customers and adapting marketing strategies to satisfy customers (Topalova, 2021).

- Generational Cohorts
The generational difference between Gen Y (millennial) and Gen Z is not only due to changes in the social, economic, and political environment of each of these two generations, but also due to specific characteristics of each generation such as parenting style, self-esteem, and aspirations to name a few (Schewe & Noble, 2000). Gen Y was brought up under the 'helicopter parenting style,' a reference to situations where parents are overly involved in most aspects of their children's lives (Casillas et al., 2021). As a result, they perceive themselves as special, emphasize individual desires, and crave for potential gains and success. Gen Y is considered to be the most egotistic group among all generation cohorts. Bond (2011) concluded that that Gen Y represents a significant growth opportunity for banks and is expected to be a main earning force and customer base for banks and other financial services institutions. In the U.S.A, Gen Y's earning is expected to surpass Generation X by 2024, and sometimes within the next 5 years, Gen Y is projected to account for approximately 46% of the overall personal income generated in the U.S (Deloitte, 2022). In China, Generation Y consist of 400 million people, a group five times larger than its counterpart in the U.S. (China Statistical Yearbook, 2021), which presents unique characteristics such as being tech-savvy, information oriented, highly selective, and financially knowledgeable.

Gen Z makes up 30% of the world population and is reported to include 20% of Chinese population (Schlossberg, 2016). Compared to the millennial, Gen Z has been influenced by friendship-based parenting style and given more liberties. They seek fairness and truth instead of guidance in their decision-making process (Macky et al., 2008). Gen Z customer cohort is characterized by their active use of technology as they grew up with information technology and constantly seek contents that meet their desires (Topalova, 2021). They also like to be involved or engaged in process and various experiences. Thus, the focus of building healthy customer relationships with this customer group is to provide comprehensive, relevant and authentic information (Topalova, 2021). Due to their better educational background and innovative mindsets, the Gen Z population represents a potential high-income customer group. This will not only lead to their future purchase of various financial services (Tank, 2005), but

also enable them to adopt to bank's self-service systems which could significantly lower their bank's operational costs (Spero, 2004). Financial institutions such as retail banks are facing critical challenges in comprehending customers from new generations as their traits are relatively new. For instance, Berraies, Ben Yahia, and Hannachi (2017) found that the relationships between the impacting elements and the satisfaction perception differed significantly among different age groups ((Jordaan & Ehlers, 2009). Banks need to modify their financial products for customers of different generations in a highly customized approach (Dospinescu et al., 2019).

- Hypothesis Development: Service Quality and Customer Satisfaction
This research posits that perceived service quality by Gen Y and Gen Z customers could influence their overall satisfaction towards bank service in China. Satisfaction is a function of the degree of congruency between desires and perceived reality (Oliver, 1999). Empirical studies have been supporting the notion that service quality is a determining factor of customer satisfaction across various service sectors (Lin, Chiu, & Hsieh, 2001; Patterson, 2007; Alnawas & Hemsley, 2019; Nunkoo et al., 2020). In the banking industry, similar supporting evidence were also provided by many empirical research studies. Yilmaz, Ari, and Gürbüz (2018) claimed that bank service quality dimensions, such as reliability, physical appearance, and accessibility, could significantly influence customer satisfaction in the banking sector in different cultural settings. Focusing on the Mauritius banking sector, Teeroovengadum (2020) found that all service quality dimensions had a positive impact on customer satisfaction. In their research covering 227 banking customers, mainly students and paid workers in Vietnam, Nguyen et al. (2020) concluded that the five factors of service quality showed a positive correlation with customer satisfaction. In their studies of the Islamic banking sector of Indonesia and Islamic banks in Jordan both Afifah and Kurniawati (2021) and Dandis et al. (2021) provided evidence that all service quality dimensions positively affect customer satisfaction. There are also other studies, however, in which it was found that only certain dimensions of customer perceived service quality impacted customer satisfaction.

For example, in their study of the Pakistan banking industry, Raza and Umer (2020) determined that only the tangibility, responsiveness and reliability dimensions of service quality positively influenced customer satisfaction. Based on the prevailing evidence available in prior studies, the following hypotheses have been developed:

H1. *There is significant correlation between the tangibility dimension and customer satisfaction.*

H2. *There is significant correlation between the responsiveness dimension and customer satisfaction.*

H3. *There is significant correlation between the reliability dimension and customer satisfaction.*

H4. *There is significant correlation between the assurance dimension and customer satisfaction.*

H5. *There is significant correlation between the empathy dimension and customer satisfaction.*

- Hypothesis Development: Generation Cohorts and Service Quality
This study postulates that Gen Y customers in China perceived bank service quality to be higher than do Gen Z customers. As asserted by the generational theory, groups of people born during a specific time span or a political and social moment often share similar values and belief systems (Howe & Strauss, 2007), which suggests that they tend to adopt analogous criteria when evaluating the quality of products and services (Loureiro & Sarmento, 2018). For instance, in their empirical study of tourism consumer behavior, Li et al. (2013) concluded that significant

differences could be identified among four generations cohorts in five behavior domains, which among others included service quality. Another research conducted by Gardiner, Grace, and King (2014) found that Australian travelers belonging to three different generations have different perceptions of quality and the functional value of travelling services. Similar evidence were also found in studies on the banking industry (Dospinescu et al., 2019; Loureiro & Sarmento, 2018). Moreover, as we saw when discussing the generational theory, going through identical social events, such as for example, the emergence of advanced technological developments, further contribute to shaping Gen Z's principal values and 'peer personality' that will guide their behavioral actions. Gen Z people are 'I-natives', i.e., people born in a high-tech society, and therefore the most tech savvy group of all the generations. They are information driven, highly cynical and skeptical about product attributes (Topalova, 2021). In their study in Indonesian and the UK, Priporas, Stylos, and Fotiadis (2017) concluded that Gen Z population has higher expectations of service quality when compared to other generation cohorts. This finding was also supported by Ayuni (2019). Some studies have reported contradictory results regarding generational differences of customers' perceived quality. For example, in their study in the tourism industry in Malaysia, Cheng et al. (2017) concluded that the results from their empirical research showed that the generational gap did not have a significant effect on the relationship between customers perceived service quality and satisfaction. In light of the above, he following hypothesis can be proposed::

> **H6**: *Generational differences between Gen Y and Gen Z will influence how perceived bank service quality and customer satisfaction compare.*

Based on the aforementioned literature, the following research framework has been developed:
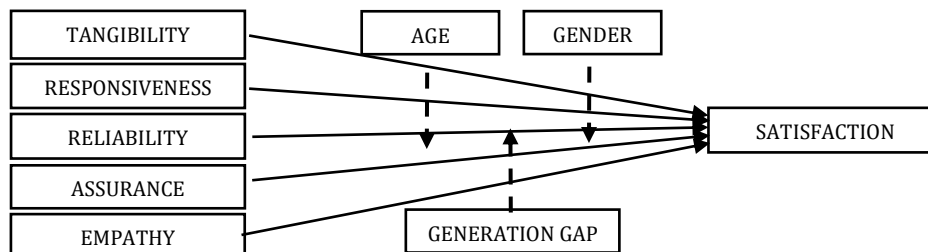
Figure 1: Research Framework (created by the author for this study)

3. Methodology

The questionnaires used in this quantitative research study were distributed and collected in Shenyang city, the fastest-growing industrial city in the northeastern region of China. Given that the unprecedented economic growth of Shenyang requires various necessary financial products and services, it has naturally attracted the presence of both domestic and international banks, making it a suitable experiment location for this research study. Due to the strict Chinese government lockdown policy during the Covid 19 pandemic, the snowballing sampling method was used. Approximately 400 questionnaires were distributed through online and offline platforms, and 334 were returned. Among the returned questionnaires, 63 were incomplete and 41 were problematic and excluded from the sample during the data cleaning process, which resulting in a final sample size of 230 responses. The respondents' demographic characteristics are summarized in Table 1. 46.5 percent of the participants were between 18 and 25 years old and there were slightly more female respondents as they accounted for 57.40 percent of the total respondents. 67.80 percent of the participants in this research had a Bachelor' degree.

Generation Y participants were slightly more than Generation Z groups, as they accounted for 51.7% of the total sample.

Table 1: Demographic Characteristics of the Sample

Variable	Group	Frequency	Percentage
Age	11-17	3	1.3%
	18-25	107	46.5%
	26-33	31	13.5%
	34-41	89	38.7%
Gender	Male	98	42.6%
	Female	132	57.4%
Education Level	Bachelor	156	67.8%
	Master	21	9.1%
	Doctoral	4	1.7%
	Diploma	49	21.3%
Generation	GenerationY	119	51.7%
	Generation Z	111	48.3%

The survey questionnaire consisted of 22 items and was evaluated with a five-point Likert scale. The measurement items were adapted from prior studies discussed above, in which service quality was measured using five key dimensions, namely, tangibility, responsiveness, reliability, assurance and empathy as originally proposed by Parasuraman (1994). The satisfaction measurement scale was adapted from Ehigie (2006). It contains 5 items. Three demographic information questions were also included at the end of the questionnaire. In total, the questionnaire included 30 items. As can be seen in this research framework (Figure 1 above), the control variables in this study are the participants' gender and age, which may have various effects on customer perception of service quality as suggested by prior empirical studies (Cooil, 2007; Homburg, 2001; Oña, 2021; Qayyum, 2013). Ganesan-Lim, Russell-Bennett, and Dagger (2008), for example, stated that age influences customer satisfaction due to physical and mental developments and accrued life experiences. Elder consumers have more accumulated shopping experience and tend to avoid exerting more cognitive efforts to seek new information such as, for instance, comparing different alternatives. They rely instead on a heuristics approach or on schema-based processing. In addition, Stafford (1996) concluded that, when conducting business with banks, service quality was more essential to female customers than to their male counterparts.

A reliability test was conducted for the five measurement dimensions with a minimum threshold of 0.60 (Nunnally, 1994). The results show that the Cronbach's alpha for all the quality dimensions in the SERVPERF construct were 0.733, 0.593, 0.807, 0.662 and 0.688, respectively (see Table 2). This means that the reliability of the adopted SERVPERF construct in this research met the threshold. The Cronbach's alpha for the customer satisfaction items was 0.821, pointing to the internal reliability of the scale.

Table 2: Summary of Instrument's Reliability

Dimension	Cronbach's Alpha
Tangibility	.733
Responsiveness	.693
Reliability	.807
Assurance	.662
Empathy	.688
Satisfaction	.821

4. Results and Discussion

- Findings on Service Quality Perception

Table 3 shows that on the dimension of tangibility, the rating of Gen Y cohort is higher than that of Gen Z except for one item. item (tangibility 4). On item 4 ("My bank should use financial materials that are easy to understand"), the perception of quality of Gen Y is lower than that of Gen Z, with a -0.12 in mean score rating, which indicates that financial material that is easy to understand was perceived as more important by Gen Z than by Gen Y customers.

Table 3: Descriptive Statistics of Tangibility Dimension

Dimension Items	Mean (Gen Y)	SD	Mean (Gen Z)	SD
Tangibility 1	4.13	.688	4.11	.718
Tangibility 2	4.05	.735	4.02	.646
Tangibility 3	4.04	.588	4.04	.660
Tangibility 4	3.78	.794	3.90	.924

As Table 4 shows, the overall rating of Gen Y cohort on responsiveness is lower than that of Gen Z. The largest mean difference pertains to item 5 ("My bank should provide accurate information about financial services e.g., statements, news, events, etc.") and the importance Gen Z placed on this item was greater than in the case of Gen Y by a rating sore of 0.12.

Table 4: Descriptive Statistics of Responsiveness Dimension

Dimension Items	Mean (Gen Y)	SD	Mean (Gen Z)	SD
Responsiveness 5	4.18	.777	4.30	.782
Responsiveness 6	3.89	.711	3.98	.687
Responsiveness 7	4.10	.616	4.14	.667
Responsiveness 8	4.08	.703	4.07	.710
Responsiveness 9	4.06	.693	4.07	.747

As Table 5 indicates, the overall scores of Gen Y cohort on this dimension is lower than that of Gen Z except for item 11 ("My bank fulfills customers' requirements at the right time"), with a mean rating score of 0.08.

Table 5: Descriptive Statistics of Reliability Dimension

Dimension Items	Mean (Gen Y)	SD	Mean (Gen Z)	SD
Reliability.10.	3.90	.838	4.06	.856
Reliability.11.	3.90	.896	3.82	1.011
Reliability.12.	4.02	.713	4.08	.752
Reliability.13.	4.13	.758	4.15	.811

As can be seen in Table 6, the assessment scores of Gen Y cohort on this dimension are lower than that of Gen Z with the largest mean difference pertaining to item 16 (-0.24) ("My bank provides support services to various customer groups.").

Table 6: Descriptive Statistics of Assurance Dimension

Dimension Items	Mean (Gen Y)	SD	Mean (Gen Z)	SD
Assurance 14	3.92	.869	3.95	.980
Assurance 15	3.86	.914	3.91	.977
Assurance 16	3.89	.661	4.13	.715
Assurance 17	4.02	.689	4.14	.625

Table 7 shows that nearly all the scores of Gen Y cohort on this dimension are lower than those of Gen Z. The largest mean difference pertains to item 19 ("My bank schedules services at hours that are convenient for customers") and item 22 ("My bank has a good understanding of the specific needs of different customer groups"). For both items, the rating scores of Gen Y were lower than those of Gen Y by 0.04.

Table 7: Descriptive Statistics of Empathy Dimension

Dimension Items	Mean (Gen Y)	SD	Mean (Gen Z)	SD
Empathy 18	3.84	.911	3.83	.933
Empathy 19	4.00	.759	4.04	.725
Empathy 20	3.94	.886	3.94	.866
Empathy 21	3.93	.800	3.95	.824
Empathy 22	3.90	.752	3.94	.887

Table 8 summarizes Chinese Gen Y and Gen Z overall customer evaluation of bank service qualities using the five dimensions identified for this study. It shows that for everyone of these dimensions, all the assessment scores of Gen Y cohort are lower than those of Gen Z. The largest mean difference pertains to the assurance dimension and the smallest ones to tangibility and empathy.

Table 8: Descriptive Statistics of All Five Dimension

Dimension Items	Mean (Gen Y)	SD	Mean (Gen Z)	SD
Tangibility	4.00	0.56	4.02	0.55
Responsiveness	4.06	0.53	4.12	0.50
Reliability	4.00	0.56	4.04	0.59
Assurance	3.92	0.57	4.03	0.65
Empathy	3.92	0.59	3.94	0.64

The psychometric quality of the measurement scales was evaluated prior to running a multiple-regression analysis. First, the potential issue of multicollinearity was assessed using the full Variance Inflation Factor (VIF) Test. The results indicate that all five dimensions were below 3.3, which is the maximum threshold as determined by Petter et al. (2007). Thus, there was no multicollinearity issue in this research. Next, the potential issue arising from common method bias (CMB) was assessed using the Harman's One-Factor Test (Podsakoff et al., 2003). The result of the test indicates that the items in the measurement scale in this research fit the data well as no single factor contain a factor loading greater than 50 percent. Thus, there was no CMB issue in this study.

- Hypothesis Testing Results
The results of the Correlation Test shown in Table 9 indicate that there is a relationship between the dimensions of customer perceived bank service quality and satisfaction among Gen Y and Gen Z cohorts in China and that this relationship is significant. The strongest correlation is between responsiveness and satisfaction and the weakest one between assurance and satisfaction. Thus, Hypotheses 1-5 are supported.

Table 9: Correlations between Service Quality Dimensions and Satisfaction

	Tangibility	Responsiveness	Reliability	Assurance	Empathy
Satisfaction					
Pearson	.235**	.403**	.284**	.145*	.277**
Sig. (2-tailed)	.000	.000	.000	.000	.000
** Correlation is significant at the 0.01 level (2-tailed).					
* Correlation is significant at the 0.05 level (2-tailed).					

It can also be observed in Table 10 that the average rating scores on the five dimensions were higher for Gen Z than for Gen Y cohort. The largest difference pertains to reliability (0.2935) and the smallest one to empathy (0.0807). However, as can be seen in Table 11, the mean differences were only found to be significant for three dimensions: responsiveness, reliability, and assurance at 0.05 level.

Table 10: Mean Comparison between Gen Y & Gen Z

	Generation	N	Mean
Tangibility	Gen Z	209	4.0263
	Gen Y	21	3.8333
Responsiveness	Gen Z	209	4.1005
	Gen Y	21	3.9333
Reliability	Gen Z	209	4.0459
	Gen Y	21	3.7524
Assurance	Gen Z	209	3.9844
	Gen Y	21	3.8571
Empathy	Gen Z	209	3.9378
	Gen Y	21	3.8571

Table 11: T-test for Mean Comparison between Gen Y & Gen Z

	t-test for Equality of Means			
	t	df	Sig. (2-tailed)	Mean Dif
Tangibility	.407	228	.684	.04420
	.491	26.808	.627	.04420
Responsiveness	2.621	228	.009	.34809
	2.759	24.785	.011	.34809
Reliability	3.286	228	.001	.41171
	2.578	22.268	.017	.41171
Assurance	2.049	228	.042	.27352
	1.788	22.975	.087	.27352
Empathy	.931	228	.353	.11652
	.985	24.847	.334	.11652

The effect of gender on customer perceived bank service quality is indicated by the comparative results of the regression analysis shown in Table 12. Gender is the most significant factor with regard to the assurance dimension (0.460 and 0.031) and the least significant with regard to the responsiveness dimension (0.014 and 0.000) of perceived bank service quality. In the meantime, its effects on the tangibility, reliability, and assurance dimensions were found to be insignificant.

Table 12: Effect of Gender

	Model 1 (Male)			**Model 2** (Female)		
	Standardized Coefficients	**t**	**Sig.**	**Standardized Coefficients**	**t**	**Sig.**
(Constant)		4.959	.000		3.200	.002
Tangibility	.043	.305	.761	.112	.991	.324
Responsiveness	.366	2.499	.014	.496	3.958	.000
Reliability	.119	.716	.475	.182	1.300	.196
Assurance	.108	.742	.460	.287	2.179	.031
Empathy	.058	.384	.702	.231	1.277	.204
Model 1	R = .408; R Square = .166; Adjusted R Square = .127; Std. Error of the Estimate = .58015					
Model 2	R=.502; R Square =. 252; Adjusted R Square = .219 ; Std. Error of the Estimate = .59923					

The effect of age on customer perceived bank service quality is indicated by the results of the comparative regression analysis of the two age groups shown in Table 13. Age was found to be significant factor in terms of responsiveness (0.148 and 0.000) and empathy (0.011 and 0.485) but had a relatively less significant effect in the assurance dimension (0.472 and 0.052) of perceived bank service quality. Its effects on the tangibility and reliability dimensions, though. were found to be insignificant.

Table 13: Effect of Age

	Model 1 (Under 20)			**Model 2** (20-24)		
	Standardized Coefficients	**t**	**Sig.**	**Standardized Coefficients**	**t**	**Sig.**
(Constant)		2.713	.008		4.022	.000
Tangibility	.003	.028	.978	.135	.1.080	.283
Responsiveness	.230	1.457	.148	.590	5.338	.000
Reliability	.071	.449	.655	.111	.761	.448
Assurance	.094	.722	.472	.281	1.969	.052
Empathy	.378	.384	.011	.118	.701	.485
Model 1	R = .445; R Square = .198 ; Adjusted R Square = .156; Std. Error of the Estimate = .66927					
Model 2	R=.571; R Square =. 326; Adjusted R Square = .293 ; Std. Error of the Estimate = .46893					

The results of the comparative regression analysis of the effect of generational difference on customer perceived bank service quality shown in Table 14 indicate that generational difference is a significant factor with regard to the responsiveness (0.164 and 0.000) and assurance dimensions (0.891 and 0.028). It has, however, a relatively less significant effect on the empathy dimension (0.058 and 0.075) of perceived bank service quality and its effects on the tangibility and reliability dimensions were found to be insignificant.
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Table 14: Effect of Generational Difference

	Model 1 (Gen Y)			Model 2 (Gen Z)		
	Standardized Coefficients	t	Sig.	Standardized Coefficients	t	Sig.
(Constant)		2.821	.013		5.273	.000
Tangibility	.665	.1.324	.205	.013	.149	.882
Responsiveness	.817	1.463	.164	.446	4.791	.000
Reliability	.061	.124	.903	.051	.475	.635
Assurance	.054	.139	.891	.217	2.213	.028
Empathy	.1.326	2.057	.058	.201	.1.789	.075
Model 1	R = .609; R Square = .370 ; Adjusted R Square = .161; Std. Error of the Estimate = .58236					
Model 2	R=.456; R Square =. 208; Adjusted R Square = .188; Std. Error of the Estimate = .58402					

By observing all standardized beta coefficients and p-values from the regression tests shown in Table 13, we can conclude that among the five dimensions of perceived service quality, only the responsiveness and assurance dimensions are significantly correlated to Chinese Gen Y and Gen Z customer satisfaction (p-value = 0.000 and 0.024, respectively). It can also be seen that the R-square is 0.186, indicating that both the independent and control variables in this regression model account for 18.6 of Gen Y and Gen Z customer satisfaction with bank service quality.

Table 15: Regression Table (Overall)

Model 3	Standardized Coefficients	t	Sig.	Collinearity Statistics	
				Tolerance	VIF
(Constant)		5.729	.000		
Responsiveness	.382	4.434	.000	.494	2.024
Assurance	.219	2.266	.024	.392	2.551
Model 3	R= .432 ; R Square = .186 ; Adjusted R Square = .161 ; Std. Error of the Estimate = .59512				

5. Discussion and Conclusion

This research offers unique information on the relationship between Chinese Gen Y and Gen Z's perception of service quality with customer satisfaction and on the effects of the generational differences between these two cohorts on this relationship. While the five service quality dimensions examined in this study correlated with customer satisfaction (see Table 9), only two of them, responsiveness, and assurance, were found to significantly influence customer satisfaction. Tangibility, reliability, and empathy were found not to have a significant impact on customer satisfaction (see Table 15). These findings are consistent in part with the results of a similar study conducted by Raza and Umer (2020) on the Pakistan banking industry in which they determined that tangibility, responsiveness, and reliability positively influenced customer satisfaction. Likewise, focusing on customer service quality in the Greek Cypriot banking industry, Arasli (2005) concluded that both empathy and reliability service dimensions influenced Greek customers' satisfaction and positive word of mouth. Thus, Chinese banks should consider improving some specific responsiveness and assurance aspects of their service such as providing sufficient and broad financial information for customers of different cohorts given the relatively low rating scores on these two dimensions.

Moreover, the results of the comparative multiple regression analysis show that the impact of the generational differences between Gen Y and Gen Z on their perception of bank service quality was only significant with regard to the dimensions of responsiveness and assurance, less significant with regard to empathy, and insignificant with regard to tangibility and reliability. Again, these findings corroborate only in part some prior relevant studies in which it was found that groups of people born during a specific time span and exposed to similar defining political and social moments often share similar values and belief systems and therefore tend to apply similar criteria when evaluating the quality of products and services (Li et al., 2013; Loureiro & Sarmento, 2018). Some prior studies, however, did not reach a similar conclusion. For instance, in their study of the tourism industry in Malaysia Cheng et al., (2017) determined that a generational gap had a significant effect on the relationship between customers perceived service quality dimensions and satisfaction, while Trialih et al. (2018) in their study on mobile banking usage concluded that generational differences only significantly affected the responsiveness and reliability dimensions. In this study, since empathy received the lowest rating score from both generation cohorts, understanding customer's specific needs, providing tailored consultation, customizing service, etc. should be the top priority of Chinese banks to improve this dimension and therefore perceived quality.

- *Theoretical Contribution*

This research study extends the body of knowledge in service marketing as it provides an understanding of the perception of service quality in the banking sector of Gen Y and Gen Z cohorts in China. Its theoretical contribution is threefold. Firstly, this research extends prior empirical studies on customer's perceived bank service quality, which were mostly carried out in developed countries in relation to their own banking systems, such as the US and European nations, or in other parts of Asia. Comparing Gen Y and Gen Z customer cohorts in China can expand the understanding of the concept of quality measurement and the behavioral characteristics of these two significant market segments in a Chinese context. Secondly, this study added new evidence into the existing body of literature on service quality and customer satisfaction by investigating the moderating effect of generational difference on Chinese customers' perceived bank service quality. This can be of benefit to marketing scholars and may broaden the contemporary theoretical knowledge regarding how generational differences impact customer perception of bank service quality. Thirdly, this research incorporates the examination of two demographic traits of Gen Y and Gen Z customers during the service quality assessment process (age and gender). Taking into account these two personal characteristics when evaluating the perception of service quality adds to the comprehension of their impact on Gen Y and Gen Z customers' bank service quality appraisal in China as they had not been formerly applied to a theoretical perspective. Overall, the findings in this research can fill the void in preceding service quality research by offering evidence of the impact of generational differences as compared in terms of age and gender.

- Managerial Implications

This research provides valuable insights to the marketing and management teams of Chinese banks intent on targeting Gen Y and Gen Z customers. Given the unique characteristics of these two cohorts, Chinese banks must encourage their marketing researchers and financial managers to better understand the key aspects of service quality as perceived by both Gen Y and Gen Z and communicate to them what they as banks do to ensure consistent service quality in a way in line with the preferred modes of communication of these two groups. For instance, banks could organize various social and promotional activities that encourage Gen Y and Gen Z customers to interact, discuss, and share their viewpoints on how to improve bank service quality. They should also actively communicate on social media and other preferred forms of communication of these generations. Maintaining a detailed customer profile of both Gen Y and

Gen Z may also help bank executives develop a comprehensive knowledge of the specific and unique characteristics of these two cohorts and adjust product planning, marketing, and post-sales service strategies accordingly. Finally, based on the evidence provided in this research, bank management should incorporate demographic factors such as age into their marketing strategy when building long-term relationship with Gen Y customers. For instance, banks should identify the most profitable customer groups, such as the 34-41 age group, which is usually at the top of their professional career and has an above average salary range. Then banks could selectively implement measures to improve the specific service quality dimensions of these key target customer segments.

- Limitations

Notwithstanding these findings, several limitations to this research study can be identified. Firstly, one concern of this study is the service quality measurement scales used as sophisticated statistical tests were not utilized to investigate the potential validity of the constructs analyzed. Secondly, in terms of quality of the collected data, since the respondents were recruited by using the snowballing technique, the information quality provided by 230 participants in this study may be questionable. So, samples with a greater variety of participants ought to be collected. Thirdly, given that the respondents in this study were entirely located in one single city in one province in the northeastern region of China, similar studies could be conducted in other cities of regions in China for comparison, such as Beijing, Shanghai, Guangzhou and so on. Lastly, alternative robust statistical studies could be conducted in order to reach stronger conclusions and explore the impact of other demographic factors such as income level, education level, which may also impact Gen Y and Gen Z customers' service quality perception in China. With the purpose of contributing to the prevailing body of knowledge regarding customer satisfaction in the Chinese banking industry, it is therefore suggested that parallel future studies should take into the consideration all the above-mentioned limitations.

References

Abdur, R. M. (2018). Customers' perception of service quality of banking sectors in Bangladesh. *International Journal of Law and Management, 60*(4), 922-933.

Afifah, A., & Kurniawati, N. A. (2021). Influence of service quality dimensions of Islamic banks on customer satisfaction and their impact on customer loyalty. *Journal of Islamic Economic Laws, 4*(2), 105-136.

Alnawas, I., & Hemsley-Brown, J. (2019). Examining the key dimensions of customer experience quality in the hotel industry. *Journal of Hospitality Marketing & Management*, *28*(7), 833-861.

Alwin, D. F., & McCammon, R. J. (2003). *Generations, cohorts, and social change. In Handbook of the Life Course (pp. 23-49).* Boston, MA: Springer.

Arasli, H. S. (2005). Customer service quality in the Greek Cypriot banking industry: Managing service quality. *An International Journal*, *15*(1), 41-56.

Ayuni, R. F. (2019). The online shopping habits and e-loyalty of Gen Z as natives in the digital era. *Journal of Indonesian Economy and Business, 34*(2), 168-184

Bandyopadhyay, N. (2016). Exploring service quality: A critical review of literature. *International Journal of Indian Culture and Business Management*, *13*(3), 358-377.

Baumann, C. B. (2007). Prediction of attitude and behavioral intentions in retail banking. International *Journal of Bank Marketing*, *25*(2), 102-116.

Beerli, A., Martin, J. D., & Quintana, A. (2004). A model of customer loyalty in the retail banking market. *European Journal of Marketing, 38*(1/2), 253-275.

Berraies, S., Ben Yahia, K., Hannachi, M. (2017). Identifying the effects of perceived values of mobile banking applications on customers. Int. J. Bank Mark, *35*(6), 1018–1038

Bond, C. a.-C. (2011). International students' perceptions of service quality in the UK banking sector: An exploratory study. *Journal of International Students*, *1*(2), 50-58.

Casillas, L. M., Elkins, S. R., Walther, C. A., Schanding Jr, G. T., & Short, M. B. (2021). Helicopter parenting style and parental accommodations: The moderating role of internalizing and externalizing symptomatology. *The Family Journal*, *29*(2), 245-255.

China Statistical Yearbook (2021). Retrieved March 24, 2022, from http://www.stats.gov.cn/tjsj/ndsj/2020/indexeh.htm.

Cooil, B. K. (2007). A longitudinal analysis of customer satisfaction and share of wallet: Investigating the moderating effects of customer characteristics. *Journal of Marketing*, 71(4), 67-83.

Cronin Jr, J. J., & Taylor, S. A. (1992). Measuring service quality: A reexamination and extension. *Journal of Marketing*, *56*(3), 55-68.

Cronin Jr, J. J., Brady, M. K., & Hult, G. T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *Journal of retailing*, *76*(2), 193-218.

Dandis, A. O., Wright, L. T., Wallace-Williams, D. M., Mukattash, I., Al Haj Eid, M., & Cai, H. (2021). Enhancing consumers' self-reported loyalty intentions in Islamic banks: The relationship between service quality and the mediating role of customer satisfaction. *Cogent Business & Management*, *8*(1), 1892256.

Deloitte (2021). Embrace the new era with ramped-up efforts in quality development - Chinese banking sector 2020 review and 2021 outlook, 21, 9-47.

Deloitte (2022). Striving for balance, advocating for change the DELOIT global 2022 Gen Z & millennial survey, Deloitte Touche Tohmatsu Limited, retrieved June 21, 2022, from: https://www.deloitte.com/global/en/about/people/social-responsibility/genzmillennialsurvey.html

Dimitriades, Z. (2007). Demographic predictors of service satisfaction in Greek public organizations. *Journal of Measuring Business Excellence*, *11*(2), 32-43.

Do, T. N. (2020). Impact of service quality, customer satisfaction and switching costs on customer loyalty. *Journal of Asian Finance, Economics and Business*, *7*(8), 395-405.

Dospinescu, O., Anastasiei, B., & Dospinescu, N. (2019). Key factors determining the expected benefit of customers when using bank cards: An analysis on millennials and generation Z. *Romania Symmetry*, *11*(12), 1449.

Ehigie, B. O. (2006). Correlates of customer loyalty to their bank: A case study in Nigeria. *International Journal of Bank Marketing 24*(7), 494-508.

Fornell, C. (1992). A national customer satisfaction barometer: The Swedish experience. *Journal of Marketing*, *56*(1), 6-21.

Fouzan, A. Q. (2020). Measuring customers satisfaction of Islamic banking sector in Jordan. *Humanities and Social Sciences Letters*, *8*(3), 310-322.

Gardiner, S., Grace, D., & King, C. (2014). The generation effect: The future of domestic tourism in Australia. *Journal of Travel Research*, *53*(6), 705-720.

Grönroos, C. (1982). An applied service marketing theory. *European Journal of Marketing*, *16*(7), 30-41.

Homburg, C. A. (2001). Personal characteristics as moderators of the relationship between customer satisfaction and loyalty: An empirical analysis. *Psychology & Marketing*, *18*(1), 43-66.

Hossain, M. A. (2009). Customer perception on service quality in retail banking in the Middle East: The case of Qatar. *International Journal of Islamic and Middle Eastern Finance and Management*, *2*(4), 338-350.

Howe, N., & Strauss, W. (2007). The next 20 years: How customer and workforce attitudes will evolve. *Harvard Business Review*, *85*(7-8), 41-52.

Kreituss, I., Vasiljeva, T., & Rokjane, B. (2021). Factors important for banks in attracting and retaining customers. *Reliability and Statistics in Transportation and Communication*, (195), 691-702.

Islam, S., & Ali, M. B. (2011). Measuring service quality of banks: An empirical study. *Research Journal of Finance and Accounting*, *2*(4), 74-85.

Jain, S. K., & Gupta, G. (2004). Measuring service quality: Servqual vs. Servperf Scales. *Vikalpa*, *29*(2), 25-38.

Jamal, A. (2003). Factors influencing customer satisfaction in the retail banking sector in Pakistan. *International Journal of Commerce and Management*, *13*(2), 29.

Jamal, A., & Naser, K. (2002). Customer satisfaction and retail banking: An assessment of some of the key antecedents of customer satisfaction in retail banking. *International Journal of Bank Marketing*, *20* (4), 146-160.

Jeong, M. S., Cha, J. E., & Jang, D.-H. (2016). Impact of the service quality of horseback riding experience on customer satisfaction and loyalty-in the case of Jangsu horse riding experience course. *Journal of Korean Society of Rural Planning*, *22*(2), 131-140.

Jordaan, Y., & Ehlers, L. (2009). Young adult consumers' media usage and online purchase likelihood. *Journal of Consumer Sciences*, *37*, 24-34.

Karin, A. V. (2004). Service quality and customer retention: Building long-term relationships. *European Journal of Marketing*, *39*(11), 1577-1598.

Kumar, A., & Lim, H. (2008). Age differences in mobile service perceptions: Comparison of Generation Y and baby boomers. *Journal of Services Marketing*, *22*(7), 568-577.

Kumar, S. M. (2010). Influence of service quality on attitudinal loyalty in private retail banking: An empirical study. *IUP Journal of Management Research*, *9*(4), 21-38.

Lee, Y. P. (2009). Banking service quality in Vietnam: A comparison of customers' and bank staff's perceptions. *The Journal of International Management Studies*,.*4*(2), 140-146.

Liat, C. B., Mansori, S., Chuan, G. C., & Imrie, B. C. (2017). Hotel service recovery and service quality: Influences of corporate image and generational differences in the relationship between customer satisfaction and loyalty. *Journal of Global Marketing*, *30*(1), 42-51.

Li, X., Li, X. R., & Hudson, S. (2013). The application of generational theory to tourism consumer behavior: An American perspective. *Tourism Management*, *37*(8), 147-164.

Lin, N. P., Chiu, H. C., & Hsieh, Y. C. (2001). Investigating the relationship between service providers' personality and customers' perceptions of service quality across gender. *Total Quality Management*, *12*(1), 57-67.

Lissitsa, S., & Kol, O. (2016). Generation X vs. generation Y: A decade of online shopping. *Journal of retailing and consumer services*, *31*(7), 304-312.

Loureiro, S. M. C., & Sarmento, E. M. (2018). Enhancing brand equity through emotions and experience: The banking sector. *International Journal of Bank Marketing*, *36*(5), 868-883.

Luo, Y. (2015). CEO power, ownership structure and pay performance in Chinese banking. *Journal of Economics and Business*, *8*(2), 3-16.

Macky, K., Gardner, D., & Forsyth, S. (2008). Generational differences at work: Introduction and overview. *Journal of Managerial Psychology,* *23*(8), 857-861.

Munnukka, J. (2007). Characteristics of early adopters in mobile communications markets. *Marketing Intelligence & Planning*, *25*(7), 719-731.

Narteh, B. (2018), Service quality and customer satisfaction in Ghanaian retail banks: The moderating role of price. *International Journal of Bank Marketing*, *36*(1), 68-88.

Naushad, A. H.-A. (2020). Service quality perception and customer satisfaction in Islamic banks of Oman. *Journal of Asian Finance, Economics and Business*, *7*(9), 499-504.

Nguyen, D. T., Pham, V. T., Tran, D. M., & Pham, D. B. T. (2020). Impact of service quality, customer satisfaction and switching costs on customer loyalty. *The Journal of Asian Finance, Economics, and Business*, *7*(8), 395-405.

Nunkoo, R., Teeroovengadum, V., Ringle, C. M., & Sunnassee, V. (2020). Service quality and customer satisfaction: The moderating effects of hotel star rating. *International Journal of Hospitality Management*, *91*(102414), 22-37.

Nunnally, J. A. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.

O'Neill, M., & Palmer, A. (2003). An exploratory study of the effects of experience on consumer perceptions of the service quality construct. *Managing Service Quality: An International Journal*, *13*(3):187-196.

Oliver, R. L. (1999). Whence consumer loyalty? *Journal of Marketing*, *63*(4), 33-44.

Oña, J. (2021). Service quality, satisfaction, and behavioral intentions towards public transport from the point of view of private vehicle users. *Transportation*, *49*(1), 237-269.

Parasuraman, A. Z. (1994). Reassessment of expectations as a comparison standard in measuring service quality: Implications for further research. *Journal of Marketing, 4*(2), 111-124.

Patterson, P. G. (2007). Demographic correlates of loyalty in a service context. *Journal of Services Marketing*, *21*(2), 112-121.

Petter, S., Straub, D., & Rai, A. (2007). Specifying formative constructs in information systems research. MIS quarterly, 623-656

Petzer, D. J., & De Meyer, C. F. (2011). The perceived service quality, satisfaction, and behavioral intent towards cellphone network service providers: A generational perspective. *African Journal of Business Management*, *5*(17), 7461-7473.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879.

Priporas, C. V., Stylos, N., & Fotiadis, A. K. (2017). Generation Z consumers' expectations of interactions in smart retailing: A future agenda. *Computers in Human Behavior*, *77*(12), 374-381.

Qayyum, A. K. (2013). An analysis of the antecedents of loyalty and the moderating role of customer demographics in an emerging mobile phone industry. *International Journal of Emerging Markets*, *8*(4), 373-391.

Ramachandran, R. (2020). Retail banking: Consumers perception and influencing factor role of SBI and ICICI Chidambaram. *International Journal of Scientific and Technology Research*, *9*(2), 809-811.

Raza, S. A., Umer, A., Qureshi, M. A., & Dahri, A. S. (2020). Internet banking service quality, e-customer satisfaction and loyalty: The modified e-SERVQUAL model. *The TQM Journal*, *32*(6), 1443-1466.

Sahiti, A. A. (2020). Factors affecting choice of commercial banks in Kosovo. *Academy of Accounting and Financial Studies Journal, 24*(1), 1-5.

Schewe, C. D., & Noble, S. M. (2000). Market segmentation by cohorts: The value and validity of cohorts in America and abroad. *Journal of Marketing Management*, *16*(1-3), 129-142.

Schlossberg, M. (2016). *Teen Generation Z is being called "millennials on steroids" and that could be terrifying for retailers. Business Insider Singapore.* Retrieved July 9, 2019, from https://www. businessinsider.sg/millennials-vs-gen-z- 2016-8/?r=US&IR=T.

Sohail, M. S., & Hasan, M. (2021). Students' perceptions of service quality in Saudi universities: The SERVPERF model. *Learning and Teaching in Higher Education: Gulf Perspectives*, *17*(1), 54-66.

Spathis, C. P. (2004). Managing service quality in banks: customers' gender effects. *Managing Service Quality, 14*(1), 90-102.

Spero, I. A. (2004). Agents of change: How young consumers are changing the world of marketing. *Qualitative Market Research, 7*(2), 153-159.

Stafford, M. (1996). Demographic discriminators of service quality in the banking industry. *Journal of Services Marketing, 10*(4), 6-22.

Su, C. W., Qin, M., Rizvi, S. K. A., & Umar, M. (2021). Bank competition in China: A blessing or a curse for financial system? *Economic Research-Ekonomska Istraživanja*, *34*(1), 1244-1264.

Tang, N., Wang, Y., & Zhang, K. (2017). Values of Chinese generation cohorts: Do they matter in the workplace? *Organizational Behavior and Human Decision Processes*, *143*(11), 8-22.

Tank, J. A. (2005). UK student banking revisited: Influences and the decision-making process. *Journal of Financial Services Marketing*, *10*(2), 152-164.

Teeroovengadum, V. (2020). Service quality dimensions as predictors of customer satisfaction and loyalty in the banking industry: Moderating effects of gender. *European Business Review*, *34* (1), 1-19.

Topalova, N. (2021). *The impact of marketing through Instagram influencers on consumer behavior in the fashion industry: Comparison of Millennials and Generation Z in Russia.* [Master's thesis, Geneva Business School, international Management, MBA.]https://www.scribd.com/document/511722260/Topalova-Natalia-2020-the-Impact-of-Marketing-Through-Instagram-Influencers-Consumer-Behavior-in-the-Fashion-Industry.

Trialih, R., Astuti, E. S., Azizah, D. F., Mursityo, Y. T., Saputro, M. D., Aprilian, Y. A., & Rizki, A. S. (2018). How mobile banking service quality influence customer satisfaction of generation x and y? In 2018 International Conference on Information and Communication Technology Convergence (ICTC), 827-832.

Wang, K., Huang, W., Wu, J., & Liu, Y. N. (2014). Efficiency measures of the Chinese commercial banking system using an additive two-stage DEA. *Omega*, *44,* 5-20.

Wood, J. (2018). Generation Z will outnumber Millennials by 2019. In *World Economic Forum.* Retrieved September 4, 2021, from: https://english.cw.com.tw/article/article.action?id=2087.

Yilmaz, V., Ari, E., & Gürbüz, H. (2018). Investigating the relationship between service quality dimensions, customer satisfaction and loyalty in the Turkish banking sector: An application of the structural equation model. *International Journal of Bank Marketing, 36*(6), 423-440.

Zeithaml, V. (2000). Service quality, profitability, and the economic worth of customers: What we know and what we need to learn. *Journal of the Academy of Marketing Science, 28*(1), 67-85.

Covid-19 Impact on the Business Process Outsourcing Sector in The Philippines: Is Work from Home to Continue?

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Abstract
Due to the COVID-19 pandemic, many people around the world were constrained to work from home. The unexpected shift to an online structure was challenging, especially for those lacking a proper setting to work effectively from home. After two years into the pandemic, this study seeks to assess the effects of a work from home setup on employees involved in the business process outsourcing industry in the National Capital Region in the Philippines. More specifically, it looks at the factors that shape their productivity and determine their work predilections after the pandemic. The study employed a survey questionnaire to gather data on 75 workers who had been working from home. A descriptive analysis was conducted to analyze the data. It was found that most of the respondents prefer working from home as it enables them to achieve a healthy work-life balance and provides a good working environment. The results also indicate that the level of productivity, job commitment, and job engagement parallels the one observed when working at their office. A majority of them would like to continue working from home even in the post-pandemic era.

Keywords: Work from Home, COVID-19, Business Processing Industry, Productivity, Job Commitment, Job Engagement

1. Introduction

In The Philippines, the first case of COVID-19 was reported in early 2020, and the first death recorded a few days later (ABS-CBN, 2020). On March 8, 2020, the government declared emergency and calamity for a period of six months and imposed a lockdown that prohibited civilians from going outside their homes except for getting basic necessities (Atienza, 2021). Domestic land, air, and sea transportation was suspended, and large gatherings, parties, and concerts banned. To mitigate the spread of the virus across the country, thousands of police officers and military personnel were deployed to ensure compliance and checkpoints were placed at all entry points in Manila. Moreover, various levels of quarantine were implemented, depending on the severity of the cases. They included: enhanced community quarantine (ECQ), modified enhanced community quarantine (MECQ), general community quarantine (GCQ), and modified general community quarantine (MGCQ) (IATF, 2020a: Quieta, 2020; Atienza, 2021). Obviously, the lockdowns enforced by the Filipino government not only affected individuals but also significantly impacted companies, both large and small, as most of them had to halt their operations, which kept a colossal percentage of the workforce from physically reporting to work and compelled companies to seek alternative work arrangements. Employers had little choice but to require their employees to work from home. (Vyas & Butakhieo, 2020).

This type of work set up, though, was not an entirely new construct as, even before the pandemic broke out, a growing number of jobs, most notable in the IT sector, enabled individuals to work from home (DuPlessis, 2019). Besides, before the first Industrial Revolution in the late 18th and early 19th centuries, most people, whether in agriculture, as skilled artisans, or as household managers, worked from home (Goloboy, 2008). In conjunction with the COVID-19 Inter-Agency Task Force for the Management of Emerging Infectious Disease, the Department of Health proposed several arrangements for conducting work from home (WFH), including a 'hybrid' work arrangement, i.e., a combination of on-site and remote work (IATF, 2020b). Given the latest advances in technology, companies recognized that employees should no longer be kept from working from home as WFH could be just as efficient (Yang, Kim, & Hong, 2021; Susilo, 2020). Little, however, is known about some of the basic characteristics of WFH, such as its impact on productivity and the standards that determine whether WFH is more or less productive than work from the office (WFO). With no apparent end in sight for the COVID-19 pandemic and the working trends established as a result, it is important for employers to be cognizant of stratagems apt to optimize WFH. Indeed, many firms are likely to continue to promote a hybrid form of WFH even after the pandemic ends, hence the significance of developing effective WFH policies, investing in innovative technologies, and addressing mental health problems. One key issue is whether WFH productivity is lower, higher, or comparable to WFO productivity (Mores, 2022).

This study addresses this issue in the context of the business process outsourcing (BPO) industry in Manila. BPO is a type of outsourcing that involves delegating one or more IT-intensive business processes to a third-party provider, who will then oversee, control, and manage the chosen process according to measurable performance criteria (Yang, Kim, & Nam, 2007). The BPO sector has long been a cornerstone of the Philippine economy, second only to remittances from overseas Filipino workers (Venzon, 2021). Thanks in no small part to the reputation of Filipino BPO employees as good communicators, Manila was recently named the business process outsourcing (BPO) capital of the world (Gallimore, 2021). The BOP workforce, largely made up of educated Filipinos with strong spoken English language skills and a deep understanding and appreciation of Western culture, has helped the country gain a competitive edge in this industry (ASEAN Briefing, 2017). It now holds 10-15% of the global BPO market, serving the USA, Europe, Japan, New Zealand, and Australia (Talmage-Rostron, 2021 During the Covid-19 pandemic, the BPO industry was one of the most stable industries as, due to the nature of its work, it was able to quickly adapt to the work-from-home setup (Venzon, 2021; Gallimore 2021).

Despite the pandemic, BPOs grew by around 1.8% in terms of head count and 1.4% in terms of revenue as they were able to continue with their businesses with 70% of their employees working from home during strict quarantine periods (Aning, 2021, Venzon, 2021). In 2019, BPO revenues contributed 7.3 percent of the country's gross domestic product (GDP). The Business Process Association of the Philippines (IBPAP) estimates that approximately 120,000 jobs were created between 2020 and 2021 (White, 2022). With 1.3 million Filipino employed in over 1,000 BPO companies, the country is seeing a 8-10% growth every year and is expected to surpass its 2022 target of 1.43 million full-time employees and $29.1 billion in revenues (Ochave, 2022). The Philippines is slated to remain a dominant offshore location for call centers (White, 2022). Expansion in the Iloilo, Davao, Dumaguete and Cagayan de Oro provinces is now contemplated to take advantage of lower costs and limited competition in these areas (Venzon, 2021). These provinces are seen as suitable for the opening of smaller "micro-call centers" and "hub-and-spoke centers" that would provide a hybrid WFH arrangement.

This study seeks to answer the following questions:
- What is the demographic profile of employees working from home?
- Are employees working from home experiencing their most productive self?
- What are the effects of working from home on employees?
- Which factors can contribute to the productivity of employees working from home?
- What are the post-pandemic work preferences of these employees?

2. Review of Related Literature
- *Work from Home*

WFH otherwise known as 'remote work' or 'telework' refers to a flexible work arrangement in which employees operate in places that are far from their central offices or production facilities and are able to connect with their coworkers there via technology (Di Martino & Wirth, 1990). When the COVID-19 pandemic erupted, many companies shifted their operations and employees to a WFH approach. As noted above, the WFH concept was not novel, though. It had become more popular in the last decade as more occupations rely on computers and telecommunications, resulting in more people preferring to work from their homes and having reliable home internet connection (Gibbs, Mengel, & Siemroth, 2021). Prior to the coronavirus outbreak, several companies have already recognized the benefits of working from home to their businesses and their employees (Invest Northern Ireland, 2021). Working from home became advantageous for employers during the pandemic as it gave some of them the freedom to keep their businesses functioning while prioritizing the health and well-being of their stakeholders as part of their public health responsibilities. The pandemic also provided companies with a realistic assessment of how WFH can affect the business and staff, allowing them to consider working from home as a viable alternative for their personnel (Mores, 2022). Employers now have direct knowledge of the advantages and disadvantages of working from home (Hackney et al., 2022; Wu & Chen, 2020). This knowledge could be extremely beneficial to employers in choosing the ideal working process for their business.

- *WFH Advantages and Disadvantages for Employers*

WFH can be both advantageous and disadvantageous to the productivity of employees. Some *studies have shown that WFH may have an insignificant impact on employee productivity and in some cases even increases it. For instance,* in their study of IT professionals, Pantajali and Bhatta (2022) found that a majority of them reported an increase in their productivity while working from home, citing, among other factors, the time saved from not having to commute. Awada et al. (2021) concluded that workers' perceptions of their overall productivity level did not change relative to their in-office productivity before the pandemic. They found that during a typical WFH day, the amount of time spent at a workstation increased by about 1.5 hours. People who had children in school, possessed an office desk or an adjustable chair, and had altered their work hours reported working longer hours. Being permitted to work from home, staff will also feel an increased level of trust from their employer, which can contribute to enhancing staff loyalty. Moreover, Promoting WFH may increase job satisfaction as employees are likely to experience higher perceived autonomy, less work-family conflict, and telecommuting efficiency (Schall, 2019). Home-based employees are likely to feel more trusted by their employer as the working relationship is not as closely monitored and employees are allowed a degree of autonomy to get on with their work. As employee job satisfaction increases, the level of productivity also increases which in turn is beneficial to the company (Inayat & Khan, 2021).

All that said, WFH may encourage shirking and result in lower individual work because companies have less opportunities to monitor their employees. Tejero, Seva, and Fadrilan-Camacho (2021) reported that the productivity level of the employees sampled in their study

declined when working from home. Kitagawa et al. (2021) cited unsuitable workspace and communication issues as the main causes of productivity losses. In their studies, Gibbs et al. (2021) found that the amount of time spent on coordination tasks and meetings grew, while the number of uninterrupted work hours significantly declined. While it brings notable benefits to the organization, such as cost reduction and increased employee satisfaction, the new work style also poses challenges to management. WFH can make employees feel disconnected from their colleagues and the organization, which can make managing them and monitoring their performance difficult (Aczel et al., 2021). Although home working removes the distractions that may occur in the office if a worker does not have a suitably quiet and dedicated working space at home, he/she may get easily distracted by household noises or other household members. Where an office provides a clear physical distinction between work and home life, working at home can lead to staff struggling to differentiate between work-life and home-life (Mores, 2022). It can also be harder to maintain team spirit when employees are working at home on their own (Invest Northern Ireland, 2021). In addition, not having staff in close physical proximity may lead to difficulty in maintaining staff development and upgrading skills. Finally, information security problems are more likely to occur when staff are working from home.

- WFH Advantages and Disadvantages for Employees
Compared to working onsite, WFH significantly reduces travel time and offers more flexible working hours for employees. Ipsen et al. (2021) concluded that WFH can increase the efficiency of employees by giving them greater control over their work, leading to an improved work-life balance. It also improves staff health and wellbeing by eliminating the need for a commute to work that can be stressful to employees and by minimizing their exposure to health risks. Employees are more likely to feel happier and more energized working from home. There is therefore less of a chance that their immune system be negatively impacted by burnout. Taking well-being also into account, many employees would find it ideal to work more from home in the future (Bucurean, 2020). This is all the more feasible as new communication technologies and high-speed internet have removed all the hardware obstacles of working from home (Baksh, 2013). Studies on the work-family boundary also show that most participants in WFH programs are able to set a distinct boundary when they work from home. Moreover, disturbances at the workplace have become a key factor for them to work from home (Mores, 2022; Pantajali & Bhatta, 2022).

The switch to WFH, however, can be challenging because of the distractions that may be present at home. It may have a negative impact on employees' mental health if they are unable to find a routine that works for them, are struggling to separate work and home life or are feeling isolated (Gibbs et al., 2021; Teodorovicza et al., 2021). One major drawback of working remotely is the lack of professional boundaries. Indeed, working and living in the same environment might make it difficult for remote employees to distinguish between work and personal life (Wilson, 2021). The loss of work-life balance can be detrimental to one's mental health and overall well-being, which can further affect one's work. Another major disadvantage of working from home is the presence of household chores and responsibilities. Gibbs et al. (2021) determined that employees who had children at home worked longer hours and produced less than those who did not have children. Their study also showed that women experienced a higher decrease in output. Moreover, even though working from home may reduce transportation expenses and increase time spent on work and personal activities, communication and coordination costs rise. According to Teodorovicza et al. (2021), the reallocation of time is heterogeneous among employees and organizations. They found that managers, in particular, redirected the time saved from commuting into additional time spent in meetings, perhaps as a way to offset the impromptu encounters that occur in the workplace

and enable exchanges.

- Business Process Outsourcing Industry

As noted earlier, BPO is a type of outsourcing whereby companies hire a third-party service provider to handle one or more of their business functions ((Yang et al., 2007). Typically, companies engage with BPO vendors to improve their back (e.g., payment processing, quality assurance, and information technology services) and front office operations (marketing, sales, customer relations, and grievance redressal). The Corporate Finance Institute Team (2022) has identified three types of outsourcing, based on the country of origin of the service provider: (i) onshore outsourcing (when the service provider is from the same country), (ii) nearshore outsourcing (when the service provider is from a neighboring country), and (iii) offshore outsourcing (when the service provider is in a different country). Outsourcing call centers can be 'inbound' or 'outbound'. Inbound call centers are centers that receive calls for customer service, technical support, inbound sales, as well as upgrade and renewal inquiry calls. Outbound call centers are centers that call their clients to generate sales for their companies. Moreover, calls can be sub-divided into cold calls (e.g., appointment setting, telemarketing, tele sales, and market research) and warm calls (Butler, 2022). One of numerous reasons why some organizations prefer to outsource some of their business functions. is its ability to reduce costs and maximize profitability (Venzon, 2021). For one, instead of purchasing equipment and hiring more employees to perform those tasks in house, companies can outsource some tasks from service providers. For another, BPO companies generally excel at what they do. Also, BPO can help organizations, especially start-ups, focus on their core business activities. Lastly, it can help them enter new markets as some activities require local knowledge of the market. As noted in the introduction, the Philippines is currently ranked as a top outsourcing provider and is slated to continue to be one of the world's leading outsource center.

Based on the above discussion, the following conceptual framework was developed
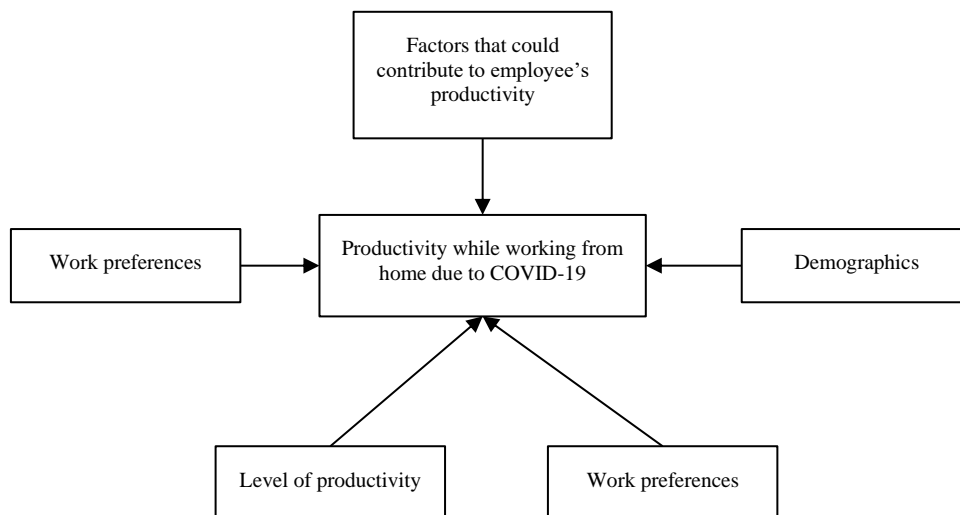
Figure 1: Conceptual Framework (created by authors for this study)

4. Methodology

The researchers opted for a quantitative and descriptive research design to achieve the objectives of this study. A non-probability sampling technique (namely, purposive sampling) was used to gather respondents. To be eligible to participate in this study, the respondents had to meet the following criteria: (i) they had to be at least 18 years old; (ii) they had to be living within Metro Manila; (iii) since this study focuses on the BPO industry, the respondents also had to be employed at a BPO company. Due to the limitations imposed by the pandemic-

induced restrictions, the researchers used Google forms to design a survey questionnaire to be exclusively distributed online. It addresses the research questions articulated in the introduction. Table 1 shows the research questions and their corresponding items.

Table 1: Research Questions and Corresponding Survey Questionnaire Items

Research Question	Survey Questionnaire Item
What is the demographic profile of employees working from home?	a) Gender b) Age
Are employees working from home experiencing their most productive self?	a) Positive or negative response on whether the news related to COVID-19 affected their productivity b) Self-rating in terms of productivity level, job commitment, and job engagement.
What are the post-pandemic work preferences of these employees?	a) Workplace preference (office or home?) b) Employer preference (current or change?) c) Job (stay with current job or change?) d) Work schedule (fixed or flexible)? e) Team (remote or face to face?)
What are the effects of working from home on employees?	Rating of their well-being in terms of: a) Feeling exhausted b) Feeling stressed c) Feeling overworked d) Feeling digitally exhausted e) Feeling unconnected and lonely f) Being myself g) Need to energize h) Meeting overload i) Chat overload j) Email overload k) Work overload
What are the factors that could contribute to the productivity of employees working from home?	Rating of their work environment in terms of: a) Suitable and comfortable workplace at home b) Good network connectivity c) Equipment needed to perform work d) Support from immediate supervisor e) Supportive team f) Communication with immediate supervisor, teammates, and colleagues g) Work-life balance h) Rating of digital-related activities i) Virtual meetings j) Chat with supervisor and co-employees k) Responding to emails

The 32 questions included in the questionnaire were answerable using a 5-point Likert scale, ranging from 1 = Strongly Disagree or Never to 5 = Strongly Agree or Always. As well as a 3-point Likert scale (e.g., 1 = Less, 2 = Equal, and 3 = More). Following the distribution of the questionnaire, a total of 75 respondents employed in the BOP industry were garnered. The data was analyzed using percentage and Likert scales used to measure people's attitudes, opinions, or perceptions. The following scales shown in Tables 2 and 3 were used for interpretating the data.

Table 2: Data Interpretation for 5-point Likert Scale

Range	Interpretation
1.00 - 1.49	Strongly Disagree
1.50 - 2.49	Disagree
2.50 - 3.49	Undecided
3.50 - 4.49	Agree
4.50 - 5.00	Strongly Agree

Table 3: Data Interpretation for 3-point Likert Scale

Range	Interpretation
1.00 - 1.49	Less/Never
1.50 - 2.49	Equally/ Sometimes
2.50 - 3.00	More/Always

4. Results and Discussion

Most of the respondents (43 or 57.33%) were females. Also as shown in Table 4, 21 of them (28%) were between 21-25 years old, 14 (18,7%) between 31-35 years old and 12 (16%) between 26-30 years old, indicating that the BPO sector heavily relies on a young and predominantly feminine workforce.

Table 4: Age of the Respondents

Age Bracket	Number of Respondents	%
21-25	21	28
26-30	12	16
31-35	14	18.67
36-40	10	13.33
41-45	10	13.33
46-50	0	0
51-55	6	8
56-60	2	2.67
61-66	0	0
Total	**75**	**100**

- Effect of COVID-19 Pandemic on Productivity

As shown in Table 5, an overwhelming percentage of the respondents (90.67%) like working from home. They see working from home as being more conducive to their being dynamic in terms of work and output. 58.67 percent of them said that news regarding the pandemic affected their productivity.

Table 5: Effect of COVID-19 Pandemic on Employees' Productivity

Answer	Do you like working from home?	%	Do news regarding COVID-19 affect your productivity?	%
Yes	68	90.67	44	58.67
No	7	9.33	31	41.33
Total	**75**	**100**	**75**	**100**

- Respondents' Overall Well-Being

The participants were asked to score 11 statements regarding their overall well-being as expressed in terms of exhaustion, stress, workload, and work-life balance. As Table 6 shows, for the majority of them, feeling exhausted, stressed, and having to deal with a workload were not issues they could agree or disagree with. Meanwhile, most of the respondents felt that they needed to exercise. This may be because they spent long hours on computers and other

electronic devices. Most of them, however, did not feel they were overworked and unconnected and isolated. As a matter of fact, the majority of them found that they had a healthy work and life balance.

Table 6: Respondents' Overall Well-being

	Mean	Interpretation
I feel exhausted.	2.57	Neutral
I feel stressed.	2.67	Neutral
I feel overworked.	2.41	Disagree
I feel digitally exhausted.	2.57	Neutral
I feel the need to exercise.	3.71	Agree
I feel meeting overload.	2.53	Neutral
I feel chat overload.	2.55	Neutral
I feel email overload.	2.6	Neutral
I feel unconnected and lonely.	2.49	Disagree
I do not have time to do things I like to do.	2.69	Neutral
I have a healthy work and life balance.	3.93	Agree

Interpretation: 1.00 to 1.49 = Strongly Disagree; 1.50 to 2.49 = Disagree; 2.50 to 3.49 = Neutral; 3.50 to 4.49 = Agree; 4.50 to 5.00 = Strongly Agree

- Respondents' Working Environment at Home

The responses shown in Table 7 indicate that most of the respondents had a suitable working environment at home. It is clear from their answers that, after two years of pandemic and lockdown measures, most of them have established a comfortable workspace at home, secured satisfactory internet connectivity, and have all the tools necessary to perform well. Furthermore, since they could easily contact their immediate supervisors and team members, the respondents felt that they were supported by them. Therefore, it can be concluded that one of the reasons why the respondents enjoyed working from home is because they had a good working environment and supportive coworkers, while enjoying being with family members

Table 7: Respondents' Working Environment at Home

Statements	Mean	Interpretation
I have a suitable and comfortable workplace at home.	4.03	Agree
I have good network connectivity.	3.96	Agree
I have all the equipment I need to perform my work.	3.85	Agree
I have all the support from my immediate supervisor.	4.08	Agree
I have a team that supports me.	4.08	Agree
I can easily communicate with my immediate supervisor.	4.13	Agree
I can easily communicate with my colleagues.	4.07	Agree
I enjoy working from home.	4.09	Agree

Interpretation: 1.00 to 1.49 = Strongly Disagree; 1.50 to 2.49 = Disagree; 2.50 to 3.49 = Neutral; 3.50 to 4.49 = Agree; 4.50 to 5.00 = Strongly Agree

- Working at Home vs. Office

The results shown in Table 8 indicate that the participants often communicated with their supervisors and colleagues and responded to emails. Most of them also said that they occasionally have virtual meetings. Since all the individuals surveyed work in the BPO industry, they would routinely need to communicate with their supervisors and colleagues and answer emails on a regular basis and only have virtual meetings on a *had doc* basis.

Table 8: Respondents' Work at Home

Statements	Mean	Interpretation
Virtual meetings	3.32	Sometimes
Chat with supervisor	3.99	Often
Chat with colleagues	4.01	Often
Respond to emails	3.88	Often

Interpretation: 1.00 to 1.49 = Never; 1.50 to 2.49 = Rarely; 2.50 to 3.49 = Sometimes; 3.50 to 4.49 = Often; 4.50 to 5.00 = Always

As Table 9 shows, the level of productivity, job commitment, and job engagement of the respondents are consistent with those recorded when they work from their offices. What can therefore be inferred from these results is that working from home does not adversely affect their level of productivity, commitment to their responsibilities, and dedication to their work. Although working from home may increase the level of productivity of some of them, the results indicate that overall, it had no bearing either way.

Table 9: Respondents' Productivity, Commitment, and Engagement at Home vs. Office

Statement	Mean	Interpretation
Level of productivity	2.37	Equal
Job commitment	2.4	Equal
Job engagement	2.4	Equal

Interpretation: 1.00 - 1.49 = Less; 1.50 - 2.49 = Equal; 2.50 - 3.00 = More

- Post-Pandemic Future Plans
Even when the pandemic is over, 53.33 percent of the participants (40) indicated they would still prefer to work from home in the future. An almost similar number of them, 46.67 percent (35), however, indicated that would rather go back to the office (see Table 10 below). Thus, only a thin majority of the respondents find working from home to be more beneficial than reporting back to their offices even though Table 5 above shows that 90.67 percent of the participants like working from home.

Table 10: Workplace Preference

Workplace Preference	Number of Respondents	%
Willing to work in the office	35	46.67
Want to continue working from home	40	53.33
Total	**75**	**100**

Table 11 shows that 71 respondents (94.67%) would like to stay with their current employer even after the pandemic is over while 4 of them (5.33%) would like to change employer. Since earlier findings show that most of the respondents feel they are supported by their supervisors and colleagues and have a manageable workload, it can be concluded that the majority of them would still like to stay with their current employer for these very reasons.

Table 11: Employer Preference

Employer Preference	Number of Respondents	%
Stay with current employer	71	94.67
Change employer	4	5.33
Total	**75**	**100**

Table 12 indicates that 70 respondents (93.33%) would like to stay with their current job while 5 of them (6.67%) would like to change job. The reasons why the vast majority of them would continue in their current employment may be similar to those accounting for the results in Table 12. One of the respondents who stated that he/she would prefer to change job indicated

that he/she wished to remain with his/her current employment but hoped to change department and/or position.

Table 12: Job Preference

Job Preference	Number of Respondents	%
Stay with current job	70	93.33
Change job	5	6.67
Total	**75**	**100**

As Table 13 indicates, 39 of the respondents (52%) would like to have a flexible work schedule after the pandemic whereas almost the same proportion of participants (36 or 48%) would not. Those who favor a flexible work schedule enjoy the fact that they could adjust their work depending on their level of productivity and spare more time for personal matters. Those still preferring a fixed work schedule may do so because it enables them to better coordinate with their supervisors and colleagues regarding work and makes it easier for them to focus on achieving their goals and meeting project deadlines.

Table 13: Work Schedule Preference

Work Schedule Preference	Number of Respondents	%
Fixed work schedule	36	48
Flexible work schedule	39	52
Total	**75**	**100**

Lastly, with regards to meetings, 39 of the respondents (52%) preferred face-to-face meetings while 36 of them (48%) preferred having virtual meetings even after the pandemic-induced lockdown had been lifted. Since both options present advantages and disadvantages, the results for both are similar. Face-to-face meetings provide greater flexibility in terms of collaboration, innovation, and connection-building. Moreover, face-to-face meetings are more conducive for employees to focus on the goals of the meeting as they prevent them from multitasking or completing other tasks. Virtual meetings, on the other hand, save time and allow employees to contribute their thoughts and ideas regardless of where they are.

Table 14: Meeting Set-up Preference

Work Set-up	Number of Respondents	%
Face to face	39	52
Virtual	36	48
Total	**75**	**100**

5. Conclusion and Recommendations

One of the effects of the COVID-19 pandemic is its capacity to influence the attitudes and partialities of employees who in the past may have been impervious to the idea of working from home. So much so that the pandemic is now seen as an accelerator of trends, including the WFH trend, that was nascent in the pre-Codid-19 era. One of the consequences is that, as the number of individuals working from home has substantially increased, the stigma associated with flexible working has lessened. As this study shows, working from home has been gaining currency among companies and employees. Eventually, the pandemic may well be remembered for revolutionizing the way people work. Allowing employees to work in the comfort of their homes allows them to rationalize their time and devote more of it to fecund activities such as spending more time with their families and pursuing personal interests, whatever these may be. While, as can be expected, the COVID-19 pandemic distressed the majority of the respondents employed in the BPO industry at the time it broke out, it can be

inferred that, in the end, most of them were positively affected given than presently, the majority of them prefer to work from home and would still opt to continue working from home even after the pandemic if they were given a say in this matter.

The findings demonstrated that most of the respondents were in a neutral position on whether working from home led to feelings of exhaustion and resulted in being disconnected from family and friends, which further supports the view that WFH can lead to a healthy work-life balance. In addition, most of the respondents indicated that having a functional workspace and experiencing support from managers and co-workers as part of the virtual setup enables them to work effectively and productively at home. All these circumstances account for the fact that, as most of the respondents reported, their level of productivity, commitment, and job engagement when working form remains very much the same as when they physically report to work. All that said, this study also highlights the fact that despite the aforementioned advantages of working from home as outlined by the participants in the survey, some employees still prefer to report to the office, which bring to the fore the question of why. The answer is multifactorial. One important motivation highlighted in the questionnaire is the desire for more in-person social association amid colleagues. For some, working at home can feel lonely, even though they may have family members around them all day. The lack of adequate equipment or space to carry out the work was also cited as a reason for the preference for an office work set up. Another reason for favoring working in the office is that the confine between work and family life can be difficult to perceive and can make concentrating on one's work a real challenge.

- Recommendations to Managers
In light of the above, it is clear that managers must have unrestricted discussions with employees to determine what working arrangements are best for them, assuming that the job makes the two options possible, which may not always be the case depending on the nature of the job. As also made clear in this study, fulfilling in a properly balanced way work and home-based responsibilities is likely to increase the productivity of employees as they feel satisfied, respected, and valued. In order to reach the right decision as to which approach is more appropriate and suitable to both sides under the circumstances, it is imperative that both managers and employees be transparent about the key targets and goals that must be met, as well as the support that the organization can provide. An open dialogue between line managers and employees is critical in enabling a transference away from the organizational culture of presenteeism and long hours in the office, often perceived as synonymous with staunchness and a search for productivity at all costs, to a culture where employees have more flexibility and as result may be more productive.

Since some employees still prefer to report to offices, in the event there is a resurgence of the pandemic (a scenario far from unrealistic), the management team should come up with employee scheduling strategies to minimize the risk of exposure of the employees to the virus. By limiting the possibility of an outbreak among BPO employees, the company will also avoid disruptions in the production process or the delivery of services to clients. In addition to encouraging an open dialogue and reorganizing operations so as to accommodate those wishing to work from home and those choosing to report to the office, management should articulate clear and effective guidelines to ensure the safety, health, and overall well-being of their employees even if they are working from home since employees need time to focus on their personal health and personal responsibilities as well, whether working at home or in the office. For those opting for a WFH approach, these guidelines may include daily reminders for them to exercise for a few minutes in between their work to prevent them from neck or back ache and eyestrain caused by prolonged computer use. Thanks to such guidelines, employees will be able to improve their health and well-being which in turn can improve their productivity.

Emboldening their subordinates to have a work-life balance will also show the latter that they are valued. In short, they will create a win-win situation for both sides.

- Limitations of this Study

This study used the perspective of the BPO sector in one area of the Philippines to analyze how COVID-19 impacted BPO employees' home productivity and determine their post-pandemic work setup preference. A wider perspective covering several sectors, possibly in different regions with different sub-cultures, would be a valuable complement to this study.

References

ABS-CBN New (2020). Philippines Confirms First Case of New Coronavirus. ABS-CBN News, January 19, 2020. Retrieved February 6, 2022, from ABS-CBN+New+(2020).+Philippines+Confirms+First+Case+of+New+Coronavirus.+ABS-CBN+News.

Aczel, B., Kovacs, M., van der Lippe, T., & Szaszi, B. (2021). Researchers working from home: Benefits and challenges. *PLOS ONE*, *16*(3).

Aning, J. (2021). BPO Industry Grows Despite Pandemic. Philippine Daily Inquirer, May 27, 2021. Retrieved September 13, 2022, from https://business.inquirer.net/323694/bpo-industry-grows-despite-pandemic

Asean Briefing. (2017). Business Process Outsourcing in the Philippines. ASEAN Briefing, April 17, 2017. Retrieved July 3, 2022, from https://www.aseanbriefing.com/news/business-process-outsourcing-philippines/

Atienza, M. E. (2021). The Philippines a Year under Lockdown: Continuing Executive Dominance, Threats to Democracy, and Unclear Pandemic Response. VerfBlog, March 26, 2021. Retrieved February 8, 2022, from https://verfassungsblog.de/the-philippines-a-year-under-lockdown/

Awada, M., Lucas, G., Becerik-Gerber, B., & Roll, S. (2021). Working from home during the COVID-19 pandemic: Impact on office worker productivity and work experience. *Work*, *69*(4), 1171-1189.

Bakhsh, A. A. (2013). *Manage the Disadvantages of Working from Home.* International Conference on Industry, Engineering, and Management Systems at Cocoa Beach, Florida. Retrieved June 3, 2022, from https://www.researchgate.net/publication/328789442_Manage_the_Disadvantages_of_Working_from_Home

Bucurean, M. (2020). The Impact of Working from Home on Productivity: A Study on the Pandemic Period. Retrieved July 12, 2022, from http://anale.steconomiceuoradea.ro/volume/2020/n2/024.pdf

Butler, H. (2022). Inbound and Outbound Call Centers: What's the Difference? ROI solutions, May 25, 2022. Retrieved July 18, 2022, from https://roicallcentersolutions.com/customerservice/what-is-the-difference-between-inbound-and-outbound-call-centers/##types_of_inbound_calls_anchor

Corporate Finance Institute Team (2022). Business Process Outsourcing (BPO). Corporate Finance Institute, May 7, 2022. Retrieved July 3, 2022, from https://corporatefinanceinstitute.com/resources/knowledge/strategy/business-process-outsourcing-bpo/

Di Martino, V., & Wirth, L. (1990). Telework: A new way of working and living. *International Labour Review*, *129*(5), 529-554.

DuPlessis, R. S. (2019). *Transitions to capitalism in early modern Europe*. Cambridge University Press.

Gallimore, D. (2021). BPO and the Philippine Economy: Outsource Accelerator. Retrieved

August 18, 2022, from https://www.outsourceaccelerator.com/articles/bpo-and-the-philippine-economy/

Gibbs, M., Mengel, F., & Siemroth, C. (2021). Work from Home & Productivity: Evidence from Personnel & Analytics Data on IT Professionals. Becker Friedman Institute. Retrieved July 3, 2022, from: https://bfi.uchicago.edu/wp-content/uploads/2021/05/BFI_WP_2021-56.pdf.

Goloboy, J. L. (Ed.). (2008). *Industrial revolution: People and perspectives*. ABC-CLIO.

Hackney, A., Yung, M., Somasundram, K. G., Nowrouzi-Kia, B., Oakman, J., & Yazdani, A. (2022). Working in the digital economy: A systematic review of the impact of work from home arrangements on personal and organizational performance and productivity. *PLOS ONE*, *17*(10).

Inayat, W., & Khan, M. J. (2021). A study of job satisfaction and its effect on the performance of employees working in private sector organizations, peshawar. *Education Research International*, *1,* 1-9.

Invest Northern Ireland. (2021). Employees Working from Home. Invest Northern Ireland. Retrieved August 18, 2022, from https://www.nibusinessinfo.co.uk/content/advantages-and-disadvantages-employees-working-home

Ipsen, C., van Veldhoven, M., Kirchner, K., & Hansen, J. P. (2021). Six key advantages and disadvantages of working from home in Europe during COVID-19. *International Journal of Environmental Research and Public Health, 18*(4), 1826.

IATF (2020a). Omnibus Guidelines on the Implementation of Community Quarantine in The Philippines. Official Gazette, October 10, 2020. Retrieved May 16, 2022, from https://www.officialgazette.gov.ph/downloads/2020/10oct/20201008-IATF-Omnibus-Guidelines-RRD.pdf

IATF (2020b). Recommendations for the Management of the Coronavirus Disease 2019 (Covid-19) Situation. Official Gazette, May 5, 2020. Retrieved April 27, 2022, from https://www.officialgazette.gov.ph/downloads/2020/05may/20200312-IATF-RESO-11.pdf

Kitagawa, R., Kuroda, S., Okudaira, H., & Owan, H. (2021). Working from home and productivity under the COVID-19 pandemic: Using survey data of four manufacturing firms. *PLOS ONE*, *16*(12).

Mores, J. M. (2022). Work from home satisfaction: Filipino remote workers and the Covid-19 pandemic. *Asia Pacific Journal of Management and Sustainable Development, 10*(2), 70-77.

Ochave, R. (2022). BPO Sector Surpasses Revenue, Employment Targets Set for 2022. BusinessWorld, June 8, 2022. Online. Retrieved July 14, 2022, from https://www.bworldonline.com/economy/2022/06/08/453713/bpo-sector-surpasses-revenue-employment-targets-set-for-2022/

Patanjali, S., & Bhatta, N. M. (2022). Work from home during the pandemic: The impact of organizational factors on the productivity of employees in the IT industry. *Vision, 0*(0)

Quieta, R. (2020). ECQ, MECQ, GCQ, and MGCQ: What Should You Expect? GMA Network, May 29, 2020. Retrieved March 12, 2022, from https://www.gmanetwork.com/entertainment/celebritylife/news/64118/ecq-mecq-gcq-and-mgcq-what-should-you-expect/story

Remulla, M. M., & Medina, G. M. (2012). Measuring the Contribution to the Philippines Economy of Information Technology- Business Process Outsourcing (IT-BPO) Services. Media and Research Publications. Retrieved May 27, 2022, from https://www.bsp.gov.ph/Media_And_Research/Publications/BS12_A1.pdf

Susilo, D. (2020). Revealing the effect of work-from-home on job performance during the COVID-19 crisis: Empirical evidence from Indonesia. *Journal of Contemporary Issues*

in Business and Government, *26*(1), 23-40.

Schall, M. A. (2019). *The Relationship between Remote Work and Job Satisfaction: The Mediating Roles of Perceived Autonomy, Work-Family Conflict, and Telecommuting Intensity* (master's thesis). *SJSU ScholarWorks*. Retrieved from https://scholarworks.sjsu.edu/etd_theses/5017/.

Talmage-Rostron, M. (2021). The Future of BPOs in the Philippines and Growth Opportunities. Retrieved August 18, 2022, from https://insights.nexford.org/the-future-of-bpos-in-the-philippines-and-growth-opportunities

Teodorovicz, T., Sadun, R., Kun, A. L., & Shaer, O. (2021). How Does Working from Home During COVID-19 Affect What Managers Do? Evidence from Time-Used Studies. Retrieved July 3, 2022, from https://www.hbs.edu/faculty/Pages/item.aspx?num=61279

Tejero, L. M., Seva, R. R., & Fadrilan-Camacho, V. F. (2021). Factors associated with work-life balance and productivity before and during work from home. *Journal of Occupational and Environmental Medicine*, *63*(12), 1065-1072.

Venzon, C. (2021). How Philippine Call Centers are Capitalizing on COVID Crisis. Nikkei Asia, September 17, 2021. Retrieved March 5, 2022, from https://asia.nikkei.com/Business/Business-Spotlight/How-Philippine-call-centers-are-capitalizing-on-COVID-crisis

Vyas, L., & Butakhieo, N. (2020). The impact of working from home during COVID-19 on work and life domains: An exploratory study on Hong Kong. *Policy Design and Practice*, *4*(1), 59-76.

White, K. (2022). The Latest Site Selection Trends in The Philippines in a Post-Covid World. Site Selection Group Blog, June 15, 2022. Retrieved July 24, 2022, from https://info.siteselectiongroup.com/blog/the-latest-site-selection-trends-in-the-philippines-in-a-post-covid-world

Wiley Clinical Healthcare Hub. (2020). COVID-19: a Brief History and Treatments in Development. Retrieved July 3, 2022, from https://wchh.onlinelibrary.wiley.com/doi/10.1002/psb.1843

Wilson, J. (2021*). Impact of Work from Home Policies on Workplace Productivity and Employee Sentiments during the Covid-19 Pandemic (thesis).* Retrieved July 3, 2022, from https://scholarworks.uark.edu/cgi/viewcontent.cgi?article=1042&context=acctuht.

World Health Organization. (2020). Novel Coronavirus. Situation Report 1. Retrieved July 3, 2022, from https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200121-sitrep-1-2019-ncov.pdf

Worldometer. (2020). COVID-19 Coronavirus Pandemic. Retrieved June 1, 2022, from https://www.worldometers.info/coronavirus/

Wu, H., & Chen, Y. (2020). The Impact of Work from Home (WFH) on Workload and Productivity in Terms of Different Tasks and Occupations. In HCI *International 2020 – late breaking papers: Interaction, knowledge, and social media* (pp.693-706). Springer International Publishing.

Yang, E., Kim, Y., & Hong, S. (2021). Does working from home work? Experience of working from home and the value of hybrid workplace post-COVID-19. *Journal of Corporate Real Estate* (ahead of print). Doi 10.1108/jcre-04-2021-0015

Yang, D. H., Kim, S., Nam, C., & Min, J. W. (2007). Developing a decision model for business process outsourcing. *Computers & Operations Research*, *34*(12), 3769-3778.

Movements of Return on Equity of Thai Big Market Capitalization Companies: Revisiting the DuPont Ratio

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Abstract

This study aims to examine the causal relationship between the net profit margin, total asset turnover, equity multiplier, and return on assets and the return on equity of big market capitalization companies listed on the Stock Exchange of Thailand (the SET). Due mainly to data availability, 93 big market cap companies listed on listed SET 100 index constituents are used as a sample set. The study period is between 2015 and 2019. Statistics used include mean, standard deviation, maximum, minimum, skewness, kurtosis, log transformation and multiple regression. The findings show that a combination of return on assets and equity multiplier outperforms a combination of net profit margin, total asset turnover, and equity multiplier (traditional components of return on equity) in explaining a movement of return on equity of the Thai big market cap companies. This study documents the use of DuPont analysis in the Thai context, where such analysis appears to be few. Moreover, its findings can provide useful insights to financial managers and/or investors regarding the optimal determinants of ROE of Thai companies and contribute to its greater impact on ROE, or shareholders' wealth.

Keywords: Return on Equity, Return on Assets, Net Profit Margin, Total Asset Turnover, Equity Multiplier

1. Introduction

When it comes to business finance and/or corporate financial management, a crucial expectation and key responsibility of managers is to maximize shareholders' wealth, rather than maximize profit and minimize costs. Also, there is a consensus among all stakeholders that shareholders' wealth can be measured by a company's market capitalization and/or common stock price. Management must ensure that the company performs well or, at least, better than in previous years. This requires management to have a useful financial tool to assess the financial performance of the company. Empirically, academics and researchers suggest that financial statement information can be used as a comprehensive financial analysis tool in evaluating future financial performance (Chen, Wang, & Qiao, 2014; Turner et al., 2015; Warrad & Nassar, 2017). In other words, financial ratios can be used to predict future the financial performance of a company. In the last few decades, there has been a great number of studies applying financial information to explain how well a company performs in different settings (Almazari, 2012; Kasilingam & Jayabal, 2012; Padake & Soni, 2015; Kim, 2016; Biplob, Alam, & Hossain, 2018). They have attempted to search for an optimal financial analysis tool that can help stakeholders identify what exactly is generating a company's earnings. As these previous studies show, it is indisputable that the DuPont analytical framework is widely used by the researchers.

The DuPont analysis was initially developed by Donaldson Brown in the early 1920s (Flesher & Previts, 2013). In its initial stage, the DuPont analysis focused only on the net profit margin and the total asset turnover (representing an internal activities-generated revenue), exclusive of the effect of financial leverage. Later, the DuPont analysis took financial leverage

into account, causing a conceptual change from return on assets (hereafter referred to as ROA) to return on equity (hereafter referred to as ROE) (Almazari, 2012). Specifically, the DuPont analysis breaks down the components of ROE into three different financial ratios, namely, net profit margin, total asset turnover, and equity multiplier. These three ratios are considered traditional ROE components. It should be noted that both net profit margin (hereafter referred to as NPM) and total asset turnover (hereafter referred to as TAT) are also key ROA components. The ROA ratio is also another component of the ROE ratio. The difference between these two ratios is that the latter incorporates the effect of financial leverage whereas ROA does not. Up until now, the DuPont analysis has been extensively used among academics and financial researchers in assessing the financial performance of a company by disaggregating a company' financial performance into three crucial dimensions: efficiency, profitability, and financial leverage.

The financial performance of a company can be measured by its ROE, which tells the shareholders of that company how effectively their funds are being managed. The ROE can be calculated by dividing the net income by shareholders' equity. The higher a company's ROE, the better management uses shareholders' funds to generate profits. Moreover, an increasing ROE can signal that a company is able to grow profit without asking for new funds from shareholders, resulting in shareholders' wealth maximization. A number of prior studies focused on the components of the ROE to confirm whether the NPM, TAT, equity multiplier (hereafter referred to as EM) and ROA ratios could explain the ROE movement of companies. For instance, Weidman et al. (2019) determined that an increase of the NPM and TAT could increase the ROE ratio of manufacturing companies in Germany, the USA, and Japan. Also, Mubin, Iqbal, and Hussain (2014) concluded that, among the three components of the ROE ratio, while EM has a statistical relationship with ROE, the TAT ratio is the most influential component of multi-sector companies listed on the Karachi Stock Exchange. In their study of 28 Jordanian insurance companies listed on the Amman Stock Exchange, Kabajeh, Nu'aimat, and Dahmash (2012) found that ROA has a significant relationship with ROE. There are, however, very few similar studies in the Thai context, hence the relevance of this study, which aims to fulfil this research gap by revisiting the DuPont analysis framework in the Thai context

Focusing on the ROE component of big market cap companies listed on the Thai Stock Exchange Market (hereafter referred to as SET), this study seeks to determine which set of DuPont-based financial ratios is optimal in explaining the movement of the ROE of these companies. Specifically, it seeks to examine the causal relationship between the NPM, TAT, EM, ROA, and ROE ratios and determine optimal set of ROE components signaling financial performance. Since, shareholders' wealth maximization can be measured by the market capitalization of the firms they own shares of, this study selectively chose the top 100 big market cap companies as the sample set. This study contributes to the relevant literature in a Thai setting and emerging market as the use of a DuPont analysis framework in a Thai setting appears to be lacking.

2. Literature Review
- *NPM and ROE*
The net profit margin is one of the profitability ratios and also one of the three financial ratios used in the DuPont analysis. The NPM can be caculated by dividing a company's net profit by revenue from sales and service (Nariswari & Nugraha, 2020). The result is expressed as a percentage. If a company's NPM increases, its ROE will increase. An increasing NPM will raise the ROE since a higher NPM indicates that the company is able to effectively manage its operating costs, resulting in a higher profit to shareholders (Heikal, Khaddafi, & Ummah, 2014). Weidman et al. (2019) determined that a 10-percent increase of the NPM of

manufacturing companies in Germany, the USA, and Japan, augments their ROE by approximately 9.80 percent, 8.30 percent, and 6.90 percent, respectively. It can be inferred that a higher NPM can increase the ROE of a company and contribute to an increase of the shareholders' wealth. Therefore, this study proposes to examine whether NPM can help explain the ROE movement of big market cap companies listed on the SET.

- TAT and ROE

Total asset turnover is one of the key efficiency ratios. It indicates how efficiently a company manages its total assets to generate revenue from sales and service (CFI, n.d.). Along with the NPM, the TAT is one of the three financial ratios used in the DuPont analysis. The TAT is calculated by dividing the revenue from sales and service by the total assets (Nariswari & Nugraha, 2020). A higher TAT means that the company can use its total assets to generate revenue from sales and service. An increase in the TAT leads to an increase in operating profit (Biplob et al., 2018). This is because a company effectively utilizes its assets to generate revenue. As Patin, Rahman, and Mustafa (2020) stated, the TAT determines how efficiently a company manage its assets to generate larger sales. The higher the TAT, the better a company is at using its assets to generate income to shareholders. In terms of DuPont analysis, in their study of multi-sector companies listed on Karachi Stock Exchange, Mubin *et al.* (2014) found that among the three components of ROE, TAT is the most influential one. Weidman et al. (2019) determined that an increase of 10 percent in TAT of manufacturing companies in Germany, and Japan increases ROE by about 2.20 percent, and 1.50 percent, respectively. And according to Nariswari and Nugraha (2020), whose study focused on manufacturing companies listed on the Indonesia Stock Exchange, when simultaneously applied with the NPM ratio, TAT has a significant effect on profit growth. However, Warrad and Omari (2015) found that TAT has no significant effect on the ROE of Jordanian service companies. Based on the findings from these studies, it can thus be concluded that a higher TAT can increase ROE and positively impact shareholders' wealth. Therefore, this study proposes to determine whether TAT can help explain the ROE movement of big market cap companies listed on the SET.

- EM and ROE

The equity multiplier is one of the leverage ratios that is used in the DuPont analysis. It measures how much a company depends on outsiders' funds (or debt) to finance its total assets and is calculated by dividing a company's total assets by its total equity (CFI, n.d.). A higher EM indicates that a company uses more debt than equity to finance its total assets, which, of course, in this case means that the company pauses a higher risk to creditors. However, to maximize shareholders' wealth, large companies must rely on funds from outsiders such as commercial banks. EM indicates a company's ability to raise funds for its operating activities, which established and large companies take advantage of to increase their financial performance (Abraham, Harris, & Auerbach, 2017). This is consistent with Kusi, Ansah-Adu, and Agyei's (2015) study, in which it was found that an increase in financial leverage can help a company improve its ROE when the borrowing costs are less than the return on investment. In their sudy of multi-sector companies listed on the Karachi Stock Exchange, Mubin et al. (2014) came to the conclusion that EM has a statistical relationship with ROE. Moreover, Weidman et al. (2019) found that an increase of 10 percent in EM leads to a 1.9 percent increase of the ROE of German manufacturing companies and a 1.5 percent increase of ROE of US manufacturing companies. In light of the aforementioned studies, it can therefore be assumed that a higher EM can increase ROE (and therefore the financial performance) when borrowing costs are below the ROE. This means, among other cosequences, that a higher ROE translates into a rise in shareholders' wealth. Therefore, this study proposes to explore whether EM can help explain the ROE movement of big market cap companies listed on the SET.

- ROA and ROE

ROA, unlike ROE, is one of the profitability ratios used to calculate the percentage of profit made by a company from its total assets. It is computed by dividing the net profit by the total assets (CFI, n.d.). Thus, as expressed in percentage. ROA measures a company's capability to use its assets to generate net profit. In theory, if a company's ROA increases, its ROE will increase as well. According to Jewell and Mankin (2011), ROA is used as the key financial factor of the DuPont analysis in an early period before ROA is disaggregated into NPM and TAT. In addition, Mcclure (2021) noted that ROA indicates how much profit a company's management earns from the total assets. The crucial component that differentiates ROA and ROE is financial leverage or debt. Take the accounting equation: assets = liabilities + owners' equity; if a company uses no debt, its ROA and ROE will be the same. Conversely, if a company uses debt to increase its assets, its ROE will inevitably rise above its ROA. When ROA is high, given reasonable financial leverage, ROE will increase. Focusing on 28 Jordanian insurance companies listed on the Amman Stock Exchange during the period 2002-2007, Kabajeh et al. (2012) found that there is a significant relationship between ROA and ROE.

Since the ROA ratio is once of the key components of a DuPont analysis and since empirically, ROA has a signficant relationship with ROE, this study will incorporate the ROA ratio with the EM one as an additional combination set of the DuPont analysis framework. In its search for a stronger predictor set of ROE, this study will therefore examine and compare the predictive ability of a ROA and EM combination on the one hand and a NPM, TAT, and EM combination on the other in terms of explaining the ROE movement of big market cap companies listed on the SET. Therefore, the following hypothesis can be developed:

H1: *A NPM, TAT, and EM combination (a traditional ROE set) outperforms a ROA and EM combination in explaining the ROE movement of big market cap companies listed on the SET.*

Based on this hypothesis and the above discussion of the variables considered in this study, a conceptual framework can be developed as shown in Figure 1.
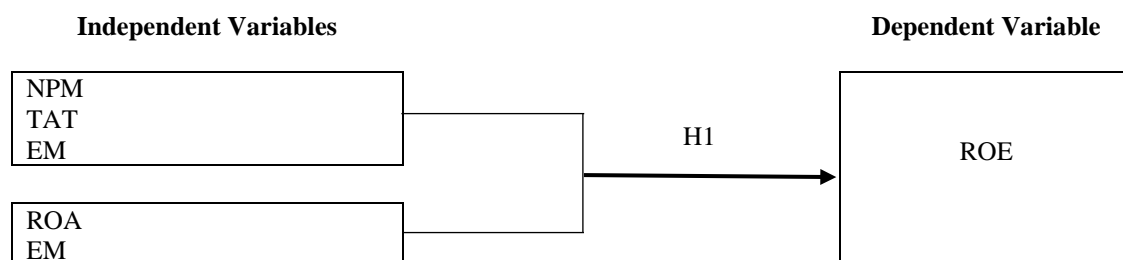

Independent Variables   **Dependent Variable**

NPM
TAT
EM

ROA
EM

H1

ROE

Figure 1: Conceptual Framework (Developed by the author for this study)

3. Research Methodology

Like previous studies adopting a secondary data research approach, this study uses the financial ratios of public companies, in this case big market cap companies in the SET 100 Index Constituents published on February 20, 2020, by the SET. The cutoff date for calculating the SET 100 Index is between January 1 and June 30, 2020. Due to data availability, 93 out of 106 big market cap companies are used as a sample set, accounting for 88 percent of the companies listed on SET 100 index constituents, and 16 percent of the companies listed on the SET. As of 23 November 2021, there are 590 listed companies on the SET. The big market cap companies used in this study are from seven industries as shown in Table 1.

Table 1: Industry Groups of the Big Market cap companies

Industry Group Name	Number of Companies
Agro and Food Industry [AGRO]	7
Financials [FINCIAL]	14
Industrials [INDUS]	2
Property and Construction [PROPCON]	16
Resources [RESOURC]	20
Services [SERVICE]	25
Technology [TECH]	9
Total	**93**

As determined by Kabajeh et al. (2012), this study collected yearly data from the annual financial reports of these companies for the 5-year study period (between 2015 and 2019 right before the COVID-19 pandemic broke out). The financial ratios observed include the NPM, TAT, EM, ROA, and ROE ratios. In total, the observations amounted 2,325. The statistical used include means, standard deviations, maximums, minimums, skewness, kurtosis, log transformation and multiple regression.

4. Research Results

Descriptive statistics are used to illustrate the characteristics of the ratios used in this study, which are shown in Table 2.

Table 2: Mean, Standard Deviation, Maximum, and Minimum of the ratios

Financial Ratio	Mean	Standard Deviation	Maximum	Minimum
NPM (%)	17.17	21.74	157.24	(26.01)
TAT (x)	0.80	1.61	14.97	0.05
EM (x)	3.73	4.96	44.96	1.19
ROA (%)	6.56	5.61	38.11	(3.09)
ROE (%)	15.46	12.36	61.87	(41.36)

Table 2 indicates that, during the period 2015-2019, the NPM mean of the companies was 17.17 percent with a 21.74 percent standard deviation. The NPM maximum and minimum are 157.24 percent and (26.01) percent, respectively. The T mean was 0.80x with a 1.61x standard deviation and the TAT maximum and minimum are 14.97x and 0.05x, respectively. The EM mean is 3.73x with a 4.96x standard deviation and a maximum and minimum of 44.96x and 1.19x, respectively. The ROA mean is 6.56 percent with a 5.61 percent standard deviation and its maximum and minimum 38.11 percent and (3.09) percent, respectively. Finally, the ROE mean is 15.46 percent with a 12.36 percent standard deviation and a maximum and minimum of 61.87 percent and (41.36) percent, respectively. There is not a noticeable difference between the NPM and ROE ratios but there is much difference between the ROA and these two ratios. However, the NPM ratio deviates more than the ROE and ROA ratios. NPM, ROE, and ROA have to do with profitability, but the TAT ratio represents efficiency, 0.80x (or 0.80 to 1) in this study, which is less than 1x (or 1 to 1), indicating that management in these companies has low efficiency managing the companies' total assets to generate revenue from sales and services. In other words, during the period covered in this study, the companies generated only 0.80 Baht of sales and services for every Baht they carried in total assets. Finally, on average, the companies' EM was 3.73x (or 3.73 to 1), a clear indication that the companies depend more on debt than equity to finance their assets. The EM is known as the financial leverage ratio.

To answer the hypothesis developed for this study, a multiple regression was used. Thus, to comply with the basic assumption of a multiple regression, the distribution normality of the data was initially checked by calculating the skewness and kurtosis of the data. The value of these two parameters should be zero if the data are normally distributed (Ghasemi & Zahediasl, 2012). In addition, Pek, Wong, and Wong (2017) determined that data transformations are required to address a preliminary qualification of data symmetrically distributed with no skew, and, more importantly, to enhance the interpretation of the study results for non-statisticians. Following what was done in Aminu and Shariff's (2014) study, the researcher in this study applied skewness values comprised between 3 and -3, and kurtosis value comprised between 10, and -10 as an acceptable range.

Table 3: Skewness and Kurtosis of the ratios before transformation

Financial Ratio	Skewness	Kurtosis
NPM	3.08	18.09
TAT	7.64	66.52
EM	6.60	52.84
ROA	2.37	10.62
ROE	0.23	6.87

Table 3 indicates that the NPM, TAT, EM, and ROA ratios are positively skewed. Their skewness values range from 2.37 to 7.64. In addition, their kurtosis values are above 10, the critical point, indicating that these ratios have heavy tails or outliers. As to the ROE ratio, even though its skewness value is nearly zero, its kurtosis value indicates that this does not change the fact that all these ratios are somewhat outliers. Consequently, all of them were transformed by applying log transformation, a method commonly used for positively skewed data and one recommended in various prior studies (Menaje, 2012; Taani, 2012; Smulders et al., 2018; Nariswari & Nugraha, 2020).

Table 4: Skewness and Kurtosis of the Ratios after Transformation

Financial Ratio	Skewness	Kurtosis
NPM	(0.49)	0.41
TAT	0.01	0.32
EM	1.53	3.50
ROA	(0.58)	0.25
ROE	(1.16)	4.82

Table 4 shows the skewness and kurtosis values of the five ratios considered in this study after transformation. The data moved closer to zero, indicating that they are somewhat perfectly symmetrical and have fewer outliers compared to the data before transformation. The values of skewness and kurtosis are within the range recommended and used by Aminu and Shariff (2014). Next, a multiple regression estimation was conducted:

Table 5: Estimation of Multiple Regression Model

	NPM, TAT, and EM Set				ROA and EM Set			
	B	Beta	Collinearity Statistics		B	Beta	Collinearity Statistics	
			Tolerance	VIF			Tolerance	VIF
NPM	1.006*	1.591	0.364	2.744				
TAT	0.970*	1.575	0.282	3.547				
EM	0.932*	0.856	0.532	1.879	0.998*	0.901	0.584	1.711
ROA					1.037*	1.288	0.584	1.711
Constant	0.011				0.076			
Durbin-Watson	1.983				1.910			
R^2	0.939				0.975			
Adjusted R^2	0.937				0.974			
F	437.476				1,684.410			
P-value of F	0.000*				0.000*			

Note: * = 0.05, ROE as Dependent Variable

Table 5 shows the results of a multiple regression of both a NPM, TAT, and EM set and a ROA and EM set.

- NPM, TAT, and EM Set
The Durbin-Watson value is 1.983, which is nearly 2.00, indicating that there is no autocorrelation problem among NPM, TAT, and EM observations. This is consistent with VIF values of less than 4 and indicates that the three independent variables are not highly correlated with one another or that there is no multicollinearity issue. Therefore, one can distinguish between the individual effects of NPM, TAT, and EM on ROE or, to put it another way, the multiple regression is reliable. The R^2 and Adjusted R^2 values are 0.939 and 0.937, respectively, suggesting that the NPM, TAT, and EM set can account for approximately 94 percent of the ROE movement of big market cap companies listed on the SET. The F value of 437.476 and 0.000 p-value of F confirm that NPM, TAT, and EM in this multiple regression model improve the fit. The values of both Unstandardized Coefficients B and Standardized Coefficients Beta indicate that the NPM ratio (B = 1.006 and Beta = 1.591) contributes the most to the ROE ratio, followed by the TAT ratio (B = 0.970 and Beta = 1.575), and the EM ratio (B = 0.932 and Beta = 0.856). The estimation of the ROE prediction model, based on a NPM, TAT, and EM set can be written as follows:

$$\text{In (ROEpredicted)} = 1.006\,\text{In(NPM)} + 0.970\,\text{In(TAT)} + 0.932\,\text{In(EM)} \quad (1)$$

- ROA and EM Set
The Durbin-Watson value is 1.910, which is close to 2.00, indicating that there is no autocorrelation problem among ROA and EM observations. This is consistent with VIF values of less than 2 and indicates that the two independent variables are not highly correlated with one another or that there is no multicollinearity problem. Therefore, one can distinguish between the individual effects of ROA and EM on ROE. In other words, the multiple regression is reliable. The R^2 and Adjusted R^2 values are 0.975 and 0.974, respectively, suggesting that a ROA and EM set can approximately explain 98 percent of the movement of the ROE of big market cap companies listed on the SET. The F value of 1,684.410 and 0.000 p-value of F confirm that ROA and EM in this multiple regression model improve the fit. Both Unstandardized Coefficients B and Standardized Coefficients Beta values indicate that the ROA ration (B = 1.037 and Beta = 1.288) is the main ROE contributor, followed by the EM ratio (B = 0.998 and Beta = 0.901). The estimation of the ROE prediction model based on a set of ROA and EM can be written as follows:

$$\text{In(ROEpredicted)} = 1.037\,\text{In(ROA)} + 0.998\,\text{In(EM)} \quad (2)$$

As can be seen in models (1) and (2) above, whereas a NPM, TAT, and EM set explains approximately 94 percent of the ROE change, a ROA and EM set can account for approximately 98 percent change of the change. Moreover, the F value of the ROA and EM set significantly increases from 437.476 to 1,684.410. This confirms that a ROA and EM set outperforms a NPM, TAT, and EM set in explaining the movement of the ROE of big market cap companies listed on the SET. As a result, when it comes to the optimal determinants of the ROE of Thai big market cap companies, the ROA and EM set has a greater impact on ROE or shareholders' wealth. Therefore, H1 is rejected. Since, in order to address the hypothesis, this study transforms original data into log transformed data, it is necessary to convert the log transformed data back to original data for stakeholders' practical applications. Consequently, the ROE predictive model based on a ROA and EM set after taking the natural logarithm out can be written as follows:

$$ROEpredicted = 1.751(ROA) + 0.010 \ (EM) \ (3)$$

Referring to the model in (3), the sequence of the key contributor to the ROE ratio remains unchanged. The most influential predictor is still the ROA ratio (B = 1.751) and the least influent predictor the EM ratio (B = 0.010). In their practice, stakeholders, such as management investors and financial analysts, can thus apply the ROE prediction model in (3) to forecast the future earnings of start-ups, small and medium enterprises, and/or listed companied on the SET.

5. Discussion and Conclusion

It is apparent that predictive modelling uses statistics to forecast outcomes and/or determine the probability of an optimal set of data belonging to another set. As exemplified by the studies of Wang, Sharma, and Cao (2016), Mafini and Muposhi (2017), Maqbool and Zameer (2018), and Sardo, Serrasqueiro, and Alves, (2018), a model might be used to forecast financial performance or the ROE of a company. As with these prior studies, this research study seeks to explore the causal relationship between the NPM, TAT, EM, ROA, and ROE of public companies, in this case, big market cap companies listed on the SET. While shareholders' wealth maximization can also be measured by market capitalization, this study selectively chose top 100 big market cap companies as a sample set, specifically, big market cap companies in the SET 100 Index Constituents published on 20 February 2020 by the SET. The cutoff date for calculating the SET 100 Index was between January 1 and June 30, 2020. However, because of data availability, only 93 big market cap companies were used as a sample set, accounting for 88 percent of the companies listed on the SET 100 index or 16 percent of the companies listed on the SET.

The study period is 2015-2019 right before COVID 19 pandemic broke out. Yearly data were collected from the annual financial reports of these companies, bringing the total observations to 2,325. Since the data used are not normally distributed, a natural logarithm was applied to transformed original data into log transformed data before running multiple regressions. The comparative analysis of a NPM, TAT, and EM set on the one hand and a ROA and EM set on the other indicates that the ROA and EM set outperforms the NPM, TAT, and EM set in explaining the ROE movement of these big Thai market cap companies. In other words, a ROA and EM set has a greater impact on the ROE of these firms. The result of this study offers practical managerial implications: Regarding internally generated funds, Thai company management should focus more on ROA rather than on NPM and TAT since ROA is a greater contributor and also positively affects ROE, which represents company profitability. In addition, external funds such as debts should be used to finance the firm's assets to enhance its profitability as EM significantly and positively affects ROE. Finally, Thai management should be rational about using debt heavily as part of the company's capital structure since higher cost of debt can eat profit.

To the best of the researcher's knowledge and, based on a thorough review of the body of relevant literature in the past ten years, this study is at the forefront of the research in Thailand revisiting a traditional DuPont analysis framework. It contributes to the relevant body of literature in a Thai setting and/or an emerging market in at several ways: (i) as noted in the introduction, it revisits the use of the DuPont analysis framework in a Thai setting, where this kind of studies appears to be lacking; (ii) it expands the use of the DuPont analysis to another emerging market; (iii) it confirms the relevance and effectiveness of the DuPont analysis as applied to an emerging market; and (iv) it provides empirical evidence that, in a Thailand setting, the ROA ratio is the most influential determinant of the ROE ratio. Therefore, financial managers, investors, and shareholders of Thai companies should look at the ROA and financial leverage as essential tools to raise the ROE of their companies and, as a result, maximize shareholders' wealth. This study, however, has limitations. For one, data was collected from 100 companies listed on the SET 100 index constituents, considered to be less informative compared to those listed companies on the SET. For another, this study covers only five years (2015-2019) before the COVID 19 pandemic broke out. In addition, this study employed panel data to analyze the results and focused on Thai companies only. All these limits generalizability of this study. Future research should therefore expand the scope of the investigation.

References

Abraham, R., Harris, J., & Auerbach, J. (2017). Earnings yield as a predictor of return on assets, return on equity, economic value added and the equity multiplier. *Modern Economy, 8*, 10-24.

Almazari, A. A. (2012). Financial performance analysis of the Jordanian Arab Bank by using the DuPont System of financial analysis. *International Journal of Economics and Finance, 4*(4), 86-94.

Aminu, I. M., & Shariff, M. (2014). Strategic orientation, access to finance, business environment and SMEs performance in Nigeria: Data screening and preliminary analysis. *European Journal of Business and Management, 6*(35), 124-131.

Biplob, M., Alam, S., & Hossain, M. (2018). DuPont analysis of return on common stockholder's equity in the pharmaceutical industry of Bangladesh. *Global Journal of Management and Business Research, 18*(1), 8-15.

CFI. (n.d.). *Asset turnover ratio*. Retrieved March 18, 2022, from Corporate Financial Institute: https://corporatefinanceinstitute.com/resources/knowledge/finance/asset-turnover-ratio/

CFI. (n.d.). *Equity multiplier*. Retrieved March 18, 2022, from Corporate Financial Institute: https://corporatefinanceinstitute.com/resources/knowledge/finance/equity-multiplier/

CFI. (n.d.). *Return on assets & ROA Formula*. Retrieved March 24, 2022, from Corporate Financial Institute: https://corporatefinanceinstitute.com/resources/knowledge/finance/return-on-assets-roa-formula/

Chen, L., Wang, S., & Qiao, Z. (2014). DuPont Model and product profitability analysis based on activity-based costing and economic value added. *European Journal of Business and Management, 6*(30), 25-35.

Flesher, D. L., & Previts, G. J. (2013). Donaldson Brown (1885-1965): The power of an individual and his ideas over time. *Accounting Historians Journal, 40*(1), 79-102.

Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: A guide for non-statisticians. *International Journal of Endocrinology and Metabolism, 10*(2), 486-489.

Heikal, M., Khaddafi, M., & Ummah, A. (2014). Influence analysis of return on assets (ROA), return on equity (ROE), net profit margin (NPM), debt to equity ratio (DER), and current ratio (CR) against corporate profit growth in automotive in Indonesia Stock

Exchange. *International Journal of Academic Research in Business and Social Sciences, 4*(12), 101-114.

Jewell, J. J., & Mankin, J. A. (2011). What is your ROA? An investigation of the many formulas for calculating return on assets. *Academy of Educational Leadership Journal, 15*(special issue), 79-91.

Kabajeh, M., Nu'aimat, S., & Dahmash, F. (2012). The relationship between the ROA, ROE and ROI ratios with Jordanian insurance public companies market share prices. *International Journal of Humanities and Social Science, 2*(11), 115-120.

Kasilingam, R., & Jayabal, G. (2012). Profitability and solvency analysis of a manufacturing company using Dupont and Altman model. *BVIMR Management Edge, 5*(2), 53-64.

Kim, H.-S. (2016). A study of financial performance using a DuPont analysis in food distribution market. *Culinary Science & Hospitality Research, 22*(6), 52-60.

Kusi, B. A., Ansah-Adu, K., & Agyei, A. (2015). Evaluating banking profit performance in Ghana during and post profit decline: A five-step Dupont approach. *Emerging Markets Journal , 5*(2), 29-40.

Mafini, C., & Muposhi, A. (2017). Predictive analytics for supply chain collaboration, risk management and financial performance in small to medium enterprises. *Southern African Business Review, 21*, 311-338.

Maqbool, S., & Zameer, N. (2018). Corporate social responsibility and financial performance: An empirical analysis of Indian banks. *Future Business Journal, 4*(1), 84-93.

Mcclure, B. (2021). *How ROA and ROE give a clear picture of corporate health*. Retrieved 20 November, 2021, from Investopedia Web site: https://www.investopedia.com/investing/roa-and-roe-give-clear-picture-corporate-health/

Menaje, P. M. (2012). Impact of selected financial variables on share price of publicly listed firms in the Philippines. *American International Journal of Contemporary Research, 2*(9), 98-104.

Mubin, M., Iqbal, A., & Hussain, A. (2014). Determinant of return on assets and return on equity and its industry-wise effects: Evidence from KSE (Karachi Stock Exchange). *Research Journal of Finance and Accounting, 5*(15),148-157.

Nariswari, T. N., & Nugraha, N. M. (2020). Profit growth: Impact of net profit margin, gross profit margin and total assets turnover. *International Journal of Finance & Banking Studies, 9*(4), 87-96.

Padake, V., & Soni, R. (2015). Measurement of efficiency of top 12 banks in India using DuPont analysis. *UPI Journal of Bank Management, 14*(4), 59-68.

Patin, J.-C., Rahman, M., & Mustafa, M. (2020). Impact of total asset turnover ratios on equity returns: Dynamic panel data analysis. *Journal of Accounting, Business and Management, 27*(1), 19-29.

Pek, J., Wong, O., & Wong, A. (2017). Data transformations for inference with linear regression: Clarifications and recommendations. *Practical Assessment, Research, and Evaluation, 22*(9), 1-11.

Sardo, F., Serrasqueiro, Z., & Alves, H. (2018). On the relationship between intellectual capital and financial performance: A panel data analysis on SME hotels. *International Journal of Hospitality Management, 75*, 67-74.

Smulders, F. T., Oever, S. T., Donkers, F. C., Quaedflieg, C. W., & Ven, V. V. (2018). Single-trial log transformation is optimal frequency analysis of resting EEG alpha. *European Journal of Neuroscience, 48*, 2585-2598.

Taani, K. (2012). Impact of working capital management policy and financial leverage on financial performance: Empirical evidence from Amman Stock Exchange-listed companies. *International Journal of Management Sciences and Business Research, 1*(8), 10-17.

Turner, J., Broom, K., Elliott, M., & Lee, J.-F. (2015). A decomposition of hospital profitability: An application of DuPont analysis to the US Market. *Health Service Research and Managerial Epidemiology, 2*, 1-10.

Wang, Z., Sharma, P. N., & Cao, J. (2016). From knowledge sharing to firm performance: A predictive model comparison. *Journal of Business Research, 69*(10), 4650-4658.

Warrad, L. H., & Nassar, M. (2017). Could profitability, activity, and use of equity finance increase the DuPont Model of return on equity? Jordanian Case. *International Review of Management and Marketing, 7*(3), 35-41.

Warrad, L., & Omari, R. A. (2015). The impact of turnover ratios on Jordanian services sectors' performance. *Journal of Modern Accounting and Auditing, 11*(2), 77-85.

Weidman, S. M., McFarland, D. J., Meric, G., & Meric, I. (2019). Determinants of return-on-equity in USA, German and Japanese manufacturing firms. *Managerial Finance, 45*(3), 445-451.

Modeling the Public Service Motivation of Local Government Employees

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Abstract

This research study aims to generate a best fit model on the public service motivation of local government employees. Three exogenous variables were utilized in this quantitative, descriptive-causal research with structural equation modeling: organizational culture, public leadership, and political values. Data were sourced from 400 rank and file permanent employees of six city governments of the Davao Region in the Philippines during the period August-October 2021 amidst the adversities of the Covid-19 pandemic. The findings revealed that all the exogenous variables were significantly associated and influencing public service motivation. Moreover, the best fit model for public service motivation generated satisfied all the goodness of fit measures' requirements. It indicated that public service motivation was directly influenced by public leadership with a significant link to organizational culture. Consequently, any effort raising the level of motivation of employees toward public service should involve associating the desirable organizational culture and the leadership competence of administrators.

Keywords: Organizational Culture, Public Leadership, Political Values, Public Service Motivation, Government Employees, Philippines

1. Introduction

The concept of public service motivation conforms to the notion that people are attracted to engage in public service since this provides opportunity for them to do good for others and society as well. Furthermore, people in the government are expected to demonstrate an advanced degree of public service motivation (Andersen, Jensen, & Kjeldsen, 2020; O'Riordan, 2013; Perry & Wise, 1990). However, in the context of public service in local government units in the Philippines, several issues have been exposed concerning employees who manifest a undesirable low level of public service motivation. Based on the data of the Ombudsman, local government units around the country have a total of 2,799 corruption cases filed before their office (Buan, 2017). President Rodrigo Duterte also publicized the names of several government employees dismissed by the Ombudsman due to corruption and other charges (Requejo, 2021). These illustrate some of the consequences when public service motivation is lacking among government officials and employees. Public service motivation can be defined as the individual belief and attitudes that exceeds self- and organizational interest. It assumes that it is the concerns and interests of the public at large that prevail and motivate people to act appropriately (Vandenabeele, 2007). Public service motivation is critical for government officials and employees since it impacts their behavior and performance of duty in the delivery of public services.

Several studies indicates that public service motivation boosts individual as well as the organizational performance when providers of public services conform to it and understand the impact of their jobs on society (Andersen et al., 2020; O'Riordan, 2013). The culture of the organization impacts the public service motivation of individual workers (Austen & Zacny, 2015; Panagiotis, Alexandros, & George, 2014). Public service motivation is also influenced by leadership qualities (Mavhungu & Bussin, 2017). Moreover, the political values of individuals affect their degree of public service motivation (Wang, van Witteloostuijn, & Heine, 2020: Weber, 2019; (Greentree, 2011). While there is a broad body of literature on the different factors that influence public service motivation (Ugaddan & Park, 2017; Vandenabeele, 2014; Moynihan & Pandey, 2007), less often have researchers studied public service motivation as an outcome variable or the casual dynamics influencing public service motivation (Andersen & Pedersen, 2012; Kjeldsen, 2012; Kjeldsen & Jacobsen, 2013). This study seeks to create a causal model on public service motivation of city government employees in the Philippines through their self-perceived political values and the public leadership and organizational culture present in their respective local government units. It aims to add evidence to the growing body of knowledge about public service motivation and develop a new model that can be used to provide a new direction towards enhancement of the delivery of public services in city governments. It can provide significant information to higher authorities in both local and national governments on how to strategically increase the public service motivation of government personnel.

2. Literature Review
- *Theoretical Background*
Since this research is rooted in the theory of Public Service Motivation coined by Perry and Wise (1990), it will be discussed first.

- *The Theory of Public Service Motivation*
The theory of public service motivation provides insights on what motivates individuals in choosing a particular career path in the public sector. According to this theory, public service motivation is usually influenced by social, political, and institutional factors. Failure of the organization to recognize the public service motivation of its workers can lead to the discouragement of individuals to deliver what is supposed to be delivered in the name of public service. Franco, Bennett, and Kanfer (2002) found that the culture of the organization is one of the most essential determinants of public service motivation. According to them, motivation is perceived to be higher in organizations where workers regularly meet and interact both during working hours and at social activities beyond office hours. Therefore, the culture of the organization is a significant predictor of the extent of public service motivation. Moreover, Panagiotis et al. (2014) concluded that the organizational culture that is adopted in the public sector organization is an imperative element in honing the degree of its workers motivation.

- *The Social Learning Theory*
Another theory on which this study is based is Bandura's (1977) social learning theory, according to which there is a strong relationship between leadership and public service motivation. The theory implies that individuals learn the required and appropriate behaviors in the workplace by observing and emulating models that they believed to be credible. Supervisors are usually considered to be a reliable role model because of their position and or the demonstrated desirable behaviors that workers believe are worth emulating. This view is shared by Paarlberg and Lavigna (2010), who stressed that in public administration, the behaviors of direct supervisors is essential to generate public service motivation among employees.

- The Expectancy Value Theory

This study is also based on Vroom's (1964) Expectancy Value Theory. The theory proposes that motivation for a given behavior is determined by two factors: (i) expectancy and (ii) value (i.e., the degree to which an individual values the desired result). Motivation is greater when expectancy and values are high. Kjeldsen's (2012) proposition that public or political values have a lot in common reinforces this claim. It is difficult to imagine individuals expressing manifestations of public service motivation without having any political values whatsoever. In its recommendations, the Global Centre for Public Service Excellence (GSPSE, 2014) embraces the gist of these three theories as it suggests that to improve the motivation of employees, institutions delivering public services should select aspirants with advanced political values, create a desirable culture in the organization, promote leaders with values, and uphold a society that is civic-minded.

The hypothesized model presented in Figure 1 is composed of two types of latent constructs: exogenous and endogenous variables. The exogenous variables in this study include organizational culture, public leadership and political values and the endogenous variable, public service motivation. Since the latent variables were not observed directly, it follows that they cannot be directly measured. Thus, the extents of the regression paths from the latent variable to the observed variables are among the most important issues in this study.
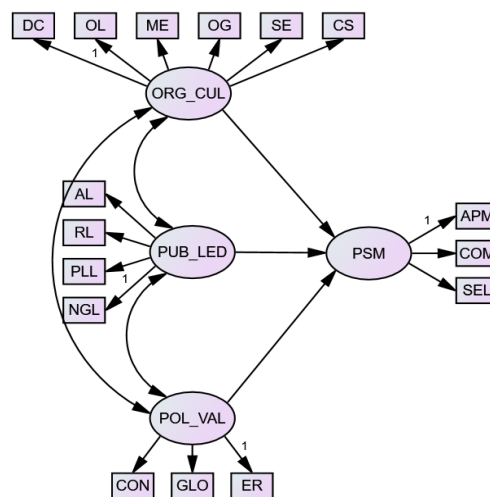

Figure 1: Hypothesized Model Showing the Interrelationships between Variables
(created by the authors for this study)

Exogenous Variables

- Organizational Culture

Organizational culture can be defined as the fundamental beliefs, assumptions and ways of interacting that contribute to the exclusive social and psychological setting of an organization (Arditi et al., 2017; Hartley, 2018). This variable is composed of six indicators. The first indicator is *dominant characteristics*, which refer to the attributes of the organization giving it a distinct identity. The second indicator is *organizational leadership*; a reference to the strategic guidance of the leaders to meet the common goals. The third indicator is *management of employees,* which relates to the effort to assist employees and encourage them to do their best each day to achieve the larger goals of the organization. The fourth indicator, *organizational glue*; captures what is significant to the organization and the mechanisms that bring workers together. The fifth indicator, *strategic emphases*; refers to the strategic focus of

the organization. Finally, *criteria of success*, the sixth indicator; identifies the standards set by the organization to ensure success (Rentzell, 2012).

- Public Leadership

As its name indicates, the second exogenous variable focuses on the public aspect of leadership and is used for measuring public leadership roles. These roles refer to the extent to which public leaders actively support their employees in dealing with public issues (Hartley, 2018). This variable construct consists of five indicators. The first one, *accountability leadership,* refers to traits of leaders that stimulate employees to justify their actions to stakeholders. The second one is r*ule-following leadership*, which describes the attributes of leaders that encourage their workforce to act in harmony with governmental rules and regulations. The third one, p*olitical loyalty leadership,* refers to the characters of leaders who encourage their personnel to align their actions with the interest of politicians, even if this may be exorbitant for them. The fourth indicator is n*etwork governance leadership.* It refers to traits of leaders that inspire their workers to dynamically connect with the relevant stakeholders (Tummers & Knies, 2016).

- Political Values.

Political values refer to the ideas expressing the attitude and behaviors of social groups toward the needs of other large social groups and society as a whole while considering the awareness of their own needs (Atanasov & Simoska, 2016). This construct consists of three indicators. The first one is *conservation*, which is about the expression of the basic motivations associated with conformity, security and tradition. The second one is *globalism*. It narrates the appreciation and acknowledgement of globalism in its broad ideological sense and its particular relevant policies such as, for example, advances in free trade, immigration, and military interventionism. The third indicator, *equal rights,* discusses the association with universalist values relevant to benevolence and emphasizes the concern that every individual outside one's group be fairly and equally treated in society (Bernardo, 2017).

Endogenous Variable: Public Service Motivation

Public service motivation can be defined as an individual's predisposition in responding to motives grounded fundamentally and uniquely in public institutions (Perry, & Wise, 1990). This latent construct is composed of three indicators. The first indicator is *attraction to policy making*, which refers to the disposition of someone who is keen on performing tasks relevant to the formulation of public policies and politics. The second indicator, *compassion*; narrates the recognition of the suffering of others and the need to take action to help them. It is the perfect embodiment of the tangible expression of love for those who suffer. The last indicator is *self-sacrifice*. It refers to the surrendering of one's personal interest for the benefit of others (Gan,, Li, & Wang, 2013).

3. Methodology

The researchers applied the quantitative non-experimental design research method to this study. To generate the best fit model, the structural equation model (SEM) was used. The process, however, was divided into two phases. Firstly, the descriptive-causal method of research was used. It measures the associations of the variables with varying levels of measurement. This method provides for an understanding of what is in a specific situation with a recognized population and the causes and effects between some parameters (Cooper, Schindler, Sun, 2001). Secondly, the structural equation model (SEM) was employed. The SEM aims to examine the association of exogenous and endogenous variables through a series of statistical analyses that determine the proposed causal process and/or model regarding a specific phenomenon (Bagozzi & Yi, 2012). Thanks to these methods, it was possible to generate a best fit model on public service motivation of city government employees with organizational culture, public leadership, and political values as exogenous variables.

The study was conducted in Region XI in the Philippines. Located in the Southeastern portion of the Mindanao Island surrounding the Davao Gulf, it is known as the Davao Region. Given the awards and recognitions received by the local government units, in particular the city governments in this area, the researchers were convinced that it was most suited for this investigation and its potential exhibition for modeling. Modeling public service motivation in this context was perceived to be of great help to other government organizations in ensuring that their employees are motivated to provide effective and efficient public services. This study's respondents were the rank-and-file permanent employees of the six (6) city governments in the Davao Region. According to Bachman and Schutt (2013), structural equation modeling often requires a much larger sample size to maintain power and obtain stable parameter estimates and standard errors. The need for larger sample sizes is also due in part to the program requirements and the multiple observed variables used to define latent variables. Hoelter (1983) determined that the Critical N (CN) statistic where CN ≥ 200 was considered adequate.

This sample size influences the calculation of the minimum fit function in the modified model. Moreover, Shah and Goldstein (2006) suggested that in a structural equation modeling, the sample size should reach at least 200 samples. Since the principle of quantitative inquiries suggests that the greater the sample size the better, and in an effort to comply with the aforementioned literature relevant to SEM samples, the researchers opted to set the sample size to 400 samples. Respondents in this study were determined by the stratified random sampling technique, which applies to several collection methods in which sample participants are selected by chance but with a defined selection probability (Lavrakas, 2008). Through this technique, the samples were taken from the different city governments in Davao Region and proportionally divided based on the number of employees in each one. As mentioned above, the samples in this study were the permanent rank-and-file city government employees. The requirement was that these employees should have at least three years of experience in public service. Excluded from the sample were employees with conterminous, casual, job order and those holding consultancy contracts. The respondents' participation was voluntary. They were free to refuse, and no compensation or benefit was offered to those who took part. They could also withdraw their consent at any time with no penalty incurred. Moreover, they could not be denied legal rights for their participation in this inquiry.

The gathering of data was conducted at the time the new normal was being introduced, during the period August to October 2021. The researchers adhered to the safety protocols set by the government by wearing face mask, face shield and observing the physical distancing while coordinating with government agencies. The researcher adopted four questionnaires downloaded from web sources. The instrument used for organizational culture was adapted from Rentzell's (2012) and the one for public leadership from Tummers and Knies' (2016) study, entitled *Measuring Public Leadership: Developing Scales for Four Key Public Leadership Roles*. As to the questionnaire for political values, it was based on Bernardo's (2017) research study, entitled *Exploring Political Values of Filipinos Using an Ethic Approach*, and that on public service motivation, from Gan et al.'s (2013) research, entitled *Public Service Motivation Measurement: A Test for Perry's Proposed Scale in China*. To ensure the reliability and validity of these instruments, a pilot testing and validation were conducted. The pilot testing was conducted among the government employees of Kapalong. In addition, the researchers enrolled the assistance of five validators who are known experts in the field of public administration, management, and research.

4. Results
- *Levels of the Exogenous Variables*

This section presents, analyzes, and interprets the findings for organizational culture in the city governments. Shown in Table 1 are the results on the level of organizational culture with means ranging from 3.79 to 3.89 and a corresponding overall mean of 3.84 with a standard deviation of 0.77, which can be described as high. The overall result indicates that the practices and activities relevant to the measurements utilized in this study in relation to organizational culture are often in evidence in most of the city governments located in the region of Davao.

Table 1: Level of Organizational Culture

Indicators	Mean	SD	Description
Dominant Characteristics	3.80	0.82	High
Organizational Leadership	3.83	0.89	High
Management of Employees	3.87	0.87	High
Organization Glue	3.89	0.84	High
Strategic Emphases	3.88	0.85	High
Criteria of Success	3.79	0.79	High
Overall mean	3.84	0.77	High

Table 2 shows the results for public leadership in the city governments surveyed in this study. The means range from 3.54 to 4.26 with an equivalent overall mean of 3.89 and a standard deviation of 0.82, which again can be described as high. These results suggest that those who are in position of leadership in city governments in city governments in the Davao region and are holding supervisory or management functions generally adhere to the ideals of accountability, obedience, loyalty, and networks.

Table 2: Level of Public Leadership

Indicators	Mean	SD	Description
Accountability Leadership	3.96	0.90	High
Rule-following Leadership	4.26	1.00	Very high
Political Loyalty Leadership	3.54	1.03	High
Network Governance Leadership	3.80	0.88	High
Overall mean	3.89	0.82	High

The results regarding the level of political values of employees working in the city governments in the Davao region are presented in Table 3. The means range from 3.02 to 3.79 with a corresponding overall mean of 3.50 and a standard deviation of 0.72, which is regarded as high. The overall results suggest that these employees espouse principles relevant to the political values of equality, globalism, and conservationism.

Table 3: Level of Political Values

Indicators	Mean	SD	Description
Conservation	3.68	0.83	High
Globalism	3.02	0.97	Average
Equal Rights	3.79	0.89	High
Overall mean	3.50	0.72	High

- Levels of the Endogenous Variable

Table 4 shows the findings regarding the public service motivation of the employees working in the city governments in the Davao region. The means range from 3.77 to 3.99 with an equivalent overall mean of 3.85 and a standard deviation of 0.83, which is perceived as high. These findings point to the fact that these city government employees of city generally exhibit a strong motivation for public service as they tend to act selflessly, be attracted to policymaking, and feel compassionate towards others.

Table 4: Level of Public Service Motivation

Indicators	Mean	SD	Description
Self-sacrifice	3.77	0.83	High
Attraction to Policy Making	3.99	0.92	High
Compassion	3.79	0.91	High
Overall mean	3.85	0.83	High

- Correlation between Organizational Culture and Public Service Motivation

Presented in Table 5 is the significance of the relationship between organizational culture and public service motivation. With an overall computed r-value of .757 and an equivalent probability value of .000, it is much lower than the .05 level of significance set in this study. Hence, the null hypothesis is rejected. This means that there is a high, positive, and significant correlation between these two variables. This also implies that the establishment of a desirable organizational culture in city governments, is strongly associated with the level of public service motivation of their employees.

Table 5. Correlation between Organizational Culture and Public Service Motivation

Organizational Culture	Public Service Motivation			
	Self-sacrifice	Attraction to Policy Making	Compassion	Overall
Dominant Characteristics	.679** (.000)	.701** (.000)	.630** (.000)	.715** (.000)
Organizational Leadership	.695** (.000)	.649** (.000)	.565** (.000)	.677** (.000)
Management of Employees	.683** (.000)	.673** (.000)	.633** (.000)	.707** (.000)
Organization Glue	.673** (.000)	.734** (.000)	.614** (.000)	.719** (.000)
Strategic Emphases	.680** (.000)	.699** (.000)	.625** (.000)	.713** (.000)
Criteria of Success	.604** (.000)	.584** (.000)	.586** (.000)	.631** (.000)
Overall	.731** (.000)	.735** (.000)	.664** (.000)	.757** (.000)

- Correlation between Public Leadership and Public Service Motivation

Table 6 shows the significance of the relationship between public leadership and public service motivation, which with a general computed r-value of .796 and a corresponding probability value of .000, is extremely lower than the .05 level of significance. Therefore, the null hypothesis is rejected. This indicates that there is a high, positive, and significant correlation between these two variables. Clearly, the leadership approach adopted by the administrators in city governments directly influences the public service motivation of employees.

Table 6: Correlation between Public Leadership and Public Service Motivation

Public Leadership	Public Service Motivation			
	Self-sacrifice	Attraction to Policy Making	Compassion	Overall
Accountability Leadership	.785** (.000)	.773** (.000)	.715** (.000)	.808** (.000)
Rule-following Leadership	.716** (.000)	.814** (.000)	.692** (.000)	.791** (.000)
Political Loyalty Leadership	.480** (.000)	.357** (.000)	.435** (.000)	.450** (.000)
Network Governance Leadership	.709** (.000)	.633** (.000)	.612** (.000)	.693** (.000)
Overall	.780** (.000)	.747** (.000)	.713** (.000)	.796** (.000)

- Correlation between Political Values and Public Service Motivation

The significance of the relationship between political values and public service motivation is shown in Table 7. It can be seen that with an overall computed r-value of .725 and an equivalent probability value of .000, it is remarkably lower than the .05 level of significance. This suggests that there is a high, positive, and significant association between these two variables. Thus, the null hypothesis is rejected. This indicates that in city governments in in the Davao region, employees' motivation for public service is related to the political values they hold.

Table 7: Correlation between Political Values and Public Service Motivation

Political Values	Public Service Motivation			
	Self-sacrifice	Attraction to Policy Making	Compassion	Overall
Conservation	.652** (.000)	.671** (.000)	.667** (.000)	.708** (.000)
Globalism	.346** (.000)	.148** (.000)	.304** (.000)	.281** (.000)
Equal Rights	.802** (.000)	.733** (.000)	.660** (.000)	.779** (.000)
Overall	.743** (.000)	.632** (.000)	.671** (.000)	.725** (.000)

- Influence of Exogenous Variables on Public Service Motivation

Table 8 shows the combined influence of organizational culture, public leadership, and political values on public service motivation. The computed f-value is 285.600, the r-value .827, the r-squared value .684, and the p-value .000 lower than the .05 level of significance. As a result, the null hypothesis is rejected. This indicates that the three exogenous variables i this study significantly influence the endogenous variable. It can also be seen that the three exogenous variables have a p-value lower than the required level of significance (<.050). Public service motivation is influenced by organizational culture (with a p-value of .000); public leadership (with a p-value of .000); and political values (with a p-value of .000), which means all the exogenous variables significantly influence the endogenous variable.

Table 8: Influence of Exogenous Variables on Public Service Motivation

Exogenous Variables	Public Service Motivation			
	B	*β*	*t*	*Sig.*
Organizational Culture	.262	.241	4.411	.000
Public Leadership	.401	.394	6.533	.000
Political Values	.301	.259	5.927	.000

$$R = .827$$
$$R^2 = .684$$
$$F = 285.600$$
$$P = .000$$

Next, to determine which exogenous variables best influence public service motivation, it is necessary to examine the unstandardized beta coefficients. Organizational culture in relation to public service motivation reveals a beta of .262. This means that each unit increase in organizational culture will result in a .262 increase in public service motivation. As to the influence of public leadership on public service motivation, the beta is .401, which means that a unit increase in public leadership will generate a .401 increase in employees' public service motivation. Finally, the effect of political values on public service motivation reveals a beta of .301. This suggests that a unit increase in the political values of employees will result in a .301 rise in public service motivation. Therefore, public leadership is the best influencer of the public service motivation of employees working for city governments.

- Establishing the Best Structural Model
This study tested and framed five hypothesized (conceptual) models. The models generated were evaluated based on their practicality which was braced by robust theoretical contentions.

Table 9: Summary of Goodness of Fit Measures of the Six Generated Models

Model	P-value (>0.05)	CMIN / DF (<2)	NFI (>0.95)	TLI (>0.95)	CFI (>0.95)	GFI (>0.95)	RMSEA (<0.05)	P-close (>0.05)
1	.000	22.782	.710	.666	.719	.625	.234	.000
2	.000	13.091	.838	.814	.848	.708	.174	.000
3	.000	8.947	.914	.900	.923	.853	.141	.000
4	.000	11.581	.891	.873	.899	.780	.163	.000
5	.000	26.113	.798	.724	.804	.692	.251	.000
6	.157	1.785	.981	.979	.987	.963	.007	.126

In determining the best fit model, all the indices encompassed must consistently fall within the acceptable ranges. The Chi-square/degrees of freedom (CMIN/DF) value should be less than 2 with its corresponding p-value greater or equal to 0.05. The Root Mean Square of Error Approximation (RMSEA) value must be less than 0.05, and its corresponding p-close value greater or equal to 0.05. Other indices, such as the Normed Fit Index (NFI), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and Goodness of Fit index (GFI must all be greater than 0.95. The modified model six shows the link between organizational culture and public leadership and its direct effect on the endogenous variable (public service motivation). This model fulfills all the aforementioned acceptable range of the indices considered in this study. The generated model six have indices that show a very good fit to the data; MIN/DF = 1.785, p-value = .157; RMSEA = .007; p-close = .126; NFI .981; TLI .979; CFI .987; and GFI .963.

All the indices with corresponding values were greater than 0.95 and met the goodness of fit measures' requirements. Consequently, the null hypothesis was rejected. It can therefore be concluded that there exists a model that best fits the public service motivation of government employees as shown in Figure 2. The generated structural model six (or best fit model) shows that there are two remaining latent variables on the best fit model for public service motivation of government employees.
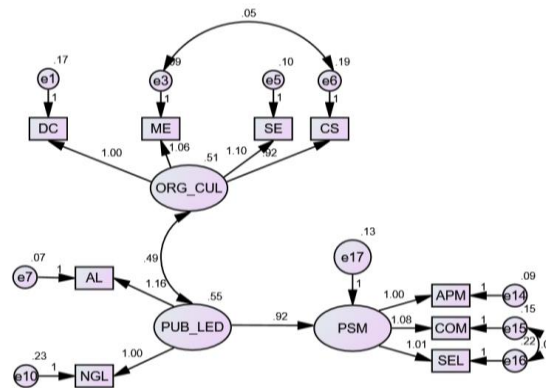

Figure 2: Best Fit Model for Public Service Motivation

Furthermore, as can be seen in Table 10, the latent variable (public leadership) must be associated with organizational culture. This combination will have a substantial direct effect on the public service motivation of government employees (Beta = .915).

Table 10: Direct and Indirect Effects of Exogenous Variables on Endogenous Variable

Variables	Direct Effect	Indirect Effect	Total Effect
Organizational Culture	.000	-	.000
Public Leadership	.915	-	.915

Regression weights were measured to scrutinize the effects between measured and latent variables. Table 11 shows the estimates of the variable regression weights for the best fit model. Public leadership has a beta estimate of .915 with a p-value of .000, considered to be significant for the endogenous variable. Given its link between with organizational culture, public leadership significantly predicts the public service motivation of government employees.

Table 11: Estimates of Variable Regression Weights in Generated Model 6

			Estimate	S.E.	Beta	C.R.	P-Value
PSM	<---	PUB_LED	.915	.045	.879	20.191	***
DC	<---	ORG_CUL	1.000		.870		
ME	<---	ORG_CUL	1.057	.038	.931	27.752	***
SE	<---	ORG_CUL	1.098	.040	.930	27.721	***
CS	<---	ORG_CUL	.922	.042	.836	22.126	***
APM	<---	PSM	1.000		.931		
COM	<---	PSM	1.084	.038	.906	28.437	***
SEL	<---	PSM	1.009	.041	.854	24.496	***
NGL	<---	PUB_LED	1.000		.838		
AL	<---	PUB_LED	1.158	.044	.955	26.089	***

Table 12 presents the measures of the goodness of fit of the structural best fit model. The calculated model fit is highly acceptable. The chi-square divided by the degrees of freedom or CMIN/DF is 1.785, with a probability of .157. This indicates a perfect fit of the model to the data. This is strongly supported by the RMSEA index (.007), which is less than 0.05, with its corresponding p-close .126 >0.05. Likewise, the other indices satisfy the requirement of the goodness of fit measures; NFI .981>.95, TLI .979>.95, CFI .987>.95, and GFI .963>.95. Thus, this model is the best fit for the public service motivation of government employees.

Table 12: Goodness of Fit Measures of the Best Fit Model

Index	Criterion	Model Fit Value
CMIN/DF	0 < value < 2	1.785
P-value	>0.05	.157
NFI	>0.95	.981
TLI	>0.95	.979
CFI	>0.95	.987
GFI	>0.95	.963
RMSEA	<0.05	.007
P-close	>0.05	.126

In examining the attributes of the best fit model for public service motivation it can be observed that only two latent variables remained exogenous. The organizational culture latent variable still consists of four indicators: dominant characteristics, management of employees, strategic emphases, and criteria of success. Public leadership, the other latent variable in this study also kept it two indicators, namely, accountability leadership and network governance leadership. This is also the case with public service motivation, the endogenous latent variable in this study. It kept its three indicators: attraction to public policy, compassion, and self-*sacrifice*. Hence, as observed in the best fit model, this points to the significant relationship of organizational culture with public leadership and its direct effect on public service motivation. The implication is that when seeking to advance the degree of public service motivation of government employees, public leadership should be supported by the desirable organizational culture.

5. Discussion and Conclusion

The examination of the combination of organizational culture and government employees' public service motivation indicated that there was a positive and significant correlation between them. Moreover, the influence test revealed that organizational culture significantly influenced public service motivation. These findings confirm that the culture of an organization in terms of salaries, duties, budgeting, and work environment affects the public service motivation of its employees (GCPSE, 2014). Its influence on employees' public service motivation may be positive or negative, depending on the type of culture existing within the organization (Austen & Zacny, 2015). In other words, if the existing organizational culture is not desirable as perceived by employees, it will most likely lead to the demotivation of the employees particularly in the public service sector. Thus, employee management, strategic emphases, and criteria of success should always be part of the organization effort motivating employees. Since only a desirable culture within the organization is positively correlated to motivation, the existing culture may therefore need to be re-examined and overhauled so as to significantly enhance its motivating potential (Panagiotis et al., 2014). Indeed, only a conducive climate will prompt civil servants to give their best. The findings in this study also make it clear that improving the performance of government institutions is conditioned by the capacity of the leaders of the local governmental organizations to create an environment conducive to serving the public.

For one, they should make sure that the culture of the organization they lead helps workers' identity with the organization and take pride in it. Organizational identification has been shown to improve public service motivation and lead to higher organizational performance levels (Miao et al., 2019). This requires them, among other measures to be taken, to form an environment where employees feel that they contribute to the public good (Moynihan & Pandey, 2007). There is a strong linkage between employee identification with the organization and the experience of employees within their organization. According to Quratulain and Khan (2015), it is essential for workers to have a strong personal fit feeling and see the relevance of their job requirements.

Being assigned to a task for which an employee does not feel comfortable and/or competent performing can be a strong demotivator. It has also been found that a performance-driven culture is significantly and positively correlated to government workers' norm-based and affect their public service motivation (Lee, Oh, & Park, 2020). Employees need to feel they contribute to the quality of the services rendered and to the efficiency of the organization. This requires leaders to create a climate of mutual trust, respect, and support (Mahal, 2009). The findings also affirmed that being able to increase workers' motivation towards public service requires leaders to balance their different working styles and profiles (Belrhiti et al., 2020). It goes without saying that the behavior and attitude of government officials affect the behavior of employees and their level of motivation (Apak & Gümüş, 2015). They should lead by example and their work behavior should match their rhetoric as they are ultimately responsible for upgrading the motivation of their subordinates in the delivery of public services. The finding in this study that the quality of political and administrative leadership is positively correlated with public service motivation and employee engagement is in keeping with the conclusion reached by Ugaddan and Park (2017) in their study of leadership quality and its influence on motivation. Additionally, leadership has been found to affect public service motivation, which mediates the relationship between leadership and public sector performance (Mavhungu & Bussin, 2017). The combination of these two critical elements will result in positive outcomes for the organization (Vandenabeele, 2014).

The analysis of the connection between political values and public service motivation of revealed a positive and significant relationship. Political values strongly influence the motivation of employees in public service. Recall from above that political values were defined as the ideas expressing the attitude and behaviors of social groups toward the needs of other large social groups and society while considering the awareness of their own needs. Also recall that they consist of three indicators, conservation, globalism, and equal rights (Bernardo, 2017). Respondents' public service motivation tends to be higher among those whose ideals are aligned with the organization, in this case, local governments. An individual's ideology generally fulfills distinctive motivational and psychological, and personality-oriented characteristics (Weber, 2019). According to Wang et al. (2020), generally people who are motivated in terms of public service are expected to be compassionate, attracted to public policy, and unselfish. In terms of political orientation, these values translate into a democratic system that promotes equity, justice, and accountability. Those moral concerns and value orientation have a bearing on public service motivation. Local government employees cannot dissociate these personal values from their work and the tasks they are to fulfill. There must be a match between the two and therefore also between them and the organizational culture. Values and moral concerns on the one hand and public service motivation on the other benefit from one another development. While values act as motivators, motivation is oriented towards values and ethical concerns (Andersen et al., 2013). Public work should be a continuance of those values. This is essential for public service motivation (Greentree, 2011).

- Best Fit Model for Public Service Motivation

The best fit model for public service motivation of government employees generated in this study indicates that the two latent exogenous variables in this model significantly predict the latent endogenous variable (public service motivation). The first latent variable (organizational culture) had four remaining observable variables based on the generated model, namely dominant characteristics, management of employees, strategic emphases, and criteria of success. The second latent exogenous variable (public leadership) as grounded in the model, generated only two observable variables namely accountability leadership and network governance leadership. Both are significant in predicting public service motivation which consists of three observable variables, namely, attraction to public policy, compassion, and self-sacrifice. On the other hand, it can be observed in the model that direct influence only pertains to the link of public leadership towards public service motivation. Since organizational culture is associated with public leadership, the implication is that to predict public service motivation, the relationship between public leadership and organizational culture is essential, which in turn suggests that leaders in government organizations should make sure that they lead in accordance with the principles of accountability and network governance. They should also make sure that these principles are reflected in the culture of the organization. With this, advancement of the level of public service motivation is expected among employees and with it, an effective and efficient delivery of public services.

The findings in this study support Perry and Wise's (1990) public service motivation theory. The motivations of government employees toward public service are the direct outcome of the existing level of leadership governing them. Moreover, the specific culture of the organization has also be shown to significantly impact the degree of motivation an employee has providing effective service and delivering an efficient performance for the sake of public service. In that sense, public service motivation is the product of the aggregation of the competence, effort, and participation of people inside government institutions. The influence of organizational culture in government organizations as perceived by their employees is high. This signifies that the culture being measured in this study is obviously relevant, desirable as an organizational, and conducive to employees being productive and effective. Public leadership is also high in those city governments. Therefore, the competence of administrators and officials in the city governments in terms of accountability, rule-following, political loyalty, and network governance is real. Besides, employees in city governments have strong political values. Employees often manifest principles of equality, globalism, and conservationism, which are all relevant to political values. Furthermore, the degree of public service motivation of city government employees is high. Employees often feel motivated to provide services for the public as they are selfless, compassionate, and attracted to policymaking.

In summary, organizational culture, public leadership, and political values are all significantly correlated and influence the degree of public service motivation of city government employees. Based on the different tests conducted, all the exogenous variables are positively related to the endogenous variable. This implies that the desirable culture in the organization, the competence of public leaders as well as the values of employees relevant to politics affect positively and significantly the motivation of employees to provide quality services to people. So, if a government organization adopts an organizational culture that facilitates quality outcomes, if its leaders show real advance competence in leadership, and if employees hold political values, there is a high probability that its employees will exhibit a much greater public service motivation beneficial to all the stakeholders.The best fit model for public service motivation of government employees articulated in this study demonstrates that public leadership directly impacts public service motivation and should be reinforced by the

organizational culture. In other words, a strong combination of leadership and organizational culture is necessary for advancing the employees' motivation to provide quality public services. These findings are in keeping with the Public Service Motivation theory of Perry and Wise (1990) as the factors influencing public service motivation of government employees as expounded in this theory are also found in the best fit model of this study.

- Recommendations

In view of the findings in this study, it is recommended that the Department of the Interior and Local Government (DILG) use the best fit model generated in this study as a reference in initiating interventions to advance the degree of public service motivation of employees. This should be done via additional leadership training, particularly for those holding supervisory and managerial positions in the organization. It is also critical that leaders in local government organizations should be cognizant of the significance of training and professional development to their employees. In addition, the DILG should also consider revisiting the policies pertaining to the culture of these organizations and their implementation to ensure that they all are still relevant and contribute positively to their operations. Furthermore, it is recommended that local government officials evaluate their leadership competence and create a more conducive environment for their employees since both issues are found to be significant in advancing the public service motivation of these employees. Regarding future studies, researchers should initiate scientific inquiries on other exogenous variables in modeling the public service motivation of government employees in a different setting as a rigorous examination will provide even more conclusive findings.

References

Andersen, L. B., & Pedersen, L. H. (2012). Public service motivation and professionalism. *International Journal of Public Administration*, *35*(1): 46-57.

Andersen, L. B., Jensen, U. T., & Kjeldsen, A. M. (2020). *Public service motivation and its implications for public service. The Palgrave Handbook of the Public Servant*, pp. 1-18. Palgrave Macmillan e033010.

Apak, S., & Gümüş, S. (2015). Research about the effect of the leadership qualities of public administrators on the motivation of employees. *Procedia-Social and Behavioral Sciences*, 210, 368-377.

Austen, A., & Zacny, B. (2015). The role of public service motivation and organizational culture for organizational commitment. *Management, 19*(2), 21-34.

Bachman, R., & Schutt, R. K. (2013). *The practice of research in criminology and criminal justice*. Sage.

Bagozzi, R. P., & Yi, Y. (2012). Specification, evaluation, and interpretation of structural equation models. *Journal of the Academy of Marketing Science*, *40*(1), 8-34.

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.

Belrhiti, Z., Van Damme, W., Belalia, A., & Marchal, B. (2020). The effect of leadership on public service motivation: A multiple embedded case study in Morocco. *BMJ open*, *10*(1). e033010.

Bernardo, A. B. (2017). Exploring political values of Filipinos using an ethic approach. *Philippine Journal of Psychology*, *50*(2). 50(2), 7-38.

Buan, L. (2017, February 15*). LGUs, PNP have most corruption cases – Ombudsman. Rappler.com*. Retrieved February 10, 2002, from https://www.rappler.com

Cooper, D. R., Schindler, P. S., & Sun, J. (2001). *Business research methods* (Vol. 9, pp. 1-744). New York: McGraw-Hill.

Franco, L. M., Bennett, S., & Kanfer, R. (2002). Health sector reform and public sector health worker motivation: A conceptual framework. *Social Sciences & Medicine*, *54*(8), 1255-1266.

Gan, K., Li, L., & Wang, Q. (2013, May). *Public service motivation measurement: A test for Perry's proposed scale in China.* In *2013 International Conference on Public Management* (ICPM-2013). Atlantis Press.

GCPSE (2014). *Motivation of public service officials: Insights for practitioners.* Discussion paper of the *Global Centre for Public Service Excellence*. Retrieved January 28, 2022, from www.undp.org/publicservice.

Greentree, V. W. (2011). *Choosing to serve: Modeling antecedents of public service motivation in undergraduate students.* Retrieved February 16, 2022, from https://digitalcommons.odu.edu/cgi/viewcontent.cgi?article=1025&context=public service_etds

Hoelter, J. W. (1983). The analysis of covariance structures: Goodness-of-fit indices. *Sociological Methods & Research*, *11*(3), 325-344.

Kjeldsen, A. M. (2012). Dynamics of Public Service Motivation: Attraction and Socialization Effects in the Production and Regulation of Social Services. *Paper presented at the 16th Annual Conference of the International Research Society for Public Management*, April 11–13, Rome, Italy

Kjeldsen, A. M., & Jacobsen C. B. (2013). Public service motivation and employment sector: Attraction or socialization? *Journal of Public Administration Research and Theory 23*(4): 899–926.

Lavrakas, P. J. (2008). *Encyclopedia of survey research methods.* Thousand Oaks, CA: Sage Publications.

Lee, H. J., Oh, H. G., & Park, S. M. (2020). Do trust and culture matter for public service motivation development? Evidence from public sector employees in Korea. *Public Personnel Management*, *49*(2), 290-323.

Mahal, P. K. (2009). Organizational culture and organizational climate as a determinant of motivation. *IUP Journal of Management Research*, *8*(10), 38-51.

Mavhungu, D., & Bussin, M. H. (2017). The mediation role of motivation between leadership and public sector performance. *SA Journal of Human Resource Management*, *15*(1), 1-11.

Miao, Q., Eva, N., Newman, A., & Schwarz, G. (2019). Public service motivation and performance: The role of organizational identification. *Public Money & Management*, *39*(2), 77-85.

Moynihan, D. P., & Pandey, S. K. (2007). The role of organizations in fostering public service motivation. *Public Administration Review*, *67*(1), 40-53.

O'Riordan, J. (2013). Public service motivation. *State of the Public Service Series*, *8*(11), 1-36.

Paarlberg, L. E., & Lavigna, B. (2010). Transformational leadership and public service motivation: Driving individual and organizational performance. *Public Administration Review*, *70*(5), 710-718.

Panagiotis, M., Alexandros, S., & George, P. (2014). Organizational culture and motivation in the public sector. The case of the city of Zografou. *Procedia Economics and Finance*, *14*, 415-424.

Perry, J. L., & Wise, L. R. (1990). The motivational bases of public service (PDF). *Public Administration Review*, *50*(3), 367–373.

Quratulain, S., & Khan, A. K. (2015). How does employees' public service motivation get affected? A conditional process analysis of the effects of person-job fit and work pressure. *Public Personnel Management*, *44*(2), 266-289.

Rentzell, S. V. (2012). *Organizational culture assessment instrument. Results through people.* Retrieved January 13, 2022, from https://www.enterprise-ireland.com/en/Events/OurEvents/Finance-for-Growth/Culture-Questionnaire-April-12.pdf

Requejo, R. E. (2021). *Duterte names people sacked for corruption. Manilastandard.net.* Retrieved December 13, 2021, from https://manilastandard.net/news

Shah, R., & Goldstein, S. M. (2006). Use of structural equation modeling in operations management research: Looking back and forward. *Journal of Operations Management*, *24*(2), 148-169.

Tummers, L., & Knies, E. (2016). Measuring public leadership: Developing scales for four key public leadership roles. *Public Administration*, *94*(2), 433-451.

Ugaddan, R. G., & Park, S. M. (2017). Quality of leadership and public service motivation: A social exchange perspective on employee engagement. *International Journal of Public Sector Management*, *30(*3), 270-285.

Vandenabeele, W. (2007). Toward a public administration theory of public service motivation: An institutional approach. *Public Management Review*, *9*(4), 545-556.

Vroom, V. H. (1964). *Work and motivation*. San Francisco: Jossey-Bass.

Wang, T. M., van Witteloostuijn, A., & Heine, F. (2020). A moral theory of public service motivation. *Frontiers in Psychology*, 11. 517763.

Weber, C. (2019). *Ideology and values in political decision making. Oxford Research Encyclopedia of Politics*. Retrieved May 1, 2020, from https://oxfordre.com/politics/view/10.1093/acrefore/9780190228637.001.0001/acrefore-9780190228637-e-998.

Influence of Integrated Marketing Communication and Tourism Involvement on Local Experience-Based Tourism Decision

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Abstract

The purpose of this research paper is to study the influence of integrated marketing communication and tourism involvement on local experience-based tourism decisions in Thailand. In addition, it seeks to examine the effect of integrated marketing communication on tourism involvement in local experience-based tourism. The focus is on tourism along local experience routes in Buriram and Surin provinces. The population is Thai tourists with or without experience in local experiential tourism. Data was collected online using a questionnaire. 352 datasets were statistically analyzed using a PLS-SEM structural equation analysis. The results indicates that integrated market communication and tourism involvement have a significant positive influence on local experience-based tourism decision-making. Moreover, integrated marketing communication has a direct influence on tourism involvement. The results also reveal the direct and indirect influence of integrated marketing communication factors on local experiential tourism decisions. Government agencies and/or community operators involved in local experience-based tourism routes should focus on managing both integrated marketing communications and tourism involvement as it will encourage tourists to make local experiential tourism decisions.

Keywords: Integrated Marketing Communication, Tourism Involvement, Decision-Making, Local Experience-based Tourism

1. Introduction

The tourism industry plays a major role in the economies of many countries around the world and can significantly affect a nation's growth as it has strong ramifications with many other sectors, such as the hotel industry, the travel industry, the transport industry, and the food and beverage industry, to name a few (Manirochana, Junead, & Jamnongchob, 2021; Nootayasakul & Pasunon, 2016). Thailand, a country renowned for its beautiful sceneries and unique tourist attractions, attachment to traditions, and smiling people, is no exception (Rakmai et al., 2022; Suwannasank & Kheokao, 2019). According to the Bank of Thailand, in 2019, the year before the Covid-19 pandemic brought the world to a standstill, the gross domestic product (GDP) of the Thai tourism sector was 2.9 trillion baht (US$78.24 billion), accounting for 20 percent of Thailand's 2019 GDP (Bank of Thailand, 2021). By comparison, in 2021, the year the world started to recover from the pandemic, Thailand's tourism GDP was a meagre 4.52 billion baht (US$121.9 million), accounting for 2.80% of Thailand's GDP, a far cry from pre-Covid-19 statistics. Thailand is expected to return to pre-pandemic data by 2024 as travelling is slowly increasing across the globe.

The tourism industry can be broken down into many different types of tourism, each with its own specific purpose, ranging from recreational tourism to nature tourism, cultural tourism, adventure tourism, or medical tourism to name a few (Konwar & Chakrabarty, 2020). Given the many different purposes for which individuals travel, the list of tourism type is long and almost infinite, as new kinds of tourism keep emerging. One type of tourism for which there has been increasing interest in Thailand is community tourism, which can be defined as tourism that is specific to a community area that has wisdom, traditions, as well as cultural and historical or ecological places where the community takes part in tourism activities (Rakmai et al., 2022). The rising demand for this particular type of tourism is largely due to the Thai government's effort to build self-reliant communities (Konwar & Chakrabarty, 2020) and promote domestic tourism through the Tourism Authority of Thailand (TAT), the office in charge of articulating Thailand's tourism policy (Tourism Authority of Thailand, 2022). Typically, the participation of the community stems from a sense of oneness with that community and pride in its local wisdom as well as a desire to take responsibility in developing its own locality (Nootayasakul & Pasunon, 2016, Saothong & Puyjorn, 2021). Community tourism is seen as a form of tourism that creates new experiences for tourists. Today, many tourists want to have a new and memorable experience when traveling. This is the reason why tourism activities that can provide such experiences are becoming more and more popular (Manirochana et al., 2021). It is also precisely why this kind of tourism has also been referred to as 'experiential tourism,' which has become one of the most sought-after types of tourism among tourists. Experiential tourism can be defined as a trip that creates a unique and memorable experience and leaves lasting impressions.

It is linked to community-based or enterprise-based tourism. Since it involves touring a specific area or locality and creating memorable experiences and good memories for the travelers, it can be referred to as local experiential tourism or local experience-based tourism. While previous studies have highlighted the value-added benefits of using local cultural resources and related businesses for tourism in the lower Northeastern region (e.g. Boontum & Bussaparoek, 2021), research on local experiential tourism, however, is still relatively scarce, especially on travel routes in the Buriram and Surin Provinces, hence the focus of this study on these areas. More specifically, zeroing in on local experiential tourism in these two Northeast provinces, this study examines two key factors: (i) integrative marketing communication and (ii) tourist involvement and how they influence travelers' decision-making process in relation to a specific tourism route in the Buriram and Surin provinces. This study was conducted in 2021 as part of the government's policy over the last ten years to promote sustainable local development (Strategy and Planning Division of the Ministry of Tourism and Sports, 2018). Its goal was to effectively support this tourism policy in both provinces as well as the efforts by both the public and private sectors to promote this local experiential tourism route and drive tourism growth in both provinces. The results of this study may benefit government agencies, the private sectors, and communities involved in this tourism route. It is also relevant to the fields of tourism and hotel management and may spur further studies of local experiential tourism in these provinces or others in the future.

2. Literature Review
- *Experience-Based Tourism in Thailand*
As noted in the introduction, the tourism industry in Thailand represents an important part of the country's economy. This is largely due to the fact that tourism in Thailand has many advantages such as beautiful tourist attractions and interesting local cultures (Rakmai et al., 2022; Suwannasank & Kheokao, 2019). These advantages have given rise, among others, to a form of tourism that focuses on specific local areas and communities and on creating local

experiences, referred to as we just saw as local experience-based tourism or experiential tourism (Nootayasakul & Pasunon, 2016). Experiential tourism identifies a specific local affiliation with which such localities have activities or routes that will create a positive and memorable experience for tourists traveling on the specified routes. Experiential tourism seeks authentic experiences with tourist attractions in terms of lifestyle, culture, traditions, and participation in local communities that have developed into tourism resources (Junead, Jamnongchob, & Manirochana, 2018). Current data found that modern tourists want to experience tourism that connects with the community through participation in and experience of local lifestyles, traditions, and culture (Manirochana, Junead, & Jamnongchob, 2020). The involvement of local communities in experiential tourism is critical to the operational efficiency and success of this type of tourism (Saothong & Putjorn, 2021). This is especially the case with the involvement of local communities in the decision-making process, benefit-sharing, and assessment of the success of project managements, which is an important aspect of experiential tourism (Junead et al., 2018). This is the reason why this kind of tourism requires cooperation between government agencies, the private sector, and people in local communities that are designated as tourist areas.

- Integrated Marketing Communication

Integrated marketing communication (IMC) can be defined as the utilization of multiple communication channels simultaneously to achieve desired results (Rakmai et al., 2022; Zukowska, 2014). It is a modern marketing concept that manages market communication to consumers by creating or enhancing interest and good relationships with consumers (Chenini & Cherif, 2016). It uses a variety of marketing channels to create brand awareness among consumers (Rakmai et al., 2022). In addition, integrated marketing communication involves the design of the message to be communicated to the target consumers, using various promotional tools such as advertising, public relations, sales promotions, personal selling, direct marketing, internet communication, and trade shows (Konwar & Chakrabarty, 2020; Mihaela, 2015; Wongkunya, 2013; Zukowska, 2014). The objectives of integrated marketing communication are twofold: one is financial goals, the other is the relationship with both current and future customers (Mihaela, 2015). Such communication integration is expected to lead to effective and efficient marketing to further the desired marketing communication objectives (Chenini & Cherif, 2016). Suwannasank and Kheokao (2019) determined that integrated marketing communication focuses on consumer attitudes, needs, and motivations, and, for this reason, is an effective persuasive communication to target consumers. This is also why, as prior studies indicate, integrated marketing communication does influence tourists' decisions (Konwar & Chakrabarty, 2020; Mihaela, 2015; Wongkunya, 2013).

- Tourist Involvement

Consumer or tourist involvement refers to an experience that arises from the consumer's personal relationship with the object or context of consumption (Song, Rui, & Zhang, 2020). It is a personal factor that relates to the needs, interests, or perceived value of tourism made by tourists in the consideration of travel (Lee, Bruwer, & Song, 2015; Yuan, Song, Chen, & Shang, 2019). Tourist involvement in tourism occurs when tourists realize the importance of tourism, perceive its benefits and its value, and engage in meaningful tourism (Lee et al., 2015). It is also related to marketing decisions, depending on how high or low the level of tourist involvement is (Yuan et al., 2019). Tourist involvement in tourism consists of four perspectives: emotional, psychological, cognitive, and social experiences (Song, Rui, & Zhang, 2020). Janprasit and Kunchan (2021) determined that consumer engagement is related to involvement, which in turns affects consumer engagement. Tourist participation is critical to consumer engagement and affects the sharing of information between consumers/tourists and businesses (Simumba & Nchito, 2018).

Tourist involvement has been found to be one of the most important factors affecting tourist attitudes and behaviors (Lee et al., 2015; Samad & Alharthi, 2022). For one, it directly enhances the memorability of the travel experience (Song et al, 2020). According to Lee et al. (2015), tourist involvement is one of the key predictors in the tourism decision-making process. Tourist involvement influences the perceptions and desires of tourists who want to experience tourism (Song et al., 2020). It also affects their behavior, such as, for instance, their support of tourist attractions. Khairani and Fachira (2022) found that marketing strategies, especially digital content marketing, affected tourists' engagement, i.e., the involvement of tourists in what an attraction provides. This finding is consistent with Daszkiewicz and Pukas' (2016) determination that integrated marketing communication contribute to better customer relationships and greater consumer/tourist involvement by enhancing customer connections in the marketing process.

- Tourist Decision

Decision-making is the process by which a consumer chooses what product or service to buy. Decisions are based on a number of factors such as product or service information, marketing factors, social factors, and factors related to the attitudes of the consumers themselves (Nootayasakul & Pasunon, 2016). With regard to travelers, they make their travel decisions before they actually set off by researching both internal and external factors such as income factors, market factors, and socioeconomic factors (Chatphueak & Samphanwattanachai, 2019). Previous studies reveal that marketing factors such as integrated marketing communication programs influence consumer behaviors (Konwar & Chakrabarty, 2020; Mihaela, 2015; Rakmai et al., 2022; Wongkunya, 2013). According to Nootayasakul and Pasunon (2016), factors affecting the decision to travel include convenience factors, service factors, safety factors, and family or relative factors. This is consistent with Mihaela's (2015) study which concluded that integrated marketing communication creates effective messages that affect consumer buying behaviors. This is also in keeping with Wongkunya's (2013) research that shows that integrated marketing communication impacted tourists' decisions with regard to the experience-based tourism with the Roikaensarasin ethnic group in Thailand. Konwar and Chakrabarty (2020) determined that integrated marketing communication, especially advertising, public relations, personal selling, and internet marketing, clearly influences traveler decisions. As noted above, another key predictor in the tourism decision-making process is tourist involvement in tourism (Lee et al., 2015; Song et al., 2020).

- Conceptual Framework

Based on the relevant literature reviewed in this study, the conceptual framework of this research study was developed as shown in Figure 1. It is premised on the theory of consumer behavior that suggests marketers need to focus on and study the factors related to consumer demand and decision-making (Saeed, 2019; Yin, Yu, & Xu, 2021). While consumer behavior studies examine a whole array of internal and external factors as well as the consumer's purchasing decision-making process (Peighamberi, et al., 2016), this study focuses on two factors that affect the decisions of tourists in Thailand: (i) integrated marketing communication and (ii) tourism involvement.
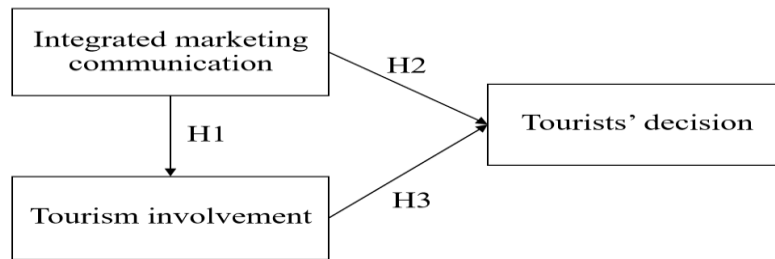
Figure 1: Research Framework (compiled by the authors for this study)

On the basis of this framework, the following hypotheses were articulated:

H1: *Integrated marketing communication significantly influences tourist involvement in local experience-based tourism.*

H2: *Integrated marketing communication significantly influences tourists' decision to choose local experience-based tourism.*

H3: *Tourism involvement significantly influences tourists' decision to choose local experience-based tourism.*

3. Research Methodology

- Population and Sample

In this study of local experience-based tourism routes in Buriram and Surin provinces, conducted in 2021, the population consisted of Thai tourists interested in experiential tourism or in having new experiences, which, as explained earlier, mean being interested in learning about new cultures, traveling in new ways, or engaging with local communities. As the subject of this research, this population is of great interest to local entrepreneurs and the local government who can use the research results to manage tourism organizations aiming at this population and promote local experience-based tourism in the research area. The sample size was determined by using the Cochran formula (Cochran, 1977) with a confidence level of 95 percent and an error of 5 percent. It was therefore calculated that the sample size should be kept at 385. Since the researchers used only valid, and practical questionnaires, the final sample size for statistical analysis 352 in total.

- Research Tool

The questionnaire used in this study as a research tool was developed based on the discussion in the literature review of the three research variables: integrated marketing communication, tourism involvement, and tourism decision. As indicated in Table 1, the first variable is Integrated Marketing Communications, which consisted of 19 questions, developed on the basis of studies by Konwar and Chakrabarty (2020) and Nootayasakul and Pasunon (2016). The second variable, tourism-related, contained 4 questions adapted from studies by Song et al. (2020) and Yuan et al. (2019). The third variable, tourism decision, comprised 8 questions adapted from Nootayasakul and Pasunon's (2016) study. All the questions for the three main variables used a five-point Likert scale (1 = totally disagree to 5 = totally agree). Upon an examination of the reliability of the questions for each of the key variables, it was found that they were highly reliable as the value exceeded 0.70 (Hair, et al., 2014).

Table 1: Reference Sources and Reliability Test of Key Variables

Variable	Item	References	Cronbach's Alpha
Integrated marketing communication (IMC)	19 items (IMC1 to IMC19)	Konwar and Chakrabarty (2020); Nootayasakul and Pasunon (2016)	0.985
Tourism involvement (Involvement)	4 items (Inv1 to Inv4)	Song et al. (2020); Yuan et al. (2019)	0.928
Tourism decision (Decision)	8 items (Deci1 to Deci8)	Nootayasakul and Pasunon (2016)	0.956

- Data Collection
To ensure that the target respondents matched the goals of this study, the researchers used the questions at the beginning of the questionnaire to select only respondents interested in experiential tourism in a local community. For convenience and for avoiding the risk of exposure to Covid-19, data in this research was collected online. The online questionnaire was developed using Google Forms and sent via various online channels such as LINE, Facebook, and email. The convenient randomization method was used as it was found, to be more suitable for conducting research under the unusual Covid-19 situation and more convenience for collecting data on a larger scale. Since collecting information online was done through a platform whose target audience was tourists who regularly use it, the surveys could be sent to a wide national level.

- Statistical Analysis
Statistical analysis of this research was done conducting a descriptive statistics analysis and a PLS-SEM structural equation model analysis. The descriptive statistical analysis consisted of frequency, percentage, mean, standard deviation, skewness, and kurtosis. For the statistical analysis of the relationship between variables in this research, the researcher used the 2.3.1 version of the ADANCO program to analyze the structural equation model. This program analyzes the structural equation model in the PLS-SEM. The analysis is divided into two phases: the first is the analysis of the measurement model, and the second is the analysis of the structural model. The use of this statistical analysis of structural equations is appropriate to draw conclusions based on the hypothesis studied about the influence of paths between independent and dependent variables in the research model.

4. Results
Data from the 352 respondents was statistically analyzed, using both a descriptive and inferential analysis, as shown in Tables 2-7.

- Descriptive Analysis
The descriptive statistical analysis results are shown in Tables 2 and 3, which provide a preliminary analysis of the respondents' data and key variables in this research. As can be seen in Table 2, the majority of the participants were females (n = 254, 72.2%) and 54.0 percent of the respondents were between twenty and thirty years old (n = 190) and single (n = 265, 75.3%). Most of the respondents' education level was a bachelor's degree (n = 259, 73.6%), and most of them had an income of less than 20,000 Baht (US$575) (n = 268, 76.1%).

Table 2: Descriptive Statistics

Participants' Information		Frequencies	Percent
Gender	Male	93	26.4
	Female	254	72.2
	Others	5	1.4
Age	< 20 years	45	12.8
	20 – 30 years	190	54.0
	31 – 40 years	55	15.6
	41 – 50 years	46	13.1
	51 – 60 years	10	2.8
	> 60 years	6	1.7
Status	Single	265	75.3
	Married	75	21.3
	Divorced	12	3.4
Education	Below Bachelor's degree	48	13.6
	Bachelor's degree	259	73.6
	Above Bachelor's degree	45	12.8
Income	< 20,000 Baht	268	76.1
	20,001 – 40,000 Baht	58	16.5
	40,001 – 60,000 Baht	22	6.3
	> 60,000 Baht	4	1.1

The results of the statistical analysis shown in Table 3 indicate that the mean values of the three research variables that reflected the opinions of the respondents were at a high level. The mean variables for integrated marketing communications, tourism involvement, and tourism decision making were 3.71, 3.99, and 3.95, respectively. Moreover, the standard deviations of the three variables were found to be within the reasonable distribution of the data. The distribution was not excessive. The skewness and kurtosis analysis in the normal distribution curve showed that the data was normally distributed (Hair, et al., 2014).

Table 3: Statistical Analysis of Key Variables

Variable	Means	Standard Deviation	Skewness	Kurtosis
IMC	3.71	0.72	-0.12	-0.55
Involvement	3.99	0.71	-0.40	-0.27
Decision	3.95	0.71	-0.35	-0.32

- Assessment of the Measurement Model
The results for the measurement model are shown in Tables 4 and 5. The measurement model was evaluated to verify the suitability of the observed variables for each latent variable before proceeding with the final analysis of the structural equation model. Table 4 reports the weight of the observed variables in each latent variable and indicates that all the observed variables were suitable for the three latent variables. To assess the construct reliability of the measurement model, three evaluation values were used: Cronbach's Alpha, Dijkstra-Henseler's rho, and the Average Variance Extracted (AVE). To verify the reliability of all the constructs with Cronbach's Alpha and Dijkstra-Henseler's rho evaluations, the standard value must be greater than 0.70 and the standard value for estimating the AVE value be 0.50 or higher (Gelhard & Delft, 2015; Hair, et al., 2017). As shown in Table 4, the three reliability assessments of the measurement model (Cronbach's Alpha, Dijkstra-Henseler's rho, and AVE) were appropriate and met the requirements

Table 4: Construct Reliability of the Measurement Model

Construct	Item	Loading	Cronbach's Alpha	Dijkstra-Henseler's rho	Average Variance Extracted
IMC	IMC1	0.837	0.974	0.977	0.687
	IMC2	0.856			
	IMC3	0.703			
	IMC4	0.682			
	IMC5	0.844			
	IMC6	0.875			
	IMC7	0.879			
	IMC8	0.875			
	IMC9	0.858			
	IMC10	0.860			
	IMC11	0.894			
	IMC12	0.872			
	IMC13	0.715			
	IMC14	0.726			
	IMC15	0.773			
	IMC16	0.833			
	IMC17	0.862			
	IMC18	0.875			
	IMC19	0.873			
Involvement	Inv1	0.875	0.883	0.919	0.741
	Inv2	0.890			
	Inv3	0.828			
	Inv4	0.850			
Decision	Deci1	0.790	0.948	0.957	0.734
	Deci2	0.876			
	Deci3	0.864			
	Deci4	0.790			
	Deci5	0.891			
	Deci6	0.879			
	Deci7	0.887			
	Deci8	0.868			

To assess the discriminant validity of the research model, the Heterotrait-Monotrait (HTMT) method was used. To carry out an evaluation with this method, every pair of constructs is to be considered. The acceptance criterion is that every construct pair must be less than 0.90 (Henseler, Ringle, & Sarstedt, 2015). As the results of the discriminant validity analysis reported in Table 5 indicate, all the pairs of variables were less than 0.9. Therefore, it can be concluded that this measurement model has good discriminative validity.

Table 5: Discriminant Validity Using the Heterotrait-Monotrait (HTMT) Method

Construct	IMC	Involvement	Decision
IMC			
Involvement	0.645		
Decision	0.695	0.653	

- Assessment of the Structural Model
The final step of the statistical analysis conducted in this research was to analyze the structural model. The results are shown in Figure 2 and Tables 6 and 7. Figure 2 shows the result of structural model analysis. It can be seen that the influence relationships of the three paths in the model were statistically significant at the .001 level (***). Details of path coefficients and others are shown in Table 6.
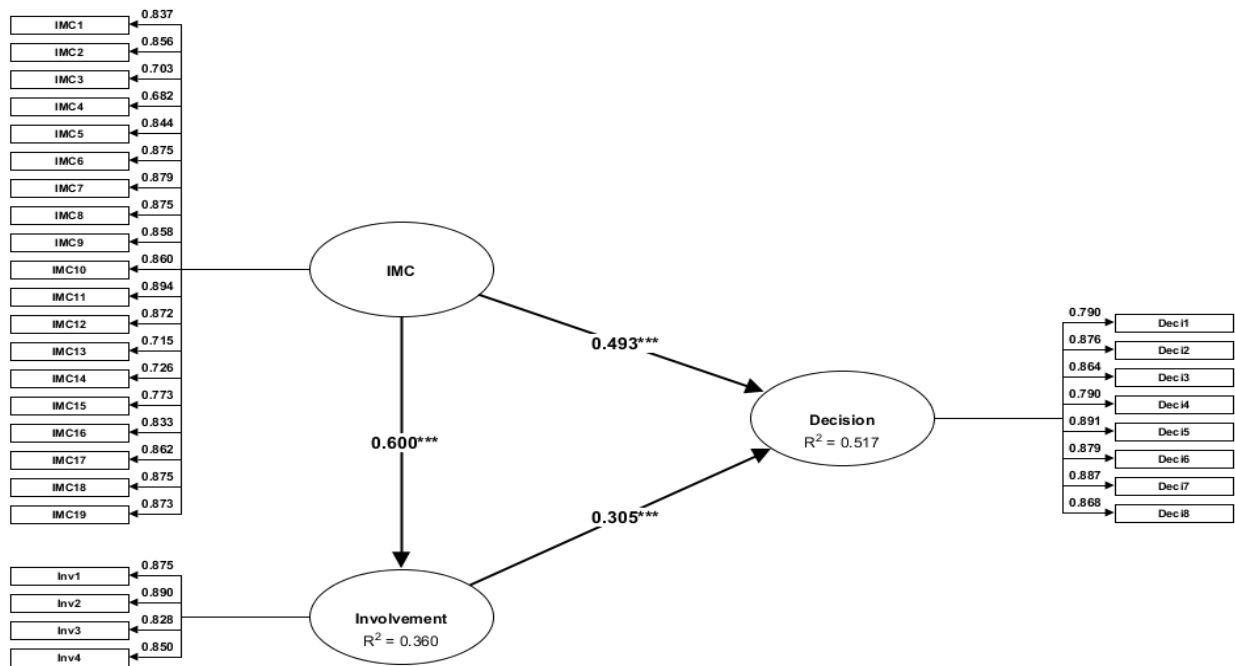
Figure 2: Final PLS-SEM Model

As indicated in Table 6, the path coefficient (Beta) of the effect of integrated marketing communication on tourism decision making is equal to 0.493 (P < .001), the path coefficient of influence of tourism involvement on tourism decision making is equal to 0.305 (P < .001), and the path coefficient of influence of integrated marketing communications on tourism involvement is equal to 0.600 (P < .001). In determining the effect among variables, it was found that the direct influence of tourism involvement on tourists' decision making was equal to 0.305, the direct influence of integrated marketing communications on decision making was equal to 0.494, and the direct influence of integrated marketing communication on tourism involvement was equal to 0.600. As to the indirect influence of integrated marketing communications on decision-making, it was equal to 0.183. However, when comparing the direct and indirect influence of integrated marketing communications on tourists' decision-making, direct influence was shown to be greater than indirect influence. When determining the effect size of the predictive variable with the Cohen's f^2 value, the criterion that the Cohen's f^2 value should be greater than 0.35 indicates that the effect size is large (Gelhard & Delft, 2015). Based on the results of the analysis of the research model, it was found that the effect of IMC on the involvement variable was high (f^2 value = 0.56) while the effect of IMC on Decision and that of Involvement on Decision were both moderate (f^2 values = 0.32 and 0.12 respectively).

Table 6: Results of Structural Analysis

Effect	Beta	Indirect effects	Direct effect	Total effect	P value	Cohen's f^2
Involvement -> Decision	0.305		0.305	0.305	0.000***	0.123
IMC -> Involvement	0.600		0.600	0.600	0.000***	0.563
IMC -> Decision	0.493	0.183	0.494	0.676	0.000***	0.322

Note: *** means the statistical significance at .001 level.

The analysis of the predictive ability of the model using R^2 value reveals that the explained variance of the Involvement variable was equal to 0.360, which indicated a moderate predictive ability. With an R^2 value of 0.517, the explained variance of the decision variable, however, was found to have a good predictive ability (Gelhard & Delft, 2015).

Table 7: Coefficient of Determination

Construct	Coefficient of determination (R^2)	Adjusted R^2
Involvement	0.360	0.358
Decision	0.517	0.514

5. Discussion, Conclusion, and Recommendations

The purpose of this study was to examine the influence of integrated marketing communication relations and tourism involvement on tourism decision-making and study the impact of tourism involvement on tourism decision-making. The study was conducted on the experiential tourism route located Buriram and Surin provinces. This research supported H1. The results confirm that integrated marketing communication has a significant influence on tourism involvement. The findings pertaining to H1 are consistent with several previous studies, including a recent study by Khairani and Fachira (2022), who found that marketing strategies such as content marketing can affect tourist engagement and another by Daszkiewicz and Pukas (2016), who concluded that integrated marketing communication created better customer relationship, and connection in the marketing process. Both studies focus on the involvement of tourism and the utilization of appropriate marketing strategies, especially marketing communications.

This research also supported H2, which examined the influence of integrated marketing communications on tourism decision-making. It was found that integrated marketing communication significantly influence tourism decision making. This is consistent with previous studies, including a study by Mihaela (2015), who concluded that integrated marketing communication created effective content which is apt to affect the behavior of consumers. This study, on integrated marketing communications and consumer behavior, determined that integrated marketing communication was an important tool for consumer behavior in terms of perception, relationship, preference, and decision behavior. This is also in keeping with a study by Wongkunya (2013) who pointed out that integrated marketing communication affected tourists' decisions in experience-based tourism and with one by Konwar and Chakrabarty (2020) who found that integrative marketing communication clearly influenced tourism decisions. In these two studies, the results confirmed that integrated marketing communication influences consumer travel decisions.

H3 focused on the influence of tourism involvement on tourism decision making. The findings supported this third hypothesis. Tourism involvement was shown to have a significant influence on travel decision-making. This is consistent with Lee et al.'s (2015) study, in which they concluded that tourism involvement was the key predictor in the tourism decision-making processes. This is also in line with a study by Song et al. (2020) who determined that tourism involvement influenced the perceptions and desires of tourists keen on experience tourism; and another by Yuan et al. (2019), in which they concluded that tourism involvement affected the behavior of tourists. These studies, which took place in Korea, China's Beijing and China's Huangshi, respectively, also concluded that tourism involvement influences tourist behavior.

Thus, this research confirms the significant influence of integrated marketing communications and tourism involvement on tourism decision-making and the influence of integrated marketing communications on tourism involvement in the local experience-based tourism route located in Buriram and Surin provinces. Consequently, the following recommendations can be made:

- Stakeholders, including government agencies, entrepreneurs, enterprises, the private sector, and communities in the local experiential tourism journey, should pay attention to both integrated marketing communication and tourism involvement for tourists who want to experience the local areas.
- Integrated marketing communication should focus on integrating various channels or forms of communication, both offline and online, including the development of information or content that will arouse the interest of tourists, such as content in the area of community or local tourism experiences. \
- Regarding tourism involvement, stakeholders should understand the attitudes and needs of tourists in order to develop forms or activities that promote the participation or involvement of the latter. This will encourage tourists to have a positive attitude towards local experiential tourism, resulting in a desire to participate in such tourism activities and ultimately support their decision-making in local experiential tourism.

This study is theoretically useful as it emphatically makes clear the fact that integrated marketing communication influences both tourism involvement and tourists' decision-making. That said, it has limitations. Since it focuses only on one experiential tourism area (in Buriram and Surin provinces), its results may not be directly applicable to other areas in Thailand involved in this particular type of tourism. Further studies, however, can use the findings in this research as a guide for similar studies in other areas in the country. Another limitation is that it only includes Thai tourists. Given the high contribution of foreign tourists to the Thai tourism industry, it may be well worth exploring whether, in spite of the obvious language barrier, this type of tourism would be amenable to foreigners travelling to Thailand. Thus, for future studies, the authors suggest that this model be studied with other local experiential tourism routes or with international tourists as participants so as to see how this type of tourism is viewed in different parts of the country by different stakeholders. Such studies would be beneficial in terms of policies to government agencies, to the communities involved, and to the private sector for the planning of community activities and the drafting of business plans.

References

Bank of Thailand (2021). *Revitalizing Thailand's tourism sector: In search of enablers for future sustainability*. Retrieved September 15, 2022, from https://www.bot.or.th/Thai/MonetaryPolicy/EconomicConditions/AAA/250624_WhitepaperVISA.pdf

Boontum V., & Bussaparoek, M. (2021). A study of behavior and motivation toward intention to repeat to travel: A case study of Surin. *Journal of Management Science Review, 23*(2), 39-50.

Chenini, A., & Cherif, N. E. (2016). Factors influencing image of tourist destination: Integrated marketing communications approach; conceptualization and retrospective re-debate. *International Journal of Academic Research in Management, 5*(1), 1-16.

Chatphueak, S., & Samphanwattanachai, B. (2019). Factors affecting decision making of Thai tourists to Khao Yai national park, Nakhon Ratchasima and Doi Inthanon nation park, Chiangmai province. *Dusit Thani College Journal, 13*(2), 134-153.

Cochran, W. G. (1977). *Sampling techniques.* (3rd ed.). New York: John Willey and Sons.

Daszkiewicz, M., & Pukas, A. (2016). Integrated marketing communication toward a holistic concept. *Management Sciences, 3*(38), 20-29.

Gelhard, C., & Delft, S. (2015). *The role of strategic and value chain flexibility in achieving sustainability performance: An empirical analysis using conventional and consistent PLS.* 2nd International symposium on partial least square path modeling, Seville, Spain.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis.* (7th ed.). US: Pearson Education.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (2nd ed.).* Thousand Oaks: Sage.

Henseler, J. F., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43,* 115-135.

Janprasit, W., & Kunchan, P. (2021). The measurement development of tourist engagement with social media brands related to service business in tourism industry in Phuket province. *Journal of Communication Arts, 39*(2), 134-161.

Junead, J., Jamnongchob, A., & Manirochana, N. (2018). Experiential tourism development at Wattana Nakhon District, Sa Kaeo province. *Journal of Liberal Arts, Prince of Songkla University, 10*(2), 156-187.

Khairani, A., & Fachira, I. (2022). The influence of cognitive and emotional engagement on digital content marketing in the tourism industry. *Journal of Tourism, Leisure, and Hospitality, 4*(1), 17-32.

Konwar, J., & Chakrabarty, N. (2020). Integrated marketing communication as an element of visitors' selection of heritage destination: A theorical framework. *International journal of Research in Engineering Application and Management, 5*(10), 39-46.

Lee, S., Bruwer, J., & Song, H. (2015). Experiential and involvement effects on Korean wine tourists' decision-making process. *Current Issues in Tourism, 20*(12), 1215-1231.

Manirochana, N., Junead, J., & Jamnongchob, A. (2020). An analysis of tourism strategic plan of Thailand and The Lao People's Democratic Republic. *Journal of International and Thai Tourism, 16*(2), 127-147.

Manirochana, N., Junead, J., & Jamnongchob, A. (2021). Relationships between service quality, service marketing mix, and behavioral intention: Consumers' perspectives on short-term accommodation service for tourism in Thailand. *Turkish Journal of Computer and Mathematics Education, 12*(8), 2991-2999.

Mihaela, O. O. E. (2015). The influence of the integrated marketing communication on the consumer buying behavior. *Procedia Economics and Finance, 23,* 1446-1450.

Nootayasakul, C., & Pasunon, P. (2016). Factors of decision making of Thai tourists' traveling to Lampraya market, Nakhon Pathom. *Dusit Thani College Journal, 10*(1), 132-150.

Peighamberi, K., Sattari, S., Kordestani, A., & Qghazi, P. (2016). *Consumer behavior research: A synthesis of the recent literature*. SAGE Open.

Rakmai, N., Rattanaburi, N., Suwunnkomol, N., & Bualom, O. (2022). Integrated marketing communication to promote health tourism for new way. *International Journal of Early Childhood Special Education, 14*(1), 1354-1362.

Saeed, Z. (2019). A study of theories on consumer behavior. *Journal of Computing and Management Studies, 1(*3), 1-28.

Samad, S., & Alharthi, A. (2022). Untangling factors influencing women entrepreneurs' involvement in tourism and its impact on sustainable tourism development. *Administrative Sciences, 12*(12), 1-19.

Saothong, R., & Putjorn, J. (2021). Leadership and community engagement affecting participation of community-based tourism (CBT) management: A case study of U-thong ancient area, Suphanburi province. *Rajamangala University of Technology Tawan-ok Social Science journal, 10*(2), 5-62.

Simumba, J., & Nchito, W. (2018). Customer engagement in tourism and hospitality services in Kasama and Shiwa Ng'andu, Zambia. *African Journal of Hospitality, Tourism and Leisure, 7*(2), 1-14.

Strategy and Planning Division of the Ministry of Tourism and Sports. (2018). *Action plan for sustainable and creative community-based tourism development (2018 – 2022).* Retrieved September 10, 2022, from https://secretary.mots.go.th/ ewtadmin/ewt/secretary/download/PDF/Action%20Plan%20for%20Tourism%20D evelopment.pdf

Suwannasank, O., & Kheokao, J. (2019). *Cultural tourism and marketing communications in Thailand: Research synthesis and trends.* International conference on social sciences in the 21st century, Amsterdam, Netherlands.

Song, J., Rui, X., & Zhang, Y. (2020). *The influence of tourism interpretation on the involvement, memory, and authenticity of tourism experience: Taking the forbidden city as an example.* Culture, People and Technology – The Driving Forces for Tourism Cities: Proceedings of the 8th ITSA Biennial Conference 2020, Jakarta, Indonesia.

Tourism Authority of Thailand (2002). *Tourism Authority of Thailand's (TAT) Corporate plan 2021-2022 review.* Retrieved September 15, 2022, from https://api.tat.or.th/upload/live/about_tat/7849/Tourism_Authority_of_Thailand%E 2%80%99s_(TAT)_Corporate_Plan_2021-2022_Review.pdf

Wongkunya, W. (2013). *The relationship between integrated marketing communication and tourism motivation which affected tourists' decisions in visiting Roikaensarasin group.* Retrieved March 1, 2022, from http://fulltext.rmu.ac.th/fulltext/2556/106317/

Yin, B., Yu, Y., & Xu, X. (2021). Recent advances in consumer behavior theory: Shocks from the COVID-19 pandemic. *Behavioral Sciences, 11*(12), 1-14.

Yuan, Q., Song, H., Chen, N., & Shang, W. (2019). Roles of tourism involvement and place attachment in determining residents' attitudes toward industrial heritage tourism in a resource-exhausted city in China. *Sustainability, 11*(19), 1-23.

Zukowska, J. (2014). The impact of integrated marketing communication on tourism marketing of selected Polish cities/towns: Case studies. *US-Canada Education Review, 4*(12), 865-883.

Determinants for Market Expansion of Thai SME Entrepreneurs as the ASEAN Economic Community is Taking Roots

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Abstract
Economic policies in Thailand essentially target improvements in innovativeness, technology-orientation, and the internationalization of Thai enterprises, including small and medium size firms. Thai entrepreneurs' internationalization opportunities within the region are linked to the current government policies targeting growth and business expansions and the measures adopted in the ASEAN Economic Community (AEC) Blueprint by the 10-member Association of Southeast Nations (ASEAN) to promote SMEs. This empirical study assesses the status quo of activities, aspirations, and expectations of Thai entrepreneurs as the AEC is taking roots. Findings show that how government policies are implemented and executed are critical to empower Thai SMEs. Innovative market approaches with new products and a more technological orientation for start-ups are found to be key factors influencing Thai entrepreneurs to expand beyond their current markets and utilize the new market opportunities derived from the AEC.

Keywords: Entrepreneurship, SME, Start-ups, ASEAN Economic Community, Market Expansion; Government Policies.

1. Introduction

With its relatively young workforce and consumer base of 347 million out of 655.9 million people as of December 2022, the ten-member Association of Southeast Asian Nations (ASEAN) has been successful in raising the living standards of its populations over the last decades (Statista, 2022). Its combined GDP of US$ 2.4 trillion at the at the end of 2015 increased to US$2.9 trillion in 2020, accounting for 3.5 percent of the world's GDP with Thailand contributing US$501.89 billion or 16.7 percent of the ASEAN share (HSBC, 2021; Schwab & Sala-i-Martin, 2014; Statista, 2021). ASEAN's success in raising living standards in the region can be attributed in no small part to the establishment of an ASEAN Economic Community (AEC) as part of a three-pillar ASEAN Community, whose overall purpose is to build a region of sustained economic growth, lasting peace, security and stability as well as shared prosperity and social progress (International Labor Organization & Asian Development Bank, 2014). The AEC was officially established on December 31, 2015. Initially scheduled to be launched on January 1, 2020. it was subsequently accelerated to January 1, 2015, and then pushed back to December 31, 2015. The AEC has created a single market and production base characterized by a free flow of goods, services, and investment across Southeast Asia, including the freer movement of capital and skilled labor (Association of Southeast Asian Nations, 2022a).

However, while opening the ASEAN market to foreign companies creates opportunities for domestic firms seeking to cross borders, it also brings challenges to companies at home as they need to compete with foreign companies entering their own market. This is especially the case for small and medium-sized enterprises (SMEs), which are the backbone of ASEAN economies. Indeed, both policy makers and academics agree that entrepreneurs play a pivotal role in the development and well-being of their societies (OSMEP, 2020a). SMEs generate jobs and contribute to inclusive economic growth and the prosperity of households and communities (OECD, 2020). Yet, despite their contributions and importance to the region's economy, SMEs continue to face significant barriers that prevent them from achieving their full potential and to expand abroad. This is particularly true for women entrepreneurs who are a vital piece of ASEAN's economy (OECD & ERIA, 2018). SMEs in Thailand are no exception. They encounter the same challenges and enjoy the same opportunities as their counterparts in other ASEAN member countries. The Global Entrepreneurship Monitor (GEM) Thailand Report 2019/20 identified the following main constraining factors for entrepreneurship in Thailand: government policies (57 percent), followed by financial support (47 percent) and capacity for entrepreneurship (30 percent) (Guelich, 2020a). Addressing these barriers is critical to unlock the region's entrepreneurial potential and build more inclusive economies (Guelich, 2020a). In line with comprehensive policy measures for the development of SMEs as outlined in the AEC Blueprint, Thailand 4.0 seeks to do just that (Economic Research Institute for ASEAN and East Asia, 2018; Bussi & Khatiwada, 2017; Jones & Pimdee, 2017). As an economic model based on creativity, innovation, new technologies, and high-quality services, Thailand 4.0 aims to turn the Thai workforce into 'knowledge workers' across ten industries (Thailand Board of Investment, 2017). Thailand 4.0 comes in the wake of Thailand 1.0 (agriculture), Thailand 2.0 (light industry), and Thailand 3.0 (advanced industry).

This paper examines the challenges confronting Thai policymakers in their efforts to promote digitalization as part of the 4th Industrial Revolution in the context of the AEC. The focus is on start-ups and young businesses (firms in operation for less than 42 months) referred to in this study as *total early-stage entrepreneurial activities* (TEA) and *early-stage established businesses* (EB), firms in operation for more than 42 months. As is also the case with established enterprises, each type of firms obviously faces different tasks and challenges in their respective business phases (Picken, 2017). Moreover, their aspirations and expectations toward employee growth, market expansion, and new product market combinations differ, which makes the implementation of current policies critical as they need to address the different needs of TEA and of EB entrepreneurs. The main objective of this study of is twofold: (i) to assess the status quo of TEA and EB entrepreneurs in Thailand as the AEC is taking roots and providing opportunities for regional internationalization and (ii) to determine which policies are needed to promote prosperity, jobs, and inclusive growth in relation to TEAs and EBs. More specifically, it seeks to investigate which determinants foster the market expansion plans of TEAs and EBs to benefit from the new market opportunities stemming from the AEC. Given the current gap in the body of literature on the interplay between micro, small and medium-sized enterprises (MSMEs) and public-private engagement, this study provides valuable insights on these issues that can of practical applications for both entrepreneurs and policy makers.

2. Theoretical Background-
- *SMEs in ASEAN and Thailand*
It is widely recognized that SMEs are key drivers of economic growth and job opportunity creations in both urban and rural areas in ASEAN (OECD, 2020). Micro, small, and medium enterprises (MSME) account for 97.2 to 99.9 percent of all enterprises in ASEAN (Association

of Southeast Asian Nations, 2022c). These MSMEs together contribute 85 percent to employment and 44.8 percent to ASEAN's GDP. These firms also account for 18 percent of its total exports (Association of Southeast Asian Nations, 2022c). As the main force driving ASEAN economies, it is thus critical to enhance and/or maintain their competitiveness and strengthen their resilience within the AEC. In Thailand alone, the total number of enterprises in 2019 was 3,119,738 of which 84.8 percent or 2,645,084 were micro enterprises, 13.3 percent (415,722) small firms, and 1.4 percent (44,290) medium-sized enterprises. This extremely large percentage of MSMEs leaves only 0.5 percent or 54,195 large enterprises (OSMEP, 2022). In 2019, MSMEs in Thailand contributed 5,963.2 billion baht (US$ 169 billion) or 35.3 percent to the national GDP; a growth rate of 3 percent compared to the previous year (OSMEP, 2020b). The Thai's SME landscape shows a prevalence of consumer-oriented businesses, such as retail trade, hotels and restaurants, followed by the agricultural and the manufacturing sector (Guelich, 2014). Moreover, Thailand is the country in ASEAN with the highest prevalence of self-employment without employees, especially among established entrepreneurs as most enterprises have 1 to 5 employees or none at all (UNESCAP, 2017). Bangkok and its vicinity had the largest concentration of MSMEs with 18 percent and 26.7 percent of total MSMEs respectively, followed by Chonburi (3.4%) and Chiang Mai (3.2%) (Charoenrat & Harvie, 2021). All these entrepreneurs are likely not to benefit from current government policies.

- *ASEAN's SME Policies*
The ASEAN Blueprint, the master plan guiding the establishment of a three-pillar ASEAN community, envisions the establishment of a single community economically integrated (Association of Southeast Asian Nations, 2008). As laid out in the AEC Blueprint, the AEC aims to transform ASEAN into (1) a single market and production base, (2) a highly competitive economic region, (3) a region of equitable economic development; and (4) a region fully integrated into the global economy (Association of Southeast Asian Nations, 2022a). Pillar III (a region of equitable development) seeks to unlock the potential of ASEAN SMEs. It identifies comprehensive policy measures to be implemented for the development of SMEs (Association of Southeast Asian Nations, 2022a). The policy measures target business sectors with a focus on innovation. They also focus on the internationalization of businesses and provide policies to promote entrepreneurship and human capital development (Association of Southeast Asian Nations, 2021a).

A valuable tool to map the depth and nature of SME policies across ASEAN and assess and benchmark progress in the design and implementation of SME policies is the ASEAN SME Policy Index. Titled 'Boosting Competitiveness and Inclusive Growth,' the index is the result of a collaboration between the Organization for Economic Cooperation and Development's Southeast Asia Regional Program (OECD), the Economic Research Institute for ASEAN and East Asia (ERIA) and the ASEAN Coordinating Committee on Micro, Small and Medium Enterprises (ACCMSME), in partnership with the governments of the ten ASEAN member states. This instrument is an important call to action for ASEAN policymakers as it supports a culture of learning, innovation, and partnerships that is consistent with the ASEAN way. It also contributes to realizing ASEAN's strategic goals and desired outcomes on SMEs as laid out in the Strategic Action Plan for SME Development 2016-2025 with which it is aligned (OECD & ERIA, 2018). With its vision of globally competitive and innovative SMEs, the plan aims to promote productivity, technology innovation, and better access to finance and markets (Association of Southeast Asian Nations, 2015). The plan also seeks to create a knowledge-based economy by fueling investments toward research and development initiatives, expanding innovativeness, enabling information and communication technologies (ICT), and supporting entrepreneurship in high-tech industries (Asian Development Bank, 2013).

- *Entrepreneurship and Market Development*

In 2009, the Project on Promoting Thai SMEs into the ASEAN Economic Community was funded with US$ 9.6 million and included the following four related projects: (i) ASEAN SME Partnership, (ii) SMEs Flying Geese, (iii) SME capacity building: Winning for ASEAN Market (WAM), and (iv) SMEs Consortium Network Towards ASEAN Market (OECD, 2011). The WAM project provides financial support for organizing trade exhibitions and business matching in foreign countries and is designed to expand SMEs' trade base in ASEAN-6 countries (the 5 original member states plus Brunei) by subsidizing 60% of their travel expenses. In the first 6 months, it resulted in a matching of 2,060 pairs of trade partners for a total value of US$50 million within 6 months (OECD, 2011). In 2020, ASEAN Trade in Goods Agreement (ATIGA), which aims to achieve free flow of goods in the region, resulting in fewer trade barriers and deeper economic linkages among the ASEAN member states, was amended. The utilization rates of ATIGA and other Free Trade Agreements (FTAs) by ASEAN businesses increased in terms of intra-ASEAN trade by 15 percent in 2010, 25 percent in 2014, and 35 percent in 2018, most of it attributed to ATIGA rather than to the other FTAs (Economic Research Institute for ASEAN and East Asia, 2021). Many Thai entrepreneurs (50.4%), however, operate their businesses within Thailand and have never crossed borders to conduct business. Women entrepreneurs, regardless of business phase and region, tend to have a slightly higher propensity to international orientation with 56 percent exporting at least to some extent versus 53 percent of their male counterparts (Guelich, 2019). This may be attributed in part to a higher level of motivation to succeed since many of them realize that climbing up the corporate ladder as a woman is far more difficult than for their male counterparts.

This is a positive change from 2013, where 93 percent of all businesses in Thailand had no export activity. In addition, between 2013 and 2017, the number of entrepreneurs who are highly export-intense, i.e., have more than 75 percent of their customers outside Thailand, increased from 0.5 percent to 4.1 percent (Guelich, 2019). Previous research indicates that among Thai start-ups with 20+ employees, only 33 percent solely serve the local Thai market compared to 91 percent of the micro businesses with up to 5 employees (Guelich, 2014). It It is therefore imperative to investigate which factors contribute to the market expansion plans of Thai entrepreneurs. With the AEC promoting and facilitating international orientation and overseas market expansion plans, an important task for entrepreneurs now is to not only internationalize their businesses but also be prepared for more competition from abroad, i.e., from other ASEAN member states (UNESCAP, 2021)

- *Policies Pre-requisites to Support 4.0 Enterprises*

This regional perspective is underpinned by national level policy frameworks. On a global scale, Thailand ranks 38th out of 140 countries in the Global Competitiveness Index 4.0, which captures the determinants of long-term growth (Schwab, 2018). Innovation is considered an imperative for all advanced economies and increasingly a priority for developing countries (Schwab, 2018). However, most countries struggle to integrate innovation for growth in meaningful policies. The Thai government approved the Eastern Economic Corridor (EEC) Development project as part of a 20-year strategic plan to achieve high-income status by 2036 (EEC, 2021). Referred to as 'Thailand 4.0' strategy, it aims at turning Thailand's Eastern Seaboard into a leading economic zone in ASEAN. Covering a total area of 13,000 square kilometers in the provinces Chachengsao, Chonburi, and Rayong, it is expected to connect with the Dawei deep-sea port in Myanmar, Sihanoukville Port in Cambodia, and Vung Tau Port in Vietnam (Thailand Board of Investment, 2021). The Eastern Seaboard was one of the first industrial clusters for export, starting with textiles, electronics and automobiles, and the first energy and petrochemical complex with refineries, gas separation plant, and plastic and chemical plants. It also boasts the first integrated infrastructure for industrial needs in Laem

Chabang seaport (Ministry of Industry Thailand, 2017). The project focuses on 12 specific industries which, among others, include automation, aviation and logistics, biofuel and bio-chemicals, and digitalization (EEC, 2021). The goal is to transform them into innovative and value-based' 'industries. Most current data on enterprises in the EEC from 2014 show a total of 142,693 enterprises in that area (see Table 1), out of which 98.5 percent (or 140,483 enterprises) are small businesses (OSMEP, 2014).

Table 1: Number of Enterprises in Thailand's Eastern Economic Corridor

	SE*	ME*	LE*	Total
Chachengsao	19,955	217	140	20,312
Chonburi	87,614	787	456	88,857
Rayong	32,914	349	261	33,524
Total	**140,483**	**1,353**	**857**	**142,693**

SE: small; ME*: medium; LE*: large enterprises
Source*: OSMEP (2014)

The Thai government expects the EEC to support the region's economic growth and be an important center for trade, investment, regional transportation, and a strategic gateway to Asia for investors (Thailand Board of Investment, 2017a). In this regard, Thailand 4.0 policies support the market expansion of entrepreneurs. In its fourth year, investment in EEC totaled more than 1.7 trillion Baht (US$48.1 billion). From 2018, prior to the eruption of the Sino-US trade war and Covid-19 outbreak, to the present, Foreign Direct Investment (FDI) rose by 59 percent (EEC, 2022). In 2021, combined public and private investment averaged 260 billion Baht (US$7.4 billion) and accounted for 52 percent of total investment in Thailand. Investment also targets an innovation hub in the Eastern Economic Corridor (EECi) with digital infrastructure (data center and Digital Park), transforming Thailand into a strategic location for internet connectivity in AEC (Thailand Board of Investment, 2017b; Ministry of Industry Thailand, 2017). The economic impact of the Digital Park is projected to annually increase the Thai GDP by 113,000 billion Baht (US$3,229 billion), improve and augment the digital workforce, enhance Big Data and artificial intelligence (AI), and boost Thailand's trade with ASEAN. During this period, the top three targeted industry sectors for direct investments were electronics (140 projects), automotive (101 projects), and petrochemicals and chemicals (60 projects). We can therefore hypothesize, that:

> **H1:** *The business sector positively influences the market expansion plans of TEAs and EBs.*

- Entrepreneurship and Technology

Today, successful entrepreneurs must be equipped with technological knowledge (Almahry, Sarea, & Hamdan, 2018). Increasing the use of technological innovation is an important factor for business growth (Hashi & Krasniqi, 2011). The Thai government has initiated two large programs to support SMEs technological innovation: (i) the Industrial Technology Assistance Program (ITAP) under the National Science and Technology Development Agency (NSTDA), and (ii) Science Parks and technology business incubators. (OECD 2011; Supattaraprateep, 2010). NSTDA and its Technology Management Center (TMC) were created within the Thailand Science Park to channel technological knowledge from universities, research institutes, consultants, local and overseas experts to businesses and boost their innovation and competitiveness (OECD, 2011; NSTDA, 2022; Supattaraprateep, 2010). The ITAP acts as a much-needed research and development manager for Thai SMEs by supporting the knowledge and technology transfer process so that it is possible for SMEs to utilize R&D activities to come up with innovative new products, new processes, and new services.

Relying on several supportive mechanisms, it combines in-depth consulting with the diagnosis of the problems and needs of entrepreneurs. In the fiscal year 2018, the ITAP supported 1,610 SMEs in Thailand with investment totaling 730 million Baht (US$20.7 million) and an estimated 3.039-billion-Baht (US$86.1 million) impact (NSTDA, 2019). While Information Communication Technologies (ICT) are considered highly important productivity drivers, they are also catalysts for other productivity drivers, such as innovation and business dynamism (Schwab, 2018). On the other hand, ICT alone cannot solve all existing problems, for example in education, health, governance, or transport infrastructure. Many government initiatives encouraging entrepreneurship and innovation only target small firms at the pre-nascent, nascent, or start-up stage and tend to focus more on technology channels, which may be a misguided emphasis. For example, if the strategic goal is to encourage entrepreneurs towards more innovative and creative products, it may be more effective to target a mix of technologies and to encourage traditional established businesses to be part of the program (OECD 2011). ASEAN with its priority sectors e-ASEAN and ICT specifically targets e-commerce and sales via internet to enhance technology use to expand the market base and upgrade production. However, internet use, a key component of e-ASEAN, varies considerably across ASEAN countries with Myanmar, Cambodia, Lao PDR, and Indonesia lagging behind (World Bank, 2014). Other member states skipped broadband internet upgrades to directly jump right into mobile internet technology, which has led to the creation of small high-tech start-up hubs in Singapore, Kuala Lumpur, Ho Chi Minh City, Manila, and Bangkok, and the regional build up of greater capacity for innovation (Tonby, Ng, & Mancini, 2014). The midterm review of the AEC Blueprint 2021 points out that, as an essential tool for success, digital transformation requires all key players in the digital landscape to coordinate and fund a joint public-private action plan. This concerns the whole ecosystem, from implementing digital infrastructures and connectivity to upskilling workforces and creating jobs (Association of Southeast Asian Nations, 2021b). We can therefore hypothesize, that:

H2: *The technology sector positively influences the market expansion plans of TEAs and EBs.*

3. Research Design and Methodology

Data used in this study are drawn from the Global Entrepreneurship Monitor (GEM) project, an ongoing large-scale research project, designed to collect data on entrepreneurial activities, aspirations and behavior across countries (Bosma, 2013). Each year, a random representative sample of the adult population (aged 18 to 64) is surveyed in each ASEAN country to identify individuals who, at the time of the survey, owned and managed a business or were in the process of starting one (Bosma, 2013). Data were collected from the Adult Population Survey of the GEM survey 2016 in Thailand (www.gemconsortium.org). The reason why the year 2016 was chosen, even though it is more than five years ago, is because the researchers wanted to assess the status quo of TEA entrepreneurs and EB entrepreneurs in Thailand at the time the AEC was taking root as the opportunity for small companies to cross borders was high since the AEC was just in its infancy. In short, it had just opened new doors to new yet largely unconquered markets. The total sample size of Thai people assembled between May 1 and June 30, 2016, amounted to 3,000 respondents, of whom 1,118 were entrepreneurs aged 18 to 64. Alone or as with partners, they were in the process of starting or were in the early stages of managing an entrepreneurial activity. As explained in the introduction, the start-ups and infant businesses are referred to as total early-stage entrepreneurial activity (TEA). To qualify as TEAs, they had to have just been starting operating their businesses or had been in operation for no more than 42 months (or 3.5 years). A total of 399 respondents were involved in TEA and 719 respondents were established business owners (EB), which means, as noted earlier, that they had been operating their enterprises for more than 42 months.

All these entrepreneurs were asked about their business sectors and whether they were operating in a low/no technology/or high-tech sector. Additional questions targeted their aspirations and expectations regarding market expansion plans, any new product market combinations, and their job growth expectations within the next five years. A descriptive and a regression analysis were conducted to answer the objectives and expected benefits of this study. The descriptive analysis was used to assess the status quo of both Thai startup and established entrepreneurs and their internationalization potential in the wake of the AEC launch. The regression analysis was used to answer the following three questions: (i) Which challenges confront Thai policymakers in the face of the 4th industrial revolution with regard to the existing Thai entrepreneurial landscape; (ii) Which policies are needed in cooperation with other stakeholders to promote prosperity, jobs, and inclusive growth among Thai TEAs and EBs; and (iii) Which factors influence entrepreneurs to expand their current market and take advantage of the new market opportunities stemming from the AEC. The dependent variables were computed for both TEAs and EBs with regardless of their market expansion mode. Aside from gender, the independent variables in the regression were the potential determinants or predictors for market expansion plans, namely, the technology sector, new product market combination, and expected job growth (>=10 persons and >=50 percent) for both TEAs and EBs.

4. Research Results

The business sectors were identified based on the International Standard Industrial Classification of All Economic Activities, set by the United Nations Statistics Division (ISIC Rev. 4) (United Nations, 2008). The findings in Table 2 show that for the year 2016, 56.4 percent of TEAs and 47.9 percent of EBs operate in the retail, trade, hotel and restaurant sectors, followed by agriculture forestry, fishing with 10.4 percent of TEA early-stage businesses and 18.2 percent of established businesses. These percentages confirm OSMEP (2014) and UNESCAP's (2017) findings that businesses in Thailand are less likely to be active in the sectors targeted for investment by the Thai government.

Table 2: TEAs and EBs' Business Sectors

	TEA* in %	EB* in %
Agriculture, forestry, fishing	10.4	18.2
Mining, construction	2.1	2.1
Manufacturing	3.6	5.2
Utilization, transport, storage	2.8	2.1
Wholesale trade	8.9	10.7
Retail, trade, hotels & restaurants	56.4	47.9
Information and communication	1.1	0.0
Financial intermediation, real estate activities	4.4	2.2
professional services	2.8	1.3
administrative services	0.8	1.4
Government, health, education, social services	6.1	9.0
Personal / consumer service activities	0.6	0.0

TEA: total early-stage entrepreneurial activity; EB: established businesses

The targeted business sectors in the newly established and government-supported EEC belong to the minority of businesses in Thailand. Therefore, only mainly large and some medium-sized businesses might benefit from these targeted government policies. However, from a market expansion mode, businesses in the EEC achieve the highest international export values for Thai firms (OSMEP, 2014) and might therefore be those benefiting most from the AEC and its opportunities to serve an increased open market across the region.

Even though exporting is the easiest way to foray abroad and a theoretically open ASEAN market since the end of 2015 (free movement of goods and services), the majority of Thai entrepreneurs, especially established entrepreneurs, do not intend to expand abroad (see Table 3), confirming pre-AEC launch findings indicating that only businesses over 20 employees consider expansion and/or internationalization (Guelich, 2014). After the AEC was launched, at least one fifth of entrepreneurs planned market expansion. However, they contemplate doing so without any use of new technologies, meaning that they basically do not intend radical innovation in products, services, or production. By the same token, 10 percent of TEAs intend to undergo some market expansion using new technology, compared to only 0.6 percent of their established counterparts. None of the EBs and only 1.1 percent of TEAs plans deep market expansion, either domestically or abroad.

Table 3: Market Expansion Mode of Startup and Established Enterprises

	TEA* In %	EB* In %
No market expansion	66.1	78.4
Some market expansion (no new technologies)	22.9	21.0
Some market expansion (new technologies)	10.0	0.6
Profound market expansion	1.1	0.0

TEA: total early-stage entrepreneurial activity; EB: established businesses

Given the many policies targeting innovation, research, and development transfer as well as business growth, these findings suggest that the current business landscape differs from the general picture that most relevant government agencies and ministries might have in mind and to which they address their policies. From a trade perspective, these policies target an increase in the trade surplus of Thailand, which, as trade-dependent country, it has been experiencing for several years in a row (Bank of Thailand, 2017). While firms in the technology sector may benefit greatly from current policies, nearly all Thai entrepreneurs operate their businesses in the low or no technology sectors. Only 1.5 percent of TEAs and 0.4 percent of EBs consider themselves operating in the medium to high-tech sector (see Table 4). Moreover, there is no indication of a new product market combination among these firms, which means that them do not enter new markets with new products and therefore do not avail themselves of the AEC-induced increased market expansion opportunities. TEAs and EBs' lack of innovativeness combined with low intention to enter foreign markets can therefore be seen as major constraints on their internationalization and market expansion plans.

Table 4: Aspirations of Startup and Established Enterprises, in Percent

		TEA* in %	EB* in %
Technology sector	No/low technology sector	98.5	99.6
	Medium or high-tech sector	1.5	0.4
New product market combination	No indication	82.4	91.5
	Indication	17.6	8.5
expected job growth >=10 persons and >=50 percent	No	90.7	99.0
	Yes	9.3	1.0

TEA: total early-stage entrepreneurial activity; EB: established businesses

In terms of high-growth expectations, 9.3 percent of TEAs and only 1 percent of EBs intend to grow their businesses by more than 10 persons, which comes down to an employee growth of more than 50 percent. This data shows how little growth prospects small business owners with up to 20 employees have. A regression analysis was conducted to determine which factors predict the market expansion plans of Thai entrepreneurs. TEA entrepreneurs were separated from EBs. Both were found to be significant regardless of their business phases. Table 5 shows the similarities between them with new product market combination a highly significant relevant factor for market expansion. Different results were found in relation to the technology sector, which appears to be a predictor for TEAs but not for EBs. Therefore, H2 (the technology sector positively influences the market expansion plans of TEAs and EBs) is only partly confirmed for TEA entrepreneurs. None of the other independent variables (gender, industry sector, and expected job growth) were significant. Interestingly enough, the business sector itself does not seem to have an impact on the market expansion decision. Thus, H1 (the business sector positively influences the market expansion plans of TEAs and EBs) is not confirmed. This, however, does not necessarily imply that entrepreneurs keep their businesses local, even though most of the entrepreneurs operate in the retail, trade, hotel and restaurant sector as indicated in Table 2 above and are not benefiting from government EEC policies. In addition, the overall high R Square values show that TEA entrepreneurs account for a higher variance (42.5%) than EBs do (34.2%). This indicates that two factors, new product market combination and technology sector, are highly influential variables.

Table 5: Regression Analysis with DV= Market Expansion Mode of Startup and Established Enterprises

	TEA*		EB*	
R Square	.425		.342	
	B	Sig.	B	Sig.
Constant	.291	.000	.127	.003
Gender	-.043	.204	.029	.242
Industry sector	-.006	.376	-.006	.206
Technology sector	.205	.024	.246	.074
new product market combination	.803	.000	.863	.000
Expected job growth >=10 persons and >=50 percent	.005	.929	.108	.364

TEA: total early-stage entrepreneurial activity; EB: established businesses

5. Discussion and Conclusion

This study supports the finding that the aspirations of start-ups and young entrepreneurs, whom we referred to in this study as TEA entrepreneurs, often tend to be higher than those of EBs, who according to Guelich (2020b), might have a more realistic evaluation of the potential of their businesses in terms of expansion. Nevertheless, the fact that at least almost 10 percent of young businesses aspire to high-growth entrepreneurship is encouraging and denote their willingness to take risk, identified as an important ingredient of business success (Guelich, 2019). They might not be able to fully achieve what they hope for, but at least, it can be assumed that their businesses will indeed benefit from their plans one way or the other. In short, because of the outward-looking perspective of these TEA entrepreneurs, their businesses have a strong potential for growth. The findings in this study are consistent with the policy recommendations made by OSMEP (2014) that the efficiency of tools for technology transfer needs to be updated, especially for inter-company transfer of knowledge from/;' multinational corporations with domestic SME entrepreneurs. Similarly, emphasis should be placed on cross-border knowledge transfer for (i) both SMEs and multi-nationals, (ii) for organizations, such as agencies for standards, technology transfer agencies, training agencies, and (iii) for research and

development laboratories, technology centers and universities. ASEAN policymakers should increase their efforts to institute structural reforms that strengthen local innovation ecosystems and enable the region's entrepreneurs to be a successful part of the 4.0 transformations in job-generating ways. In keeping with the conclusion of the Asia Foundation (2020), this study encourages ecosystems that take innovation and skills' training into account.

In the last few years, the Thai government has introduced various policies and programs to encourage start-up activities to embrace technological and innovative capabilities. These include among others the SME Promotion Master Plan, the Bank of Thailand Financial Sector Master Plan, and the National Economic and Social Development Plan. However, to bring these programs to tuition, government agencies should not only promote but be actively involved in enabling and supporting technology transfer Such a measure/ step? would increase technology use and applications in Thai enterprises and result in a higher number of high-technology start-ups and in Thailand. Since university incubators in Thailand have been found to be one of the major policy mechanisms to support innovation, they may be successful intermediaries in reaching entrepreneurs, pending, of course, effective interactive linkages and an effective utilization of research by TEAs and EBs (Wonglimpiyarat, 2016). A major limitation for market expansion, frequently mentioned by SME entrepreneurs, is the access to information about market characteristics, customers' capabilities, regulations, procedures and other information to would enable them to benefit from the increased opportunities of a larger ASEAN market (Guelich, 2014; OSMEP, 2014; Xavier et al., 2016). In addition, SMEs need training in how to transfer this information into business opportunities.

In the first place, though, more needs to be done regarding how this kind of information has to be delivered to the entrepreneurs. The findings in this study suggest that the way in which government policies are implemented is crucial to empower SMEs as the AEC is taking roots. For example, fostering information transfer and strengthening those business and industrial organizations that benefit SMEs can facilitate cooperation among them and help them join business networks. This could result in horizontal and vertical integration and lead to all kinds of collaboration among entrepreneurs. It might even enable smaller enterprises in Thailand to benefit from government policies such as the EEC by being one link in the process or in the value chain. Being a link in the chain and cooperating with larger business partners would enable them the increase their use of technology, possibly internationalize their activities, and grow through mutual benefits. The fact that new and innovative products for market expansion as well as use of technology are critical factors for the internationalization and market growth of TEAs and EBs cannot be overstated.

It is well established (Thailand Board of Investment (2017a and 2017c) that that these' policies very often target export-oriented industries, mostly comprised of large scale or at least medium-sized businesses, which, as we saw earlier, account only for a small number of all enterprises in Thailand and in the region. Therefore, policymakers should focus on the need to specifically address the majority of micro and small enterprises, the like of the TEAs and EBs in this study, that operate in less innovative business sectors so that to spur their growth by turning them into future-oriented business innovative operations. A survey among Thai experts reveals that a general lack of government support in Thailand hinders entrepreneurial development due to outdated, inconsistent, and short-term oriented government regulations, red tape and government bureaucracy in government agencies (Guelich, 2020a). Demands for continuous and stable government policies with more collaboration among the different government agencies and support in accessing services and information might help to ease the existing constraints experienced by TEAs and EFs.

Future policies need to address topics such as training for entrepreneurship capacity, know-how on how to expand current markets, and benefits to be drawn from the newly opened markets under the AEC. How government policies might have both positive and negative practical implications on entrepreneurs, their actions and their enterprises, small one in particular, is an under-researched field in the region. More information is also needed to specifically address what it takes to change the mindset of the majority of micro entrepreneurs from "keep it as it is" to bolder aspirations such as, for example, growth and innovativeness.

- Limitations and Future Research
Data used in this study were collected in Thailand. Thus, additional information not only on Thai entrepreneurs but also on other Asian entrepreneurs, on innovativeness, might add more insights towards certain policies that are currently in place in Thailand and respective other countries. Since Thailand is part of the ASEAN community, cross-country comparisons with other ASEAN countries might lead to greater insights not only on the Thai entrepreneurial landscape, but on that of neighboring countries as well. To investigate the status quo of Thai entrepreneurs and their market expansion plans at the time the AEC was taking roots, this study used data from 2016. Future studies using more recent data might show a different picture of Thai entrepreneurs and would make it to compare the differences in this time span. In addition, half of the respondents were involved in some activities in the retail business sectors of retail with only 4.4 percent operated in the manufacturing sector. Naturally, large differences among industries tend to lead to different aspirations and attitudes. Future research should therefore target a specific sector or several sectors less studied in order to get a more nuanced picture on the challenges and opportunities facing TEAs and EBs.

References

Asian Development Bank (2013). *Innovative Asia: Advancing the knowledge-based economy - the next policy agenda.* Mandalunyong City, Philippines*: Asian Development Bank.*

Almahry, F. F., Sarea, A. M., & Hamdan, A. M. (2018). A review paper on entrepreneurship education and entrepreneurs' skills. *Journal of Entrepreneurship Education*, *21*(1), 1-7.

Asia Foundation (2020). *The future of work across ASEAN: Policy prerequisites for the fourth industrial revolution.* Retrieved July 15, 2021, from https://asiafoundation.org/wp-content/uploads/2020/02/The-Future-of-Work-Across-ASEAN_full.pdf.

Association of Southeast Asian Nations (2008). *ASEAN cconomic community blueprint.* Retrieved December 20, 2021, from https://www.asean.org/wp-content/uploads/images/archive/5187-10.pdf

Association of Southeast Asian Nations (2015). *ASEAN strategic action plan for SME development 2016-2025.* Retrieved February 20, 2021, from https://asean.org/?static_post=asean-strategic-action-plan-for-sme-development-2016-2025-2.

Association of Southeast Asian Nations (2021a). *SME developments in ASEAN.* Retrieved June 2, 2021, from https://asean.org/asean-economic-community/sectoral-bodies-under-the-purview-of-aem/micro-small-and-medium-enterprises/overview/.

Association of Southeast Asian Nations (2021b). *ASEAN Economic Integration Brief No.9 June 2021.* Retrieved July 20, 2021, from https://asean.org/storage/AEIB_No.09_June-2021.pdf.

Association of Southeast Asian Nations (2022a). *ASEAN economic community: How viable is investing.* Retrieved September 18, 2022, from https://investasean.asean.org/index.php/page/view/asean-economic-community/view/670/newsid/758/single-market-and-production-base.html.

Association of Southeast Asian Nations (2022b). *ASEAN Business Sentiment Survey 2020/2021.* Retrieved September 21, 2022, from https://asean.org/wp-content/uploads/2022/03/ISBN-301221-ASEAN-Business-Sentiment-Survey-2020-2021-Final-Report-FINAL.pdf.

Association of Southeast Asian Nations (2022c). *Economic community: Resilient and inclusive ASEAN.* Retrieved May 21, 2022, from https://asean.org/our-communities/economic-community/resilient-and-inclusive-asean/development-of-micro-small-and-medium-enterprises-in-asean-msme/.

Bank of Thailand. (2017). *EC_XT_047 Balance of Payments (Summary).* Retrieved June 19, 2019, from http://www2.bot.or.th/statistics/BOTWEBSTAT.aspx?report ID=644&language=EN.

Bosma, Niels (2013). The Global Entrepreneurship Monitor (GEM) and its impact on entrepreneurship research. *Foundations and Trends in Entrepreneurship, 9*(2).

Bussi, M., & Khatiwada, S. (2017, April 11). Thailand 4.0 and the future of work. *Bangkok Post.* Retrieved April 19, 2020, from http://tinyurl.com/y86afunj.

Charoenrat, T., & Harvie, C. (2021). *Analysis of the impact of COVID-19 on micro, small and medium-sized enterprises (MSMEs) in Thailand from competition policy and market access perspectives.* Bangkok: UNCTAD.

Economic Research Institute for ASEAN and East Asia (2018). *SME policy index ASEAN 2018: Boosting competitiveness and inclusive Growth.* Jakarta: Economic Research Institute for ASEAN and East Asia (ERIA).

Economic Research Institute for ASEAN and East Asia (2021). *Impact of the ASEAN trade in goods agreement (AGITA) on intra-ASEAN trade.* Jakarta: Economic Research Institute for ASEAN and East Asia (ERIA).

EEC (2021). *Why EEC government initiative.* Retrieved June 15, 2021, from https://www.eeco.or.th/en/government-initiative.

EEC (2022). *The eastern economic corridor policy committee's meeting (1/2022).* Retrieved September 28, 2022, from https://www.eeco.or.th/en/news/415.

Guelich, U. (2014). *GEM Thailand report 2013.* Retrieved April 19, 2020, from https://gemconsortium.org/report/49063.

Guelich, U. (2019). *GEM Thailand report 2018/19.* Retrieved June 15, 2021, from https://gemconsortium.org/report/50532.

Guelich, U. (2020a). *GEM Thailand report 2019/20.* Retrieved June 15, 2021, from https://gemconsortium.org/report/50538.

Guelich, U. (2020b). Wishful thinking versus reality: High-growth aspirations of start-ups and established entrepreneurs in ASEAN. *Asian Academy of Management Journal*, 25(1).

Hashi, I., & Krasniqi, B. A. (2011). Entrepreneurship and SME growth: Evidence from advanced and laggard transition economies. *International Journal of Entrepreneurial Behavior & Research, 17*(5), 456-487.

HSBC (2021). *ASEAN country snapshots.* Retrieved June 13, 2021, from https://www.business.hsbc.com/asean/the-economist-group/asean-country-snapshots.

International Labor Organization & Asian Development Bank (2014.(*ASEAN community 2015: Managing integration for better jobs and shared prosperity.* International Labor Organization and Asian Development Bank.

Jones, C., & Pimdee, P. (2017). Innovative ideas: Thailand 4.0 and the fourth industrial revolution. *Asian International Journal of Social Sciences, 17*(1), 4-35.

Ministry of Industry (2017). *Eastern economic corridor development project.* Retrieved April 19, 2020, from http://www.boi.go.th/upload/EEC%20pack%20for%20BOI%20fair_Rev4%203%201.pdf.

NSTDA (2019). *Annual report 2018: National Science and Technology Development Agency.* Retrieved June 10, 2021, from https://www.nstda.or.th/en/news-media/printed-media.html.

NSTDA (2022). *ITAP.* Retrieved August 21, 2022, from https://itap.nstda.or.th/en/about-us/

OECD (2011). *Thailand: Key issues and policies: OECD studies on SMEs and entrepreneurship.* Paris: OECD Publishing.

OECD (2020). *OECD economic surveys: Thailand.* Retrieved July 18, 2022, from www.oecd.org/economy/thailand-economic-snapshot/.

OECD & ERIA (2018). *SME policy index: ASEAN 2018: Boosting competitiveness and inclusive growth.* Paris: OECD Publishing/ Jakarta: Economic Research Institute for ASEAN and East Asia.

OSMEP (2014). *Thailand's SME white paper in 2013.* Bangkok: Office of Small and Medium Enterprises Promotion.

OSMEP (2020a). *Annual report 2019: Stronger together MSME.* Bangkok: Office of Small and Medium Enterprises Promotion.

OSMEP (2020b). *White paper on MSME 2020: New normal brings opportunities.* Retrieved April 21, 2022, from sme.go.th/upload/mod/download-20201005123037.pdf.

OSMEP (2022). *MSME profile.* Retrieved November 21, 2022, from https://www.sme.go.th/en/page.php?modulekey=365

Picken, J. C. (2017). From startup to scalable enterprise: Laying the foundation. *Business Horizons*, *60*(5), 587-595.

Schwab, K., & Sala-i-Martin, X. (2014). *The global competitiveness report 2014-2015.* Geneva: World Economic Forum.

Schwab, K. (2018). *The global competitiveness report 2018.* Geneva: World Economic Forum.

Statista (2021). *Gross domestic product (GDP) of the ASEAN countries from 2011 to 2021.* Retrieved July 20, 2021, from https://www.statista.com/statistics/796245/gdp-of-the-asean-countries/.

Statista (2022). *Labor force in the ASEAN region in 2015, with forecasts until 2030.* Retrieved December 15, 2022, from statista.com/statistics/1044765/asean-labor-force/.

Supattaraprateep, S. (2010). *Thailand Self-Assessment Report & Best Practice.* Bangkok: NSTDA National Science and Technology Development Agency.

Thailand Board of Investment (2017a). *Opportunity Thailand: Innovation-driven economy.* Retrieved November 10, 2019, from http://www.boi.go.th/upload/content/BOI-brochure_2017-opportunity_thailand-EN-20170210_30843.pdf.

Thailand Board of Investment (2017b). *Digital Park Thailand: A flagship project of the eastern economic corridor.* Retrieved June 20, 2020, from http://www.boi.go.th/upload/04_Digital_Park_Thailand&EEC_13589.pdf.

Thailand Board of Investment (2017c). *Thailand investment review: Thailand 4.0 means opportunity Thailand.* Retrieved June 20, 2020, from http://tinyurl.com/m4gxq47.

Thailand Board of Investment (2021). *Thailand investment review: Digital Park Thailand.* Retrieved August 17, 2021, from https://www.boi.go.th/upload/content/TIRMarch.pdf

Tonby, O., Ng, J. & Mancini, M. (2014). *Understanding ASEAN: The manufacturing opportunity.* Retrieved November 19, 2019, from https://www.mckinsey.com/~/media/mckinsey/our%20people/matteo%20mancini/understanding_asean_the_manufacturing_opportunity.pdf.

UNESCAP (2017). *Fostering women's entrepreneurship in ASEAN. Transforming prospects. Transforming societies.* Bangkok, Thailand: UNESCAP.

UNESCAP (2021). *The role of competition policy in strengthening the business environment for MSMEs in the ASEAN region.* Retrieved September 18, 2022, from https://www.unescap.org/sites/default/d8files/event-

documents/Competition%20Policy%20and%20Strengthening%20MSMEs%20in%20 ASEAN.pdf.

United Nations, 2008. *International standard industrial classification of all economic activities, Revision 4.* Retrieved December 15, 2021, from https://unstats.un.org/unsd/publication/seriesm/seriesm_4rev4e.pdf

Wonglimpiyarat, J. (2016). The innovation incubator, university business incubator and technology transfer strategy: The case of Thailand. *Technology in Society*, *46,* 18-27.

World Bank (2014). *Doing business 2015: Going beyond efficiency.* Washington, DC: The World Bank.

World Bank (2020). *Ease of doing business report.* Washington, DC: The World Bank.

Xavier, S. R., Sidin, S. M., Guelich, U., & Nawangpalupi, C. (2016). *ASEAN entrepreneurship: The Context, impact and opportunities for women entrepreneurs and startups; Key pivots for growth and sustainability.* Kuala Lumpur: Universiti Tun Abdul Razak.

Factors Affecting Certified Public Accountants' Professional Audit Data Analytics Competency

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Abstract

The purpose of this research is to analyze the effect of audit learning diversity, comprehensive audit adroitness, audit technological attention, and stakeholder pressure intensity on each dimension of the professional audit data analytics competency of certified public accountants (CPAs in Thailand), who are facing an increasing velocity of data, particularly in the contest of real-time information. The data was collected from questionnaires distributed to 346 CPAs and descriptive statistics and inferential statistics were used to test the hypotheses. The results revealed that both audit learning diversity and comprehensive audit adroitness have a positive influence on all the components of professional audit data analytics competency. Moreover, audit technological attention has a significant positive influence on technology innovation adoption and stakeholder pressure intensity a significant positive influence on audit tactic intellectual, proactive control awareness, and personnel expertise orientation. This study can contribute to increasing auditors' awareness and enhancing audit data analytics competency in accordance with a fast-changing environment.

Keywords: Professional Audit Data Analytics Competency, Certified Public Accountant, Audit Process

1. Introduction

It is well-established that an audit becomes of benefit if it provides trusted information, is unbiased, and reflects a real picture of the audited firm (Dewu & Barghathi, 2019). One important challenge for audit professionals is how to add value to the client and information users when providing the audit service (Li, Dai, Gershberg, & Vasarhelyi, 2018). The world of audit is changing. Today's complex technology brings significant opportunities to the audit function. A firm's capacity to innovate is a fundamental aspect of its successful development (Richardson & Watson, 2021). Audit professional firms are no exception. Audit success is increasingly more dependent on the technologies and techniques that an audit firm can employ to analyze complex data and report insights for various applications intended to augment organizational performance ((Addaraini, 2020). Due to the high-volume, high-velocity, and high-variety of information assets, which demand cost-effective and innovative forms of information processing and decision-making, operational audits are becoming increasingly more difficult and complex (Gartner, 2016)**.** Modern information technology (Big Data) requires a new skillset from audit professionals as the ability to use and apply existing technology together with new technology can help an auditor carry out inspection task efficiently and effectively reduce the time he or she spends on each audit (Dorgalas et al., 2015). To adjust audit operation in accordance with an ever-changing environment, maintain the audit quality, and achieve the audit goals, auditors thus need to develop their competency (Salijeni, Samsonova-Tadderu, & Turley, 2019). In short, they need to balance the emergence of new technologies with the need to increasingly rely on accounting information system implementation for audit management (Koutoupis & Pappa, 2018).

Today, auditors have no choice but to enhance their knowledge and skills in Big Data techniques and analytics as an essential component of their professional dealings. As Gepp et al. (2018) observed, auditors perceive the need to keep pace with technological trends "not because they necessarily value the analytical power of Big Data, but because their clients do" (p.110). One core competency now critical to professional auditors and the success of the audit process is the ability to apply data analytics to audit engagements. For one, data analytics provide an additional valuable audit data technique to the set of tools traditionally used in the audit process (Kwon, Lee, & Shin, 2014). In a nutshell, data analytics techniques and methods allow audit teams to both analyze client data and identify areas that need further investigation early in the audit process. Auditing professionals can use data analytics to gain more insight into clients' business and offer them insights. Data may be of limited value unless further efforts are made to analyze them for rational decision making, thus highlighting the need for analytics (Omitogun & Al-Adeem, 2019). Data analytics address the communication of complex data to arrive at cogent decisions.

Audit data analytics (ADA) facilitates organizational transparency and efficiency through the storage, procession, and transmission of information (Zawawi, 2018). Audit teams can tailor audit approaches to deliver substantial results by adapting their audit plans. ADA thus affects professional judgement, audit performance, and perceived audit quality. This is precisely why, as an innovative information technology competency, ADA competency is seen as a strategic resource that can ensure ultimate performance superiority and as one of the cornerstones of an auditor's effectiveness. There is evidence that the early stages of adoption and implementation of data analytics can be inefficient. However, as auditors get more familiarized with this tool, it saves them time (Omitogun & Al-Adeem, 2019). This study explores the use of audit data analytics (ADA) in the current audit practice of Thai Certified Public Accountants (CPA). With the world witnessing dramatic advancements in technology and real-time methods of business transactions, the auditing profession is in a critical phase. Today, to succeed as a professional accountant, a vastly different set of skills is required than was necessary just a decade ago. And in the next decade, things are likely to change even faster and more dramatically as the global economy continues to evolve at an ever-quickening pace.

To survive, accountants must focus on areas where they can complement technology and carve out a competitive advantage where the expertise of accountants is uniquely needed (Abu Afifa, Alsufy, & Abdallah, 2020). The accounting profession faces a choice: either master technology or be mastered by technology (Abu et al., 2020). This requires new core competencies emphasizing the use of data analytics. Yet, prior studies on audit engagement suggest that the use of ADA is relatively limited and the use of more "advanced" ADA even more limited (Kwon et al., 2014; Gepp et al., 2018; Chalu & Mzee, 2018). More specifically, this study seeks to investigate how audit learning diversity, comprehensive audit adroitness, audit technological attention, and stakeholder pressure intensity affect certified public accountants' professional audit data analytics competency. This study contributes to a better understanding of the sources of audit data analytics competency among Thai CPAs and provide an opportunity for them to further integrate modern information technology into their auditing practices, thereby increasing the level of public confidence in the profession and preparing them for the future.

2. Literature Review and Research Hypotheses Development
- *Professional Audit Data Analytics (ADA) Competency*
Audit analytics, or audit data analytics (ADA) refers to the intelligence generated from reviewing audit-related information, often through the use of technology (Yeo & Carter, 2017). Like other types of data analytics, ADA typically involve analyzing large sets of numbers to

find actionable audit insights. ADA can also involve text. The main driver of using data analytics is to improve audit quality (Al-khaddash, Nawas, & Ramadan, 2013). Data remain more meaningful when analytics and technology are used for complex data needs. Thus, ADA competency is the capability of an auditor to provide audit insights using data management, infrastructure, and competency (Al-Tabbaa, Leach, & Khan, 2019). However, organizations must also convert these valuable insights into actions. Generally speaking, ADA competencies of CPAs fall into three broad areas: technical auditing (accounting) expertise, skills relating to critical thinking and business understanding, and interpersonal and communication skills (Schildt, 2017). At its core, data analytics competency illuminates the importance of leveraging management, technology, and talent capabilities (Yeo & Carter, 2017). However, while managers are positive about investing in data analytics competency, when it comes to decision making, they may feel that their intuition is more accurate that the analysis performed on datasets (Hodgkinson & Kealey, 2011). This can be the case even though ADA competency has been found to enhance organizational performance by improving productivity both tangible (i.e., less paper reporting) and intangible (organization reputation) benefits (Wixom, Yen, & Relich, 2013). It has also been proven to be essential to track possible tax infringements and tax offenders (Dorgalas et al., 2015). Thus, many tax authorities are using an audit analytics approach to quickly and effectively reduce the potential for fraud and enhance tax performance (Chalu & Mzee, 2018).

- *The four Dimensions of Professional ADA Competency*

The dependent variable in this study, ADA competency, consists of four dimensions: audit tactic intellectual, technology innovation adoption, proactive control awareness, and personnel expertise orientation.

(i) Audit Tactic Intellectual:

Audit tactic intellectual refers to the ability of audit data analytics competency to plan, coordinate, control, and manage information resources in accordance with the organization needs in order to achieve it operational goals. The usage of audit tactic intellectual increase operational efficiency by reducing cost. It also helps to quickly identify potential fraud and plays an important role in the sweeping advance of analytics in organization practices (Kalsum, 2021). Agility in audit tactic intellectual for data analytics provides superior value and overcomes disruption risks (Yeo & Carter, 2017).

(ii) Technology Innovation Adoption:

Technology innovation adoption can be defined as the capacity of an information technology infrastructure to quickly develop and support an organization's resources (Gepp et al., 2018). Andiola, Masters, and Norman (2020) determined that technology innovation can be identified as a key predictor of data analytics competency and emphasized the need for versatility of the analytics platform so that it connects data from various functions across the organization, ensures information flow, and enhances the performance of the data analytics platform in terms of connectivity, compatibility and modularity. As a result, technology innovation adoption influences risk management, fraud detection, and audit performance.

(iii) Proactive Control Awareness:

Proactive control awareness involves a careful internal control in order to comply with applicable laws and regulations. It enables auditors to obtain an in-depth understanding of the audit practice and adjust an organizations' operation and long-term survival (Dewu & Barghathi, (2019). An auditor's attempts to increase audit quality leads to positive audit outcomes.

(iv) Personnel Expertise Orientation:
Personnel expertise orientation refers to the ability of analytics professionals to perform assigned tasks in the audit environment through technical skills, relational knowledge, and technological management knowledge. It leads to new challenges in terms of supporting organizational goals (Gupta & George, 2016). Al Frijat (2013) found that the existence of qualified human resources personnel and the application of advanced computer and control systems contribute to enhancing the effectiveness of the information system.

- Audit Learning Diversity
Audit learning diversity refers to an auditor's attitude towards lifelong learning. Much knowledge is acquired through education and training in accounting and auditing programs, communication, interaction with the external environment such as, for example, clients, and conversations with other auditors (Welay, Rosidi, & Nurkholis, 2019). Auditors who have greater audit learning diversity are better able to find out errors from accounting transactions, are more aware of the effect of rules on audit processes, and more capable of discovering fraud (Neely, Gregory, & Platts, 2005). Thus, auditors with different kinds of audit learning are likely to provide greater audit proficiency, commit to auditing standards, and respond to users' expectations very well. In addition, different types of audit learning and experience enable auditors to choose the best way to respond when facing ethical dilemmas. It also helps them raise suspicion as it makes it easier for them to understand faults accurately and find the cause of errors (Syamsuddin et al., 2014). Therefore, the following hypotheses can be articulated:

> **H1**: *The higher the audit-learning diversity, the more likely auditors will gain greater (a) audit tactic intellectual, (b) technology innovation adoption, (c) proactive control awareness, and (d) personnel expertise orientation.*

- Comprehensive Audit Adroitness
Comprehensive audit adroitness can be defined as an auditor's action resulting from the accumulation of a variety of technological knowledge, various direct and indirect experiences, and expertise in the audit task, that transmits into audit differences likely to strengthen specialization (Ghasemaghaei, Ebrahimi, & Hassanein, 2018). Through the process of incorporating new information and integrating knowledge among different audit functions within the audit process, efficiency in terms of audit sustainability increases (Frisk, & Bannister, (2017). Moreover, if auditors learn new topics, rules, and methods; they can apply the newly learned techniques to current situations. Auditors who intend to pursue a career in this field will be willing to work hard to achieve the audit objectives and benefit stakeholders by adhering to the code of conduct and avoiding malfunctions (Mela, Zarefar, & Andreas 2016). The following hypotheses can therefore be proposed:

> **H2:** *The higher the comprehensive audit adroitness, the more likely auditors will gain greater (a) audit tactic intellectual, (b) technology innovation adoption, (c) proactive control awareness, and (d) personnel expertise orientation.*

- Audit Technological Attention
Audit technological attention refers to an auditor's talent to implement the advanced computer-assisted programs/tools/techniques that can automate an aspect of the audit. Such auditors have sufficient knowledge and skills of technology, are aware of the importance of technology and able to utilize technology (Richardson & Watson (2021) to codify the increased role of technology in audit technological skills, reduce audit hours for the task, and greatly increase the reliability of conclusions (Kwon, Lee, & Shin, 2014). Also, the increase in technological attention makes auditors improve their own individual behaviors in order to gain greater quality of audit results. Audit technological attention stimulates the auditor to prepare, develop knowledge, and select suitable technology to benefit auditors. (Jiang, Messier, & Wood, 2020).

Therefore, the following hypotheses can be proposed:

H3: *The higher the audit technological attention, the more likely auditors will gain greater (a) audit tactic intellectual, (b) technology innovation adoption, (c) proactive control awareness, and (d) personnel expertise orientation.*

- Stakeholder Pressure Intensity

Stakeholder pressure intensity is to the degree expectations of the people affected by society, government, and private agencies with an impetus to demand certain actions from audit authorities in terms of the necessity of responding to changes in stakeholder demand and adopting audit analytics technology to better perform audits (Choi, Wallace, & Wang, 2018). Therefore, stakeholder pressure intensity affects audit authorities' judgments by motivating auditor officers to look for evidence that support a stakeholders' preferred outcome. The expectations and pressures from stakeholders will motivate the auditors to perform audit tasks with a high level of knowledge and skills. In addition, pressure from stakeholder forces auditors to pay more attention to ethical principles when performing audit duties (Taddei & Siddiqui, 2016). Thus, the following hypotheses can be proposed:

H4: *The higher the stakeholder pressure intensity, the more likely auditors will gain greater (a) audit tactic intellectual, (b) technology innovation adoption, (c) proactive control awareness, and (d) personnel expertise orientation.*

- Control Variables

Control variables were added to avoid any bias due to demographics, the characteristic of control variables that may influence hypothesized relationships. In this research, organizational size and working experience are the two variables recoded into dummy variables.

- Organizational Size: Organizational size refers to the number of employees. Previous research indicates that organizational size is an important factor that affects the application of the information system (Abdel-Kader & Luther, 2008). Larger organization may have more resources than smaller ones (Gupta & George, 2016).

- Working Experience: Working experience is measured by the number of years in audit jobs and practice that affects the relationships among audit data analytics competency. Prior research suggests that auditors with more working experience in collective knowledge have skills and capability that lead to increased audit competency (Kaplan, O' Donell, & Arel, 2008). Based on the above, the following conceptual model was developed. The independent variables are audit learning diversity, comprehensive audit adroitness, audit technological attention, and stakeholder pressure intensity.
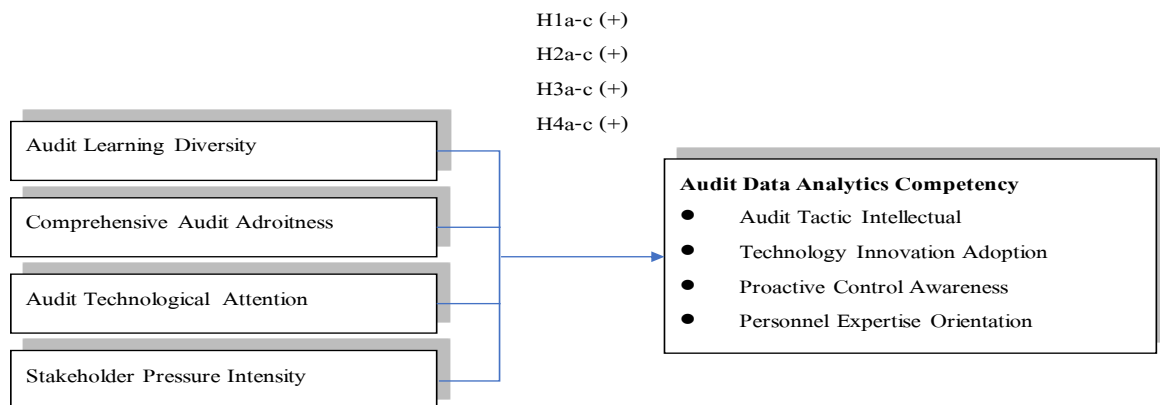

Figure 1: Conceptual Model of the Factors Affecting CPAs' Professional Audit Data Analytics Competency (created by the author for this study)

3. Research Methodology

- *Sample Selection and Data Collection Procedure*

The population consists of certified public accountants in Thailand, selected from the current and reliable online database of the Federation of Accounting Profession under the Royal Patronage of His Majesty the King. This database includes 13,872 active auditors. This information was downloaded on January 15, 2022, from the Federation's database. To calculate the appropriate sample size an equation under the 95% confidentiality rule was used, based on the Krejcie Morgan method (Krejcie & Morgan, 1970). As determined by Aaker, Kumar, and Day (2001), a 20% response rate for a mail survey without an appropriate follow-up procedure, is deemed sufficient. 1,875 (375*5) mailed questionnaires were therefore deemed an appropriate distribution for a mail survey. Since 129 surveys were undeliverable and 26 not completed, the valid mailing amounted to 1,720 surveys. Out of all the surveys sent, 346 responses were received as completed surveys, bringing the effective responses rate to approximately 20.12 percent and therefore in line with Aaker, Kumar, and Day's (2001) recommendation. The non-response bias was tested for generalization based on Armstrong and Overton' (1977) recommendations. The objective was to detect whether there were significant differences in terms of demographic information on the CPAs (gender, age, married status, education level, and audit experience) between early and late responses. The results indicate no significant difference. Therefore, there was no non-response bias.

- *Questionnaire Development and Variable Measurements*

The questionnaire is based on each construct's definition and related literature and was verified by three academic experts and adjusted wherever necessary to ensure that it was effective. Moreover, a pretest was conducted. The validity and reliability of the questionnaire in terms of measurements of the constructs were tested as well. The questionnaire consisted of four parts. Part one focused on personal information about the CPAs. Part two pertained to the rating of the factors stimulating CPAs' behavior and part three CPAs audit data analytics competency. An open-ended question was included in part four. A five-point Likert scale, ranging from 1 = strongly disagree, to 5 = strongly agree, was used to measure the variables (Newell & Goldsmith, 2001).

- *Reliability and Validity*

Since the constructs and multiple scale items in this study were developed from new scales derived from the relevant body of literature, a pre-test method was deemed appropriate to assert the validity and reliability of the questionnaire. The pre-test was conducted with 30 CPAs. As can be seen in Table 1, the factor loadings of each item were between 0.563 and 0.862, which are higher than the 0.40 cut-off point, indicating the construct validity of the questionnaire (Nunnally & Bernstein, 1994). In addition, the Cronbach's alphas were between 0.775 and 0.871, which are higher than the 0.70 cut-off point (Hair et al., 2010). This ensured the validity and reliability of the questionnaire.

Table 1: Results of Factor Loading and Alpha Coefficient of Constructs

Variables	Factor Loadings	Cronbach's Alpha
Audit Tactic Intellectual (ATI)	.836 - .862	.842
Technology Innovation Adoption (TIA)	.773 - .851	.871
Proactive Control Awareness (PCA)	.791 - .826	.845
Personnel Expertise Orientation (PEO)	.725 - .806	.802
Audit Learning Diversity (ALD)	.749 - .787	.836
Comprehensive Audit Adroitness (CAA)	.760 - .779	.775
Audit Technological Attention (ATA)	.563 - .689	.798
Stakeholder Pressure Intensity (SPI)	.624 - .664	.782

- Statistical Techniques

The ordinary least squares method (OLS) regression analysis was used for testing the hypotheses and checking normality, heteroscedasticity, autocorrelation, multicollinearity, and linearity. The OLS regression analysis not only explains the relationship between two variables, it also provides a sense of the rationale behind the interaction, which relates to the effect of the independent variables on the dependent variables as a liner function of variables (Jaccard & Turrisi, 2003). An OLS regression analysis was therefore appropriate to test all the hypotheses in this research. The following equations represent the equation models of these relationships:

$$\text{Equation 1: } ATI = \alpha_1 + \beta_1 ALD + \beta_2 CAA + \beta_3 ATA + \beta_4 SPI + \varepsilon$$
$$\text{Equation 2: } TIA = \alpha_2 + \beta_5 ALD + \beta_6 CAA + \beta_7 ATA + \beta_8 SPI + \varepsilon$$
$$\text{Equation 3: } PCA = \alpha_3 + \beta_9 ALD + \beta_{10} CAA + \beta_{11} ATA + \beta_{12} SPI + \varepsilon$$
$$\text{Equation 4: } PEO = \alpha_4 + \beta_{13} ALD + \beta_{14} CAA + \beta_{15} ATA + \beta_{16} SPI + \varepsilon$$

4. Results and Discussion

The demographics characteristics of the 346 participants are presented in Table 2. As can be seen, a major proportion of them are females (81.21%). 48.26 percent of the respondents are 36-40 years old. 54.04 percent of them are single and 79.76 percent have a bachelor's degree. 45.66 percent have 5-10 years' audit experience and 47.98 percent of the participants have an auditor tenure of 5-10 years.

Table 2: Demographics of Key Participants

Description	Categories	Frequencies	Percentage
1. Gender	Male	65	18.79
	Female	281	81.21
	Total	346	100.00
2. Age	Less than 30 years old	25	7.23
	30-35 years old	120	34.68
	36-40 years old	167	48.26
	More than 40 years old	34	9.83
	Total	346	100.00
3. Marital Status	Single	187	54.04
	Married	113	32.66
	Divorced	46	13.30
	Total	346	100.00
4. Educational Level	Bachelor's Degree	276	79.76
	Higher than bachelor's degree	70	20.24
	Total	346	100.00
5. Audit Experience	Less than 5 years	61	17.63
	5-10 years	158	45.66
	11-15 years	72	20.82
	More than 15 years	55	15.89
	Total	346	100.00
6. Length of CPA tenure	Less than 5 years	73	21.10
	5-10 years	166	47.98
	11-15 years	81	23.41
	More than 15 years	26	7.51
	Total	346	100.00

- Results of Correlation Analysis

The results indicate that there was no multicollinearity problem. The maximum value of VIFs ranged from 1.359 to 2.952, which is well below the cut-off point of 10 (Hair et al., 2010). In addition, the correlations between each of the variables was less than 0.80 (Hair et al., 2010). In this study, the bivariate correlation procedure was scaled to a two-tailed test of statistical significance at $p<0.01$ and $p<0.05$. The results are shown in Table 3, which also reports the Pearson correlation coefficient of the variables. The findings indicate that the ALD, CAA), ATA), and SPI) were positively correlated with each of the components of professional audit data analytics competency; namely, ATI, TIA, PCA, and PEO. Therefore, the overall antecedents are significance for each dimension of professional audit data analytics competency.

Table 3: Descriptive Statistics and Correlation Matrix

Variables	ATI	TIA	PCA	PEO	ALD	CAA	ATA	SPI	OS	WE
Mean	4.42	4.30	4.10	4.26	4.29	4.11	4.17	3.68	3.89	3.65
S.D.	.498	.540	.679	.586	.607	.528	.562	.543	.438	.552
ATI	1									
TIA	.451**	1								
PCA	.562**	.343**	1							
PEO	.461**	.580**	.608**	1						
ALD	.603**	.669**	.546**	.646**	1					
CAA	.629**	.438**	.615**	.516**	.523**	1				
ATA	.548**	.543**	.525**	.508**	.403**	.423**	1			
SPI	.426**	.617**	.493**	.534**	.634**	.530**	.572**	1		
OS	.435**	.409**	.315**	.357**	.426**	.303**	.358**	.418**	1	
WE	.338**	.328**	.365**	.272**	.314**	.294**	.463**	.259**	.364**	1

*** Correlation is significant at the 0.01 level (2-tailed),
** Correlation is significant at the 0.05 level (2-tailed)

In order to test the hypotheses, a regression analysis was used to test the effects of audit learning diversity, comprehensive audit adroitness, audit technological attention, and stakeholder pressure intensity on each dimension of professional audit data analytics competency. The results are presented in Table 4. Audit learning diversity has a significant positive effect on audit tactic intellectual ($\beta_1= 0.289$, $p< 0.05$), technology innovation adoption ($\beta_5= 0.341$, $p< 0.05$), proactive control awareness ($\beta_9= 0.251$, $p< 0.05$), and personnel expertise orientation ($\beta_{13}= 0.307$, $p< 0.05$). Therefore, hypotheses 1a, 1b, 1c, and 1d are supported. Audit learning diversity means that CPAs have increased their knowledge through prior work reviews, analyzed past events, interpreted new audit issues, and adapted to audit tasks (Welay et al., 2019). The outcomes of audit learning diversity increase auditors' tacit, and explicit knowledge as they can perceive when and how to adapt their knowledge in different and challenging situations (Chalu & Mzee, 2018).

Secondly, comprehensive audit adroitness has a significant positive effect on audit tactic intellectual (β_2= 0.283, p< 0.05), technology innovation adoption (β_6= 0.214, p< 0.05), proactive control awareness (β_{10} 0.212, p< 0.05), and personnel expertise orientation (β_{14}= 0.314, p< 0.05), which means that Hypotheses 2a, 2b, 2c, and 2d are supported. CPAs' professional competency varies with the level of experience of auditors (Frisk & Bannister, 2017). Recall that comprehensive audit adroitness refers to the process of incorporating new information and integrating knowledge among the different audit functions within the audit process that can increase the efficiency of audit sustainability.

Thirdly, audit technological attention has a significant positive influence on technology innovation adoption (β_7 0.346, p< 0.05). Thus, Hypothesis 3b is supported. The results are consistent with Wonglimpiyarat's (2017) study, which indicates that CPAs perceive a change of technology as having positive implications for them and see it as a potential source of gain if they use it in their tasks. Therefore, technology development encourages auditors to enhance their ability to use new technologies and develop audit specialization skills for particular tasks.

Yet, these results also show that audit technological attention does not impact audit tactic intellectual (β_3=0.038, p> 0.05), proactive control awareness (β_{11}=0.021, p> 0.05), and personnel expertise orientation (β_{15}=0.035, p> 0.05). Thus, Hypotheses 3a, 3c and 3d are not supported. Possibly, when CPAs verify a company's statements that have not many transactions and no complexity, there is little incentive for them to use advanced technology. Moreover, the constant advances in the relevant technology may act as disincentive for CPAs to develop their proficiency.

Table 4: Results of OLS Regression Analysis

Independent Variable	Dependent Variable			
	Equation 1: Audit Tactic Intellectual (ATI),	Equation 2: Technology Innovation Adoption (TIA),	Equation 3: Proactive Control Awareness (PCA),	Equation 4: Personnel Expertise Orientation (PEO)
Audit Learning Diversity (ALD) H1a-1d	**.289**** **(.068)**	**.341**** **(0.69)**	**.251**** **(.063)**	**.307**** **(.072)**
Comprehensive Audit Adroitness (CAA) H2a-2d	**0.283**** **(0.055)**	**0.214**** **(0.054)**	**0.212**** **(0.056)**	**0.314**** **(0.050)**
Audit Technological Attention (ATA) H3a-3d	0.038 (0.071)	**0.346**** **(0.047)**	0.021 (0.035)	0.035 (0.034)
Stakeholder Pressure Intensity (SPI) H4a-4d	**0.269**** **(0.084)**	0.064 (0.062)	**0.252**** **(0.063)**	**0.312**** **(0.064)**
Control Variables: Organizational size	0.018 (0.105)	0.009 (0.095)	-0.018 (0.096)	0.050 (0.080)
Working Experience	**0.182**** **(0.089)**	0.081 (0.094)	**0.176**** **(0.088)**	0.063 (0.083)
Adjusted R^2	0.540	0.591	0.374	0.431
Maximum VIF	2.952	2.209	1.359	1.682

[a] Beta coefficient with standard errors in parenthesis. **p< .05, *p < 0.10

Lastly, Stakeholder pressure intensity has a significant positive influence on audit tactic intellectual (β_4 0.269, p< 0.05), proactive control awareness (β_{12} 0.252, p< 0.05), and personnel expertise orientation (β_{16} 0.312, p< 0.05), but doesn't affect technology innovation adoption (β_8=0.064, p> 0.05). Accordingly, hypotheses 4a, 4c and 4d are supported but 4b is not. CPAs who are concerned about stakeholders will try to create value for these stakeholders by satisfying users' expectations. However, this pressure from stakeholders does not compel auditors to use audit technology so long as paper-based work still helps to complete the audit work as scheduled and is perceived to create values for the stakeholders. In the case of stakeholders on which the organization is dependent for its continued survival, the focus should be place on the needs and goals of the organization (Kalsum, 2021).

Regarding the control variables, the results indicate that organizational size has no statistically significant effects on the dependent variables. According to Gupta and George (2016), the new wave of data-driven departments has been completely reshaping the ways of developing big data and data analytics competency and therefore organizational size. However, the second control variable, working experience, has a significant influence on audit tactic intellectual and on proactive control awareness. Kalsum (2021) found that working experience is an important successful indicator of an audit and influences an auditor's effectiveness as it relates to achieving an audit objective, bringing in new customers and retaining existing ones, and trusting those who are involved in the audit task.

The auditing profession has a large and growing volume of reliable information available as big data increases their variety and veracity. CPAs also face an increasing velocity of data, particularly in the contest of real-time information. They will find them especially useful to update traditional substantive, analytical, and controls tests by applying problem-driven data analytic techniques on big data (Titera, 2013). Audit data analytics competency can influence goal achievement, such as risk management efficiency and good practice. It is also widely acknowledged to play a vital role in increasing performance (Li et al., 2018). Schildt (2017), found that data analytics competency can improve organizational performance by improving productivity both in terms tangible benefits (e.g. paperless reporting) and intangible ones (e.g. organizational reputation). Thus, an organization that is capable of creating superior data analytics competency is more likely to be able to maximize performance by facilitating the pervasive of insights gained from its data analytics (Dorgalas et al., 2015).

The results of hypothesis testing reveal that most of the hypotheses are fully supported. This can be interpreted as indicating that executives have become aware of the fact that gaining a sustainable advantage from data analytics is not just about investing big amounts of money or having access to sophisticated technology but is also about possessing data-analytic-related technical managerial skills, the right organizational culture, and intensity of technological management knowledge. Data analytics will enhance measurement processes through new forms of evidence that supports management's audit for transactions. They add value to the audit process (Chalu & Mzee, 2018).

5. Conclusion

This study investigated the effect of antecedents, including audit learning diversity, comprehensive audit adroitness, audit technological attention and stakeholder pressure intensity on each dimension of professional audit data analytics competency. The results indicate that audit learning diversity and comprehensive audit adroitness have a positive significant effect on all dimensions of professional audit data analytics competency. In addition, it was found that stakeholder pressure intensity has a positive significant impact on all the components of professional audit data analytics competency, expect for technology innovation adoption. Besides, audit technological attention has a significant positive influence

on technology innovation adoption. Of particular interest to the executives of audit firms is the positive relationship between audit data analytics competency and audit performance as it pertains to risk management efficiency and good practice. Audit data analytics competency might contribute to the organization's ability to find the right balance between exploiting existing resources and exploring new opportunities, to eventually achieve enhanced organizational performance.

- Theoretical and Managerial Contributions
In terms of theoretical contribution, the results indicate that CPAs in Thailand intend to develop audit data analytics competency to meet appropriate information needs and effectively enhance risk management and operational good practice. In addition, the results also suggest that developing audit analytics competency can enhance the performance of the audited organization. This suggests that audit analytics competency can be developed through the synergy of three practices: (i) developing management capability, (ii) acquiring technology competence, and (iii) enhancing personnel expertise. These practices are incorporated into audit data analytics competency and contribute to providing information that explains economic changes, promotes an efficient use of resources, and facilitates the creation or enhancement of organization values.

As to managerial contributions, the results show that although data analytics technologies call for substantial investment in terms of implementation and maintenance, CPAs are aware of audit data analytics' potential value and benefits, both in relation to risk management efficiency and operational value. Considering this, executives would benefit from investing time and resources in creating such a capability, which involves management capability, technology competence, and personnel expertise.

- Limitations and Suggestion for Future Research
Since the results indicate that some hypotheses are not statistically significant, auditors should find other ways to emphasize skill training and support sources of new information to increase skills and knowledge, in order to meet audit stability. Moreover, it is suggested that in-depth interviews be conducted in future research as they may provide for greater in-depth validity and reliability of the instruments and enlarge the search for new moderator relationships. Finally, to expand the research contributions and verify the research generalizability, future research is needed to collect data from other auditing professions such as tax auditors, governmental auditor, and co-cooperative auditors or Thai-Listed firms in Thailand.

References
Aaker, D. A., Kumar, V., & Day, T. X. (2001). *Marketing research*. New York: John Wiley and Sons.
Abdel-Kader, M., & Luther, R. (2008). The impact of firm characteristics on management accounting practices: A UK-based empirical analysis. *British Accounting Review, 40*(1), 2-27.
Abu Afifa, M., Alsufy, F., & Abdallah, A. (2020). Direct and mediated associations among audit quality, earnings quality, and share price: The case of Jordan. *International Journal of Economic Business Administration, 8*(3), 500-516.
Addaraini, F. (2020). Analysis of the effect of independence, professionalism, and competence on the quality of internal audit results with auditor ethics as moderating variable. *Journal of Public Budgeting, Accounting and Finance*, *3*(1), 62-73.
Al-Frijat, Y. S. (2013). The impact of accounting information systems used in the income tax department on the effectiveness of tax audit and collection in Jordan. *Journal of Emerging Trends in Economics and Management Sciences*, *5*(1), 19-25.

Al-khaddash, H., Nawas, R. A., & Ramadan, A. (2013). Factors affecting the quality of auditing: The case of Jordanian commercial banks. *International Journal of Business and Social Science, 4*(11), 206-222.

Al-Tabbaa, O., Leach, D., & Khan, Z. (2019). Examining alliance management capabilities in cross-sector collaborative partnerships. *Journal of Business Research*, *101*, 268-284.

Andiola, L., Masters, E., & Norman, C. (2020). Integrating technology and data analytic skills into the accounting curriculum: Accounting department leaders' experiences and insights. *Journal of Accounting Education*, 50(C).

Armstrong, J. S., & Overton, T. S. (1977). Estimating non-response bias in mail surveys. *Journal of Marketing Research*, *14*(3), 396-402.

Chalu, H., & Mzee, H. (2018). Determinants of tax audit effectiveness in Tanzania. *Managerial Auditing Journal, 33*(1), 35-63.

Choi, T. M., Wallace, S. W., & Wang, Y. (2018). Big data analytics in operations management. *Production and Operations Management*, *27*(10), 1868-1883.

Dewu, K., & Barghathi, Y. (2019). The accounting curriculum and the emergence of big data. *Journal of Accounting and Management Information Systems*, *18*(3), 417-442.

Dorgalas, G., Ioannis, S., Dimitra, K., & Ioannis, D. (2015). Tax auditors' effectiveness in Greek firms: Tax auditors' perceptions. *Journal of Accounting, and Taxation, 7*(7), 123-130.

Fosso Wamba, S., Gunasekaran, A., Akter, S., Ren, S. J., Dubey, R., & Childe, S. J. (2017). Big data analytics and firm performance: Effects of dynamic capabilities. *Journal of Business Research*, *70*(C), 356-365.

Frisk, J. E., & Bannister, F. (2017). Improving the use of analytics and big data by changing the decision-making culture: A design approach. *Management Decision*, 55(10), 2074-2088.

Gepp, A., Linnenluecke, M. K., O'Neill, T. J., & Smith, T. (2018). Big data techniques in auditing research and practice: Current trends and future opportunities. *Journal of Accounting Literature, 40*, 102-115.

Ghasemaghaei, M., Ebrahimi, S., & Hassanein, K. (2018). Data analytics competency for improving firm decision-making performance. *Journal of Strategic Information Systems*, *27*(1), 101-113.

Gupta, M., & George, J. F. (2016). Toward the development of a big data analytics capability. *International and Management*, *53*(8), 1049-1064.

Hair, J. F., Jr., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspective (7th edition)*. Upper Saddle River, NJ: Prentice Hall.

Jaccard, J., & Turrisi, R. (2003). *Interaction effects in multiple regression (2nd edition)*. Thousand Oakes, CA: Sage.

Jiang, L., Messier, W. F., & Wood, D. A. (2020). The association between internal audit operations-related services and firm operating performance. *Auditing: A Journal of Practice & Theory*, *39*(1), 101-124.

Hodgkinson, G., & Healey, M. P. (2011). Psychological foundations of dynamic capabilities: Reflexion and reflection in strategic management. *Strategic Management Journal*, *32*(13), 1500-1516.

Kalsum, U. (2021). The effect of auditor's competency, accountability and ethics on audit quality of Public Accountant Firms (KAP) at Makassar. *Jurnal Riset Akuntansi Terpadu*, *14*(1), 113-123.

Kaplan, E. S., O'Donnell, E. F., & Arel, B. M. (2008). The influence of auditor experience on the persuasiveness of information provided by management. *Auditing: A Journal of Practice and Theory*, *27*(1), 67-83.

Koutoopis A. G., & Pappa, E. (2018). Corporate governance and internal controls: A case study from Greece. *Journal of Governance and Regulation*, 7(2), 91-99.

Krejcie, R. V., & Morgan D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610.

Kwon, O., Lee, N., & Shin, B. (2014). Data quality management, data usage experience and acquisition intention of big data analytics. *International Journal of Information Management*, 34(3), 387-394.

Li, H., Dai, J., Gershberg, T., & Vasarhelyi, M. A. (2018). Understanding usage and value of audit analytics for internal auditors: An organizational approach. *International Journal of Accounting Information Systems*, 28, 59-76.

Logan, V., Logan, D., Tapadinhas, J., Herschel, G., Oestreich, T., Popkin, J., White, A., Buytendijk, F., & Edjlali, R. /Gartner Research (2017). *Data and analytics leadership vision for 2017*. Retrieved November 9, 2021, from: https://www.gartner.com/binaries/content/assets/events/keywords/business-intelligence/bie18i/gartner_data-analytics_re

Mela, F. N., Zarefar, A., & Andreas (2016). The relationship of professional commitment of auditing student and anticipatory socialization toward whistleblowing intention. *Procedia-Social and behavioral Sciences*, 219, 507-512.

Neely, A., Gregory, M., & Platts, K. (2005). Performance measurement system design: A literature review and research agenda. *International Journal of Operations and Production Management, 25*(12), 1228-1263.

Newell, S. J., & Goldsmith, R. E., (2001). The development of a scale to measure perceived corporate credibility. *Journal of Business Research*, 52(3), 235-247.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory (3rd edition)*. New York: McGraw-Hill.

Omitogun, A., & Al-Adeem, K. (2019). Auditors' perceptions of and competencies in big data and data analytics: An empirical investigation. *International Journal of Computer Auditing, 1*(1), 92-113.

Richardson, V., & Watson, M. W. (2021). Act or be acted upon: Revolutionizing accounting curriculums with data analytics. *Accounting Horizons*, 35(2), 129-144.

Salijeni, G., Samsonova-Tadderu, A., & Turley, S. (2019). Big Data and changes in audit technology: Contemplating a research agenda. *Accounting and Business Research, 49*(1), 95-119.

Schildt, H. (2017). Big data and organizational design: The brave new world of algorithmic management and computer augmented transparency. *Innovation: Management, Policy, and Practice*, 19(1), 23-30.

Syamsuddin, I., Sudarma, M., Habbe, A. H., & Mediaty, U. (2014). The influences of ethics, independence, and competence on the quality of an audit through the influence of professional skepticism in BPK of South Sulawesi, Central Sulawesi, and West Sulawesi. *Journal of Research in Business and Management, 2*(7), 8-14.

Taddei, S. A., & Siddiqui, J. (2016). Regulation and the promotion of audit ethics: Analysis of the content of the EU's policy. *Journal of Business Ethics*, 139, 183-195.

Titera, W. R. (2013). Updating audit standard-enable audit data analysis. *Journal of Information Systems, 27*(1), 325-331.

Welay, A. P., Rosidi, R., & Nurkholis, N. (2019). Analysis of factors affecting internal audit quality: Study at the inspectorate of Maluku Province, Ambon City and West Seram District. *International Journal of Multicultural and Multireligious Understanding*, 6(6), 116-126.

Wixom, B. H., Yen, B., & Relich, M. (2013). Maximizing value from business analytics. *MIS Quarterly Executive, 12*(2), 111-123.

Wonglimpiyarat, J. (2017). Technology auditing and risk management of technology incubators/service parks. *World Journal of Entrepreneurship Management and Sustainable Development*, *13*(1), 44-56.

Yeo, A. C., & Carter, S. (2017). Segregate the wheat from the chaff enable: Will big data and data analytics enhance the perceived competencies of accountants/auditors in Malaysia? *Journal of Self-Governance and Management Economics, 5*(3), 28-51.

Zawawi, N. H. M. (2018). Actor-network theory and inter-organizational management control. *International Journal of Business and Society*, *19*(2), 219-234.

Effect of Social Commerce on Social Media Users

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Abstract

This study puts forward a comprehensive model and investigates the impact of recommendations and referrals, information support, information sharing, forums and communities, and evidential social commerce influence on consumer propensity to engage in social commerce, using likes, shares, post reviews, and making purchases. Drawing on the social exchange theory and social penetration theory, it seeks to determine how social-oriented drivers (i.e., recommendations and referrals and information support) and individual-initiated drivers (i.e., information sharing and forums and communities) could better explain consumers' social commerce intentions. Structural equation modeling was performed based on a sample of 263 social media users in Thailand. The results reveal that information support mediates the relationship between recommendations and referrals and evidential social commerce influence behavioral intention. The diffusion velocity of the marketing effect is manifested through customers' social commerce intentions and behaviors, which helps managers identify the importance of maintaining a supportive atmosphere to nurture intimate member-to-member and member-to-provider relationships.

Keywords: Evidential Social Commerce Influence, Recommendations and Referrals, Information Sharing, Information Support, Forums and Communities

1. Introduction

As an interactive community for interpersonal communication, the internet enables people to overcome the constraints of time and space and interact on the same platforms, such as, for example, social networking sites (Islam, Rahman, & Hollebeek, 2018; Tajvidi, Richard, Wang, & Hajli, 2020; Yahav, Schwartz, & Welcman, 2020). Social networking sites have caused e-commerce to evolve into social commerce (also referred to as s-commerce) (Ventre, Mollá-Descals, & Frasquet, 2021). Unlike e-commerce, s-commerce emphasizes interacting with customers on social media and building close relationships with them (in contrast, e-commerce information generally flows one-way and focuses on the transaction itself and on maximizing business efficiency). Users can create online reviews after using the product and interact with other users via likes, comments, tags, or content sharing (Feeney & Pierce, 2018). They can browse product page information and see ratings and comments posted by other users simultaneously. Information about one product posted by different users can be spread among them (Maia et al., 2018; Sheikh et al., 2019). The primary goal of social commerce is thus to promote social interaction and information sharing. It has given rise to a new type of e-commerce model called 'social shopping' – a rise which the Covid-19 epidemic has accelerated. In a nutshell, social shopping is a combination of social media and e-commerce as social media tools are used to develop consumers' online social networks and interpersonal relationships, promote the sharing of shopping knowledge and information, and encourage cooperative shopping among consumers with a view to increasing the number of consumers. Achieving social shopping is an auxiliary goal (Choi & Kim, 2020). Consumers with higher information motivation are more willing to use social media and interact with people.

The emphasis is on analyzing reviews, evaluations, word-of-mouth, recommendations and referrals, information acquisition, (Bazi et al., 2019; Sheikh et al., 2019). Websites facilitate online collaboration and social messaging support (Dang, 2021) and enable consumers to share shopping experiences and product information with their peers (Fernando, Abideen, & Shaharudin, 2020). In many ways, product reviews by users largely enrich mass media advertising information and have become an important source of information for users to make purchasing decisions (Maia, Lunardi, Longaray, & Munhoz, 2018), which raises the question of whether product reviews created by online users on social networking sites objectively reflect product performance. Social media users usually join a forum and a community (Chen, Zhu, & Mantrala, 2020; Choi & Kim, 2020; Maia et al., 2018). They provide channels to enhance users' desire to participate in social e-commerce (Song & Liao, 2018).

A number of recent studies have been vigorously discussing ratings and reviews, forums and communities, and recommendations (Sheikh et al., 2019; Bazi et al.; 2019; Busalim & Ghabban, 2021; Meilatinova, 2021). In the same vein, focusing on recommendations and referrals, information support, information sharing, and forum and communication, this study seeks to determine the extent of the influence of evidence-based social commerce on social users. It proposes a model that incorporates these constructs to test their impact. Evidence-based social commerce in this study refers to the online activities of online shopping consumers such as 'sharing', 'like',” 'comment', and 'purchase' (Alalwan et al., 2019; Attar, Shanmugam, & Hajli, 2020). As to information support, it relates to the fact that consumers are psychologically willing to share personal information and exchange related news with their peers through social media (Bazi et al., 2019). This study complements research on the problems of social exchange processes as instead of using binary exchange relations (Agarwal & Narayana, 2020; Moilanen & Ikäheimo, 2019), it uses information sharing, forums and communities as facilitators of social exchange It also contributes to the social penetration theory (Bastos, 2019; Islam et al., 2018; Wang, Lee, Wu, & Liu, 2017) by introducing further evidence of online influence as a way to pursue to build better relationships with network members.

2. Theoretical Background and Framework
- Research Framework

The research framework proposed in this study is premised on several prior research directions. One is the use of social media and the process of cultivating users to share their shopping experience after shopping, which is achieved through liking posts, sharing, and commenting in the form of purchase opinions and product experience and through virtual (i.e., online) community conversations and threads (i.e., evidential social commerce influence. The other is provided by the literature on social psychology, in particular the social exchange theory (Ferm & Thaichon, 2021; Ma, Seydel, Zhang, & Ding, 2021) and the social penetration theory (Moilanen & Ikäheimo, 2019), which are used to construct an information-supported theoretical model to account for a form of social exchange that can be facilitated by forwarding posts, comments, sharing, and likes during relationship building and interaction. The model determines which social forces of a process (information support and recommendations, and referrals) can serve as conduits for cultivating such online perspectives. Likewise, the social penetration theory posits that over time, as the interaction between users improves, the level of intimacy between them increases (Agarwal & Narayana, 2020; Dang, 2021). Although the degree of shared participation and interaction varies, user participation improves the community awareness of all its members, stimulates their motivation to continue to participate, and promotes information sharing (Song & Liao, 2018; Ferm & Thaichon, 2021).

Often, opinions or ideas are accepted or rejected altogether (Islam et al., 2018; Lei, Wu, & Ye, 2022). Accordingly, based on the social exchange and the penetration theories, the author argues that the social structure of communities, as well as information support and social commerce influence, are reinforced by a greater degree of self-discourse interaction between members (i.e., actors within the community). Information-sharing and forums and communities regulate the relationship between recommendation and referrals, information support, and evidential social commerce influence. In this study, information-sharing and forums and communities are moderate boundary conditions.

- Recommendations and Referrals

Recommendations and referrals refer to the widespread dissemination and sharing between current and potential customers of experiences via social media (Ventre et al., 2021). They can increase user confidence and promote purchasing and are the main drivers for attracting users to online communities (Attar et al., 2020; Badrinarayanan & Sierra, 2018). They are premised on the systematization and diversification of social interactions, (Koay, Ong, Khoo, & Yeoh, 2020; Li, 2019). They can play the role of a recipient of information and emotions or a supporter of others in the online community. (Alalwan et al., 2019) Recommendations and recommendations are a form of information filtering through information provided by social users to help solve problems and make decisions, including search, guidance, and advice (Zhao, Zhang, & Ma, 2020). Emotional support, on the other hand, is a process of emotional exchange and feedback between social users using information or knowledge and operates as a carrier to establish an intimate relationship (Guo et al., 2018). Emotional satisfaction can also foster a climate of trust within the community and contribute to developing long-term relationships among users (Feeney & Pierce, 2018). Researchers determined that recommendations and referrals provide four types of support: affective, informational, tangible, and companionship (Safia, Chai, Frimpong, & Akram, 2019; Sheikh et al., 2019). Tangible support refers to the actual relationships and supports an individual can receive (Attar et al., 2020) while companionship support represents the primary source of identifiable value and emotional support (Badrinarayanan & Sierra, 2018).

Information support refers to the degree of support an individual perceives in the encoding and decoding process of information (Zhao et al., 2020). There is a link between recommendations and referrals and information support as more people are exposed to social media and use it to publish, share, and disseminate information or obtain resources (Feeney & Pierce, 2018; Guo et al., 2018). In a synchronous service, participants communicate through a real-time video conferencing system, where instant and timely interactions are important (Fang & Li, 2020). The emphasis on information support provides direct opinions, explanations, solutions and purchase plans for users' purchase problems, thereby enhancing users' trust in information resources (Zhao et al., 2020). Social support is mainly reflected in substantive support, emotional and emotional support, cognitive information support and language guidance support (Guo et al., 2018). It helps to enhance the intimacy between users (Feeney & Pierce, 2018). There is a close relationship between information support and reciprocity, reflecting people's tendency to benefit from each other. As asserted by the social penetration theory, this exchange of social benefits can lead to good relations among community members and enhance intimacy among actors (Islam et al., 2018; Lei et al., 2022; Yahav et al., 2020). Based on the above, the following hypothesis can be developed:

H1. *Recommendations and referrals have a positive influence on information support.*

- Evidential Social Commerce Influence

Social commerce is the process of applying social elements, such as attention, discussion, sharing, communication, and interaction, to the transaction process (Tajvidi et al., 2020). It is a social transaction model based on interpersonal networks and social media communication channels with trust as the core. It increases user-generated content, allows users to better participate in and interact with social networks, acts as a shopping guide, and produces interaction and sharing between users and enterprises (Safia et al., 2019; Sheikh et al., 2019; Ventre et al., 2021). Through online reviews, users can easily and frequently make informed purchasing decisions. Online reviews are often the most important source of information. Their quality determines the extent of their influence on online consumers (Banjarnahor, 2021). High-quality online reviews are clear, specific, and provide useful decision-making information (Singh & Chakrabarti, 2020;). Past research indicates that the higher the quality of online reviews, the more valuable the information provided to consumers, the greater the impact on consumers, and the stronger the guidance for consumers' purchasing decisions (Hsu, 2018; Podsakoff, MacKenzie, & Podsakoff, 2012). To further examine the embeddedness of social commerce, this study builds on the social exchange/infiltration theory and on the link between recommendation and referrals and online evidential influence (Agarwal & Narayana, 2020; Moilanen & Ikäheimo, 2019). The theory suggests that an individual's beneficial outcomes are based on his/her assessment of the costs and benefits of the exchange (Ferm & Thaichon, 2021). In the communication process, participants may gain recognition and understanding from user feedback, which may then influence each other's behavior (Ma et al., 2021). Therefore, the information provided by the community can promote the user's sense of trust and relationship commitment. A community users become more intimate, they are better engaged when exchanging information and posting comments, likes, and shares (Dang, 2021). Based on the above, the following hypothesis can be proposed:

H2: *Recommendations and referrals have a positive effect on evidential social commerce influence.*

Moderating Role of Information Sharing

Highly analytical individuals will be very eager to actively and carefully search for information (Song & Liao, 2018). Besides, the more users of community information, the more support or intrinsic benefit they perceive (Tajvidi et al., 2020). According to the social penetration theory, the commitment to the community often changes how an actor behaves and how his/her relationships with others will evolve (Fernando et al., 2020; Pu, Wang, & Chan, 2020). Frequent access to online communities can improve the degree of information-sharing among users in the community (Bazi et al., 2019) and the relationship between members and promote interpersonal intimacy (Wang et al., 2017). However, this intimacy depends on whether the user is motivated to develop a relationship that exchanges information. With the deepening of users' emotional investment in the community, the degree of intimacy between users will be higher to obtain greater benefits from social networks and more information support (Feeney & Pierce, 2018; Zhao et al., 2020). The change in the nature of the relationship from shallow to deep requires users to make continuous efforts. Users' community information can be supported by lateral social connections in relationships established with other members (Lin & Kishore, 2021). Furthermore, valuable mechanisms are produced through interactions with other community members or information support (Dang, 2021). Based on the above, the following hypothesis can be developed:

H3. *The more online shopping information sharing consumers experience on social media, the more positive the influence of recommendations and referrals on evidential social commerce influence consumption.*

- Moderating Role of Forums and Communities

Forums and communities refer to a type of public opinion formed by freely posting comments and opinions and collecting certain wishes and demands. Forum allow communities to gain product knowledge from other consumers before making a purchase decision (Tseng et al., 2022). Even in the event a person is assigned to a new community, information posted by that community will still influence her/him even though there is no connection between members (Maia et al., 2018). According to Choi and Kim (2020), users' participation in forums and communities to obtain information support is believed to promote online evidential influence among them. Whenever a user's comments corroborate the group's ideas, a phenomenon of 'grabbing the popular' will develop in the comment area (Busalim & Ghabban, 2021; Meilatinova, 2021; Tseng et al., 2022). Moreover, self-esteem prompts users to influence actions online by creating groups (Chen et al., 2020; Fernandes et al., 2021). According to the social penetration theory, self-disclosure is a fundamental form of social exchange that becomes broader and deeper as relationships develop (Yahav et al., 2020). Shared understanding among group members is generated through a shared language and vision (Hsu, 2018). The form of self-disclosure will change with the state of the relationship frequently (Hsu, Chih, & Liou, 2015; Arenas-Gaitán, Rondan-Cataluña, & Ramírez-Correa, 2018; Banjarnahor, 2021). Accordingly, the following hypothesis can be developed:

H4. *The more consumers are exposed to online shopping forums and community social media, the more positive the influence of information support on evidential social commerce influence consumption.*
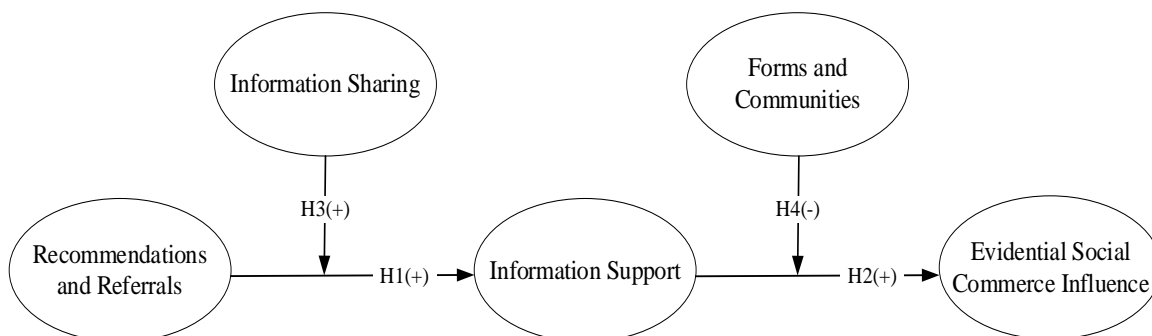

Figure 1: Conceptual Framework: A Social, Personal Perspective on Consumer Social Commerce Influence (created by the author for this study)

3. Methodology

- Data Collection and Sample

The sample in this study consists of Thai consumers who shop online. The respondents must have experience shopping using online platforms and use a smartphone. There are two main reasons for choosing Bangkok as the research background. First, as the capital of Thailand, Bangkok is a densely populated city characterized by a vibrant economy, which for many young people is an aspirational destination (Taecharungroj, Muthuta, & Boonchaiyapruek, 2019). Second, Bangkok is home to a wide variety of people who form a consumer mix. This study used convenience sampling to distribute questionnaires through various social media (e.g., Facebook, Instagram, Line) popularly used by Thais online. Based on the requirements of the sample group, some questionnaires were rejected. This was the case, for example, for those filled out by people with no online shopping experience. In the end, 263 samples were

kept. Of those respondents, 46.5 percent were females, 17.5 percent were 19 years old and below, 62.4 percent had received an undergraduate degree, and 36.5 percent earned a monthly income between 30,000 and 39,999THB ($850-1.150)

- Measurements

The five-item scale used to measure users' perceived informational support, including emotional and informational support from online communities, was adapted from Sheikh et al. (2019). In addition, a five-item scale was used to measure recommendations, including relational and cognitive recommendations, and recommendation dimensions. The three-item scale pertaining to forums and communities was adapted from Ventre et al. (2021) and measured the extent to which respondents identified themselves as in-group members of a community. In addition, a six-item scale adapted from Bazi et al. (2019) was used to measure users' information sharing in an online community. The section on evidential social commerce influence includes a four-item scale with share, like, comment and purchase influence adapted from Fernandes et al. (2021). All the scores were five-point Likert scale, ranging from 1 (Strongly disagree) to 5 (Strongly agree).

4. Findings

To ensure the appropriateness of each scale, a correlation analysis was conducted as well as a confirmatory factor analysis (CFA). Structural equation modeling (SEM) was assessed by convergent and discriminant validity. The results shown in Table 1 indicate that all the scales of interest had acceptable convergent validity with factor loadings ranging from 0.803 to 0.872, and AVE values ranging from 0.450 to 0.695, a larger range. All the square roots of the AVE values were greater than their corresponding inter-construct correlations, indicating that the validity was within the acceptable range.

**Table 1:** Means, Standard Deviation, and Correlation Coefficient(N=263)

	Mean	SD	Items	1	2	3	4	5	Cronbach's Alpha	CR	AVE
Evidential Social Commerce Influence	4.207	.708	4	.729					.796	.817	.531
Information Sharing	3.700	.867	3	.357**	.769				.805	.812	.592
Forums and Communities	4.025	.811	4	.562**	.446**	.711			.799	.803	.505
Recommendations and Referrals	4.300	.486	5	.170**	0.120	.199**	.671		.801	.803	.450
Information Support	4.216	.687	3	.207**	.274**	.356**	.392**	.834	.870	.872	.695

Note:*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
***.α refers to Cronbach's Alpha; diagonal value is AVE's square root AVE.

Moreover, the results of the CFA revealed a good overall fit (X^2/df = 1.579, GFI = 0.919, NFI = 0.893, CFI = 0.957, RMSEA = 0.047). SEM, which was used to test the proposed model and hypothesized relationships among the constructs, showed a fairly good fit as well (CFI = 0.987, RMSEA = 0.033, SRMR = 0.056). An Analysis of Moment Structure (AMOS) was conducted to test the proposed models and relationships (Podsakoff et al., 2012). The framework presented in Figure 2 posits the moderating role of Information Support on the relationship between Recommendations and Referrals and Evidential Social Commerce Influence
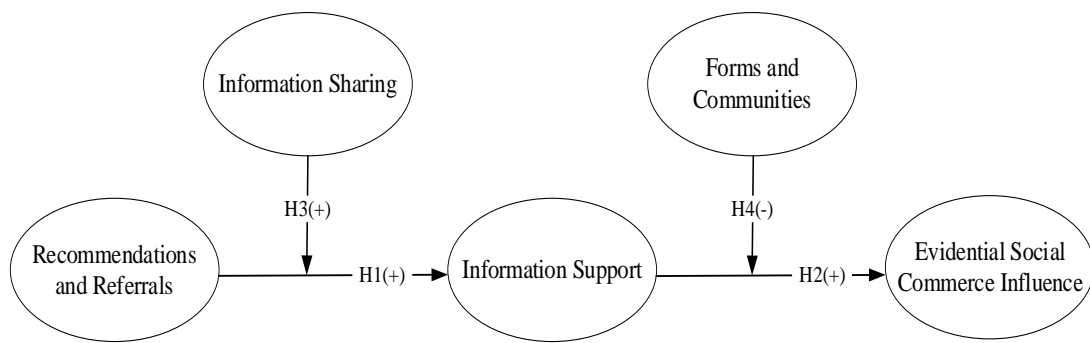
Note:* significant at the 0.05 level (2-tailed); **significant at the 0.01 level (2-tailed);*** significant at the 0.001 level (2-tailed).

Figure 2: Results of the Analysis

As can be seen in Table 2, Model 1 shows that this relationship is partially mediated by Recommendation and Referrals --> Information Support = 0.213, p = 0.003 and Information Support --> Evidential Social Commerce Influence =0.463, p = 0.000, in support of H1and H2 (Figure 2). The moderating effects of Information Sharing and Forums and Communities in the multiple models are presented in Models 2 and 3. They show the moderating effect of Information Sharing on Information Support and the moderating effect of Forums and Communities on the relationship between Information Support – Evidential Social Commerce Influence. H3 assumes that Information Sharing moderates the relationship between Recommendations and Referrals, rand Information Support. The models detected a significant moderating effect (β = -1.825, p > 0.000). Finally, H4 predicts a moderating effect of Forums and Communities on the relationship between Information Support and Evidential Social Commerce Influence. The results showed that the moderation is significant (β = 1.508, p < 0.006). More specifically, as shown in Figures 3 and 4. H3 and H4 received statistically significant support through a hierarchical regression analysis. Thus, H1, H2, H3, and H4 were supported.

Table 2: Results of Structural Equation Path Estimations

	Model 1		Model 2		Model 3	
	Information support	Evidential social commerce influence	Information support	Evidential social commerce influence	Information support	Evidential social commerce influence
Control variable						
Age	-.132*	-.170**	-.114	-.117*	-.088	-.123*
Sex	-.187**	-.011	-.200**	.057	-.178**	.051
Education	.105	.177**	.120*	.142*	.126*	.134*
Main effect						
Recommendations and referrals			.114		-.525*	
Information support				.353***		1.299***
Moderating effect						
Information sharing			.244***		-.901*	
Forums and communities				.072		1.313***
Recommendations and referrals x Information sharing					1.508**	
Information x Forums and communities						-1.825***
R^2	.233	.226	.382	.438	.413	.499
ΔR^2	.054*	.051*	.146	.192	.171	.249
F-value	4.948**	4.630**	8.799***	12.198***	8.778***	14.142***

Note:* is significant at the 0.05 level (2-tailed).
** is significant at the 0.01 level (2-tailed).
*** is significant at the 0.001 level (2-tailed)

To interpret the moderating effect graphically, the moderator was redefined as high and low levels of forums and communities, measured as plus and minus one standard deviation from the mean, based on Preacher, Rucker, and Hayes (2007). The results indicate that the information support x forums and communities' interaction is positive, as postulated. As depicted in Figure 4, the effect of information support on evidential social commerce influence is stronger for a higher level of forums and communities. In summary, Model 3 had an adequate model fit: CFI = 0.987, RMSEA = 0.033, SRMR = 0.056. The models also explained the criterion variables well, with R^2 information support = 0.382 and R^2 evidential social commerce influence = 0.438.
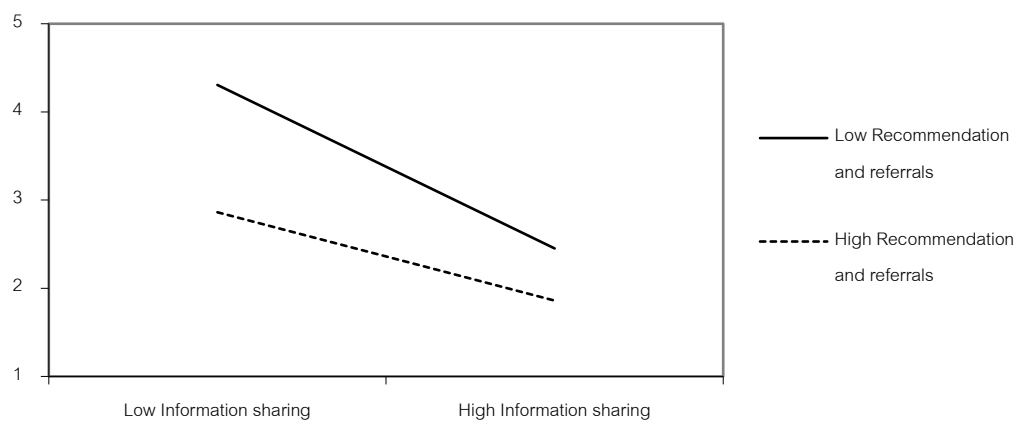
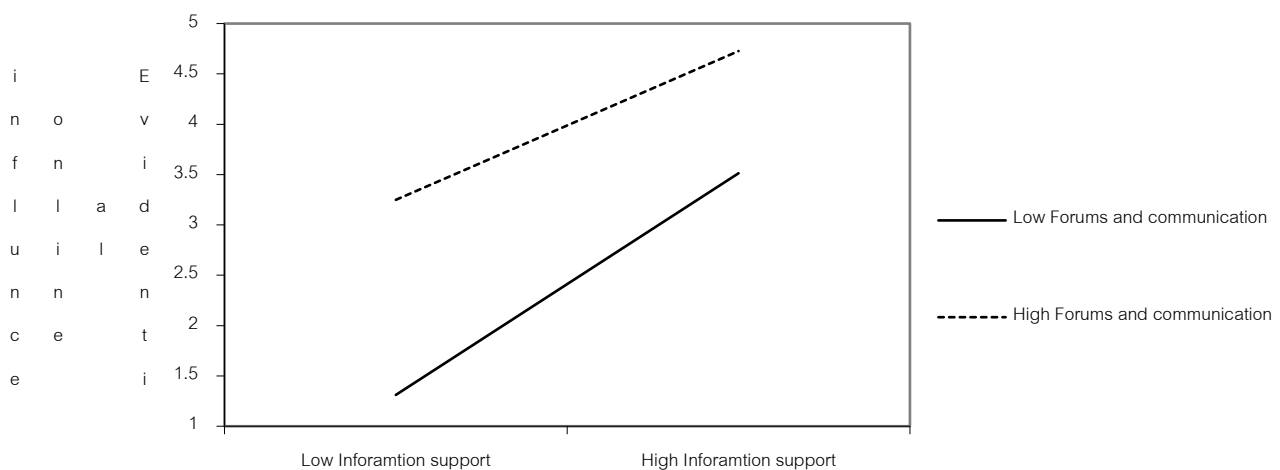**Figure 3:** Moderating Effect of Information Sharing

Figure 4: Moderating Effect of Forums and Communities

5. Discussion and Conclusion

This investigation is among the first in the social commerce/online shopping literature to examine the relationship between recommendations and referrals, information support, and evidential social commerce influence in online communities. It contributes to the existing literature by theoretically identifying and empirically testing the moderating role of forums and communities in relation to the link between information support and evidential social commerce influence. The findings support the model proposed in Figure 1 in that recommendations and referrals have a positive relationship with information support. When consumers get different information, for example, positive and negative information, their evaluation of the information will be affected by social aspects. The findings also indicate that information sharing moderates the relationship linking recommendations and referrals to information support. The more social commerce users identify themselves as in-group members of a community, the more likely they will engage in social commerce activities. Concurrently, forums and communities moderate the relationship linking information support to evidential social commerce influence, which indicates that consumers' high level of information sharing on social platforms necessarily moderates the relationship between the recommendation and referrals they receive and the information support they build within the social platforms.

The reason may be embedded in the very nature of recommendations and referrals.In particular, the fact that H3 is supported shows that consumers' high level of information sharing on social platforms moderates the recommendations they receive. It also moderates the relationship between recommendations and the informational support consumers build on these platforms. The main reason may be the quality of the information obtained. From a psychological perspective, when recommendations and referrals are received, the advice and suggestions imparted may create confusion and result in information overload. This echoes a study from Harris & Orth's (2020) who found that making use of recommendation and referral networks can be associated with increased rather than reduced stress, thereby resulting in a higher emotional cost to recipients. However, if the quality of the recommendations and referrals is high, the emotional costs will be mitigated. Consumers usually read online comments and suggestions about the product, which may lead to some confusion.

- Theoretical Implications
Social media operators plays an important role in exchanging and sharing information (Sheikh et al., 2019). They provide network services to customers, including much of the content. Services include website promotion and network promotion, network marketing management, website improvement and change, website post update and maintenance, and website enterprise operation. The two most important services are website maintenance and promotion. Network operators should not only integrate the operational effects of the network from a network perspective, but also know provide multimedia services and applications to effectively use network resources, integrate network resources, and make them get the most effective use and benefits. While face-to-face interactions may still play an important role in influencing consumer decision-making, online communities present a huge opportunity for online operators to build intimacy through the community (Tajvidi et al., 2020). Active communities stimulate consumers' impulse to buy. To this end, informational support from virtual community members and their derived recommendations and referrals become value drivers for co-creation with distant others. Past research indicates that by going beyond traditional methods to assess the results of online social influence, methods such as purchase influence and e-WOM can have a psychological effect on purchases. e-WOM can provide either subjective recommendations or objective information. Subjective recommendations have a greater impact on purchasing behavior. The more e-WOM, the greater the impact on consumer purchase decisions.

This, however, is also a function of consumers' purchase behaviors, which can be divided into high involvement purchase decisions and low involvement purchase decisions. A different involvement will have a different impact on e-WOM. Online WOM is the product of the times. With the development and popularization of the Internet, it has become an important factor affecting consumer behavior (Arenas-Gaitán et al., 2018). This study contributes to the body of literature on social media in several ways. Its first contribution is the use of evidential social commerce influence as measured by the promotion of people's exchange on needed goods and social development. Although this novelty may seem subtle, this study sets a new research agenda by opening new research directions for the field of social commerce as it goes beyond e-commerce. Consistent with prior findings (e.g. Safia et al., 2019; Ventre et al., 2021), the rise of social media is one of the most important signs of social progress. Social influence has replaced traditional marketing and become social commerce. Companies hire people as network marketing service provider to promote product and service activities and communicate with consumers in a timely, relevant, customized, and cost saving way as part of the switch from the "one-to-one" to the "one-to-many" social communication model.

This online marketing media "to many" communication mode stands for openness, freedom, interaction, anonymity, and virtuosity. It also provides a convenient access to information, allowing enterprises establish many-to-many communication with customers on social media and exchange information between enterprises and users. It second contribution is that, to address prior limitations, this study exploits the interaction between the social penetration theory, social forum, and community theory on the one hand, and the refinement possibility models on the other to identify both socially oriented drivers (i.e., information support and recommendations) and personally initiated drivers (i.e., information sharing and forums and communities) and better explain users' social commerce influence. Discussing the drives of forums and communities in this digital age generates symbiotic perspectives and enriches the social exchange/penetration theory by showing how personal and social perspectives collectively influence consumers' online shopping tendencies (Lei et al., 2022; Moilanen & Ikäheimo, 2019). Posting experiences with a product via social media, for example, via likes or retweeting, and commenting on messages, can be used to build an intimate relationship with customers.

Study Limitations and Future Studies

Data were collected from online shoppers in Bangkok. This choice may pose a limitation on the generalizability of the findings. Future research is therefore encouraged to extend this investigation to other locations in Thailand. Moreover, one area of future investigation could assess the multilevel nature of the influence of social commerce platforms (social presence and fear of missing out) on individual social users' behaviors. Such an inquiry could remedy the literature gap, where there is a lack of consideration of the influence of consumers'/social commerce users' online shopping experiences on their social commerce intention. Online shopping experience may act as a direct or a moderating factor on customers' evidential social commerce influence, while consumers' social commerce attributes could work as another moderating condition. Finally, the model could be tested in different social commerce settings and differences among different virtual communities such as forums or real-time online chat systems compared, as these various contexts may yield greater insights. Some interviews and case studies could be employed in the process.

References

Agarwal, U. A., & Narayana, S. A. (2020). Impact of relational communication on buyer–supplier relationship satisfaction: Role of trust and commitment. *Benchmarking: An International Journal, 27*(8), 2459-2496.

Alalwan, A. A., Algharabat, R. S., Baabdullah, A. M., Rana, N. P., Raman, R., Dwivedi, R., & Aljafari, A. (2019). Examining the impact of social commerce dimensions on customers' value cocreation: The mediating effect of social trust. *Journal of Consumer Behaviour, 18*(6), 431-446.

Arenas-Gaitán, J., Rondan-Cataluña, F. J., & Ramírez-Correa, P. E. (2018). Antecedents of WOM: SNS-user segmentation. *Journal of Research in Interactive Marketing, 12*(1), 105-124.

Attar, R. W., Shanmugam, M., & Hajli, N. (2020). Investigating the antecedents of e-commerce satisfaction in social commerce context. *British Food Journal, 123*(3), 849-868.

Badrinarayanan, V., & Sierra, J. J. (2018). Triggering and tempering brand advocacy by frontline employees: Vendor and customer-related influences. *Journal of Business & Industrial Marketing, 33*(1), 42-52.

Banjarnahor, A. R. (2021). Technology acceptance model and theory of planed behavior: Mapping literature review. *Golden Ratio of Mapping Idea and Literature Format, 1*(2), 134-168.

Bastos, W. (2019). Consumers gain equivalent levels of happiness from sharing about an experience and an object. *European Journal of Marketing, 54*(1), 49-78.

Bazi, S., Hajli, A., Hajli, N., Shanmugam, M., & Lin, X. (2019). Winning engaged consumers: The rules of brand engagement and intention of co-creation in social commerce. *Information Technology & People, 33*(2), 456-476.

Busalim, A. H., & Ghabban, F. (2021). Customer engagement behaviour on social commerce platforms: An empirical study. *Technology in Society, 64(3)*, 1-17.

Chen, L., Zhu, F., & Mantrala, M. (2020). The path of support-to-sales: Mediating role of seller collaborative information exchange in social commerce. *European Journal of Marketing, 55*(2), 363-384.

Choi, B., & Kim, H. S. (2020). Online customer-to-customer interactions, customer–firm affection, firm-loyalty and participation intention. *Asia Pacific Journal of Marketing and Logistics, 32*(8), 1717-1735.

Dang, V. T. (2021). Social networking site involvement and social life satisfaction: The moderating role of information sharing. *Internet Research, 31*(1), 80-99.

Fang, Y.-H., & Li, C.-Y. (2020). Leveraging sociability for trust building on social commerce sites. *Electronic Commerce Research and Applications, 40*, 1-16.

Feeney, O., & Pierce, B. (2018). Accounting and new product development: The importance of interactions within social and technical structures. *Qualitative Research in Accounting & Management, 15*(2), 251-279.

Ferm, L.-E. C., & Thaichon, P. (2021). Customer pre-participatory social media drivers and their influence on attitudinal loyalty within the retail banking industry: A multi-group analysis utilizing social exchange theory. *Journal of Retailing and Consumer Services, 61(7)*, 1-11.

Fernandes, S., Venkatesh, V., Panda, R., & Shi, Y. (2021). Measurement of factors influencing online shopper buying decisions: A scale development and validation. *Journal of Retailing and Consumer Services, 59(3)*, 1-11.

Fernando, Y., Abideen, A. Z., & Shaharudin, M. S. (2020). The nexus of information sharing, technology capability and inventory efficiency. *Journal of Global Operations and Strategic Sourcing, 33*(4), 327-351.

Guo, J., Zhang, C., Wu, Y., Li, H., & Liu, Y. (2018). Examining the determinants and outcomes of netizens' participation behaviors on government social media profiles. *Aslib Journal of Information Management, 70*(4), 306-325.

Harris, M. A., & Orth, U. (2020). The link between self-esteem and social relationships: A meta-analysis of longitudinal studies. *Journal of personality and social psychology, 119*(6), 1459-1477.

Hsu, L.-C. (2018). Investigating the brand evangelism effect of community fans on social networking sites: Perspectives on value congruity. *Online Information Review, 43*(5), 842-866.

Hsu, L.-C., Chih, W.-H., & Liou, D.-K. (2015). Understanding community citizenship behavior in social networking sites: An extension of the social identification theory. *Industrial*

Management & Data Systems, 115(9), 1752-1772.

Islam, J. U., Rahman, Z., & Hollebeek, L. D. (2018). Consumer engagement in online brand communities: A solicitation of congruity theory. *Internet Research, 28*(1), 23-45.

Jakic, A., Wagner, M. O., & Meyer, A. (2017). The impact of language style accommodation during social media interactions on brand trust. *Journal of Service Management, 28*(3), 418-441.

Jendoubi, S., & Martin, A. (2020). Evidential positive opinion influence measures for viral marketing. *Knowledge and Information Systems, 62*(3), 1037-1062.

Koay, K. Y., Ong, D. L. T., Khoo, K. L., & Yeoh, H. J. (2020). Perceived social media marketing activities and consumer-based brand equity: Testing a moderated mediation model. *Asia Pacific Journal of Marketing and Logistics, 33*(1), 53-72.

Lei, X., Wu, H., & Ye, Q. (2022). Pregnant women's coping strategies, participation roles and social support in the online community during the COVID-19. *Information Processing & Management, 59*(3), 1-19.

Li, C.-Y. (2019). How social commerce constructs influence customers' social shopping intention? An empirical study of a social commerce website. *Technological Forecasting and Social Change, 144(7)*, 282-294.

Lin, X., & Kishore, R. (2021). Social media-enabled healthcare: A conceptual model of social media affordances, online social support, and health behaviors and outcomes. *Technological Forecasting and Social Change, 166*, 1-15.

Ma, L., Seydel, J., Zhang, X., & Ding, X. Y. (2021). Users' recommendation intentions for shared bike services: A social exchange theory perspective. *International Journal of Sustainable Transportation, 15*(1), 1-10.

Maia, C., Lunardi, G., Longaray, A., & Munhoz, P. (2018). Factors and characteristics that influence consumers' participation in social commerce. *Revista de Gestão, 25*(2), 194-211.

Meilatinova, N. (2021). Social commerce: Factors affecting customer repurchase and word-of-mouth intentions. *International Journal of Information Management, 57(4)*, 1-12.

Moilanen, S., & Ikäheimo, S. (2019). Managerial intentions for and employee perceptions of group-based incentives: Social exchange theory-based interpretations. *Journal of Accounting & Organizational Change, 15*(4), 605-625.

Nemec, M., Kolar, T., & Rusjan, B. (2018). Online communities as a new source of exploring patient dissatisfaction. *Journal of Health Organization and Management, 32*(8), 962-979.

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual review of psychology, 63*, 539-569.

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate behavioral research, 42*(1), 185-227.

Pu, X., Wang, Z., & Chan, F. T. (2020). Adoption of electronic supply chain management systems: The mediation role of information sharing. *Industrial Management & Data Systems, 120*(11), 1977-1999.

Reychav, I., Inbar, O., Simon, T., McHaney, R., & Zhu, L. (2019). Emotion in enterprise social media systems. *Information Technology & People, 32*(1), 18-46.

Safia, A., Chai, J., Frimpong, A. N. K., & Akram, U. (2019). The impact of social media characteristics on e-commerce use behaviour among youth in developing countries. *International Journal of Information Systems and Change Management, 11*(2), 188-207.

Sheikh, Z., Yezheng, L., Islam, T., Hameed, Z., & Khan, I. U. (2019). Impact of social commerce constructs and social support on social commerce intentions. *Information Technology & People, 32*(1), 68-93.

Singh, H., & Chakrabarti, S. (2020). Defining the relationship between consumers and retailers through user-generated content: insights from the research literature. *International Journal of Retail & Distribution Management, 49*(1), 41-60.

Song, M., & Liao, Y. (2018). Information sharing, operations capabilities, market intelligence responsiveness and firm performance: A moderated mediation model. *Baltic Journal of Management, 14*(1), 58-78.

Taecharungroj, V., Muthuta, M., & Boonchaiyapruek, P. (2019). Sustainability as a place brand position: A resident-centric analysis of the ten towns in the vicinity of Bangkok. *Place Branding and Public Diplomacy, 15*(4), 210-228.

Tajvidi, M., Richard, M.-O., Wang, Y., & Hajli, N. (2020). Brand co-creation through social commerce information sharing: The role of social media. *Journal of Business Research, 121(12)*, 476-486.

Tseng, H.-T., Ibrahim, F., Hajli, N., Nisar, T. M., & Shabbir, H. (2022). Effect of privacy concerns and engagement on social support behaviour in online health community platforms. *Technological Forecasting and Social Change, 178(3)*, 1-46.

Ventre, I., Mollá-Descals, A., & Frasquet, M. (2021). Drivers of social commerce usage: A multi-group analysis comparing Facebook and Instagram. *Economic Research-Ekonomska Istraživanja, 34*(1), 570-589.

Wang, C.-Y., Lee, H.-C., Wu, L.-W., & Liu, C.-C. (2017). Quality dimensions in online communities influence purchase intentions. *Management Decision, 55*(9), 1984-1998.

Yahav, I., Schwartz, D. G., & Welcman, Y. (2020). The journey to engaged customer community: Evidential social CRM maturity model in Twitter. *Applied Stochastic Models in Business and Industry, 36*(3), 397-416.

Zhao, D., Zhang, Q., & Ma, F. (2020). Communication that changes lives: An exploratory research on a Chinese online hypertension community. *Library Hi Tech, 38*(4), 883-896.

Guideline for Authors

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Topics discussed:
1. **Mission Statement**
2. **Periodicity**
3. **Article Submission**
4. **Review Process**
5. **Publication Ethics**
6. **Research Components**
7. **AJMI Style Guide**

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- Acknowledge ideas and previously published results by citing them in the article and listing them in the references.

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- Provide a detailed account of the underlying data used;
- Ensure that the conclusion is based on the evidence presented and not on personal opinion;
- Interpret and quote others' works accurately from original sources, not secondary ones, unless original sources are no longer available and a note to that effect is included in the article where appropriate; and
- Indicate if a submission has been translated into English and provide the proper bibliographic notation for the original article in APA (*Publication Manual of the American Psychological Association*, 6th Edition) format.

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The article should include the following components:

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- An outline of the research methodology/ research design
- Research findings
- A discussion of the results
- A conclusion and policy recommendations/ recommendations to managers

An emphasis should be placed on the discussion of the findings, the conclusion and policy recommendations/ recommendations to managers.

7. AJMI STYLE GUIDE

All of the following requirements need to be met before an article can be sent to reviewers.

If the formatting of a submitted paper does not match these requirements, **the paper will be returned without review for correction and re-submission.**

1. Format

- Must be a Word-compatible document (not a .pdf) and use the American Psychological Association (APA) Referencing Style as shown below (see sub-sections 6 and 7).

2. Title Page

- Uploaded separately from the abstract and body.
- Manuscript title (not in all capital letters).
- Title, name, affiliation and email address of all authors.
- Indicate clearly who is the corresponding author for journal communication.

3. Abstract

- Not more than 250 words.
- Should not include any information that would identify the author(s).
- Bold, Times New Roman, 12 point, no indentation.

4. Keywords

- Three to six keywords are required at the time of submission.

5. Body of the Paper

- A4 page size.
- Margin of 1" (2.5cm) on all four sides.
- Title of Article: Times New Roman font, 20 point.
- Section Heading: First letter of each word in capitals, bold 12 point font.
- Body Text: Times New Roman font, 12 point, single space between sentences.

6. In-Text Citations

- All in-text citations included throughout the article must have a corresponding full reference at the end of the manuscript body.
- Only direct quotes need a page number (not paraphrases).

- Direct Quotes
  - *One Author*
  Author's Last name (Year) stated that "direct quote" (page number).

Isenberg (2007) stated that "international dispersion is on the rise" (p. 56). **Or**
"Direct quote" (Last name, Year, page number)
"International dispersion is on the rise" (Isenberg, 2007, p. 56).

- *Two Authors*

First author's Last name and second author's Last name (Year, page number) mentioned that "direct quote" (page number).
Isenberg and Kerr (2007) mentioned that "international dispersion is on the rise" (p. 56). **Or**
'Direct quote' (first author's Last name & second author's Last name, Year, page number).
"International dispersion is on the rise" (Isenberg & Kerr, 2007, p. 56).

- Block Quotes

If a quote runs on for more than 40 words:
- Start the direct quotation on a new line
- Indent the text roughly half an inch from the left margin
- Remove any quotation marks
Example:
As Krugman (2019) stated:

> Maybe the larger point here is that there tends to be a certain amount of mysticism about trade policy, because the fact that it's global and touches on one of the most famous insights in economics, the theory of comparative advantage, gives it an amount of mind space somewhat disproportionate to its actual economic importance. (p. 3).

- Parenthetical Citing
- *One Author*

Author's Last name (Year) in-test parenthetical citation (paraphrase).
Isenberg (2007) argues that cross-border migration is increasing.
or
Paraphrase (Last name, Year)
Cross-border migration is increasing (Isenberg, 2007).

- *Two Authors*

First author's Last name and second author's Last name (Year) paraphrase.
Kerr and Isenberg (2007) argued that cross-border migration is increasing.
or
Paraphrase (first author's Last name & second author's Last name, Year).
Cross-border migration is on the rise (Isenberg & Kerr, 2007).

- *Three to Five Authors*

All authors' Last names (Year) paraphrase.
Kerr, Issenberg, and Steward (2007) argued that cross-border migration is increasing.
or
Paraphrase (all authors' Last names, Year).
Cross-border migration is increasing (Isenberg, Kerr, & Steward, 2007).

For all subsequent in-text paraphrases, first author's Last name followed by "et al." and the publication year.
Isenberg et al. (2007) found that the event resulted in thousands of people flocking to the border.
or
The event resulted in thousands of people flocking to the border (Isenberg et al., 2007).

Full References

The following formatting rules apply:
- References appear at the end of the manuscript body in alphabetical order by the first word in the reference (usually the author's last name, sometimes the title).
- All references must have a corresponding in-text citation in the manuscript.
- If more than one work by an author is cited, list them by earliest publication date first.
- If the list contains more than one item published by the same author(s) in the same year, add lower case letters immediately after the year to distinguish them (e.g. 1983a).
- If there is no author, the title moves to the author position (filed under the first significant word of the title).
- Reference list entries should be indented half an inch or 12 mm (five to seven spaces) on the second and subsequent lines of the reference list for every entry - a hanging indent is the preferred style (i.e. entries should begin flush left, and the second and subsequent lines should be indented).
- Double-space all reference entries.

Follow APA Referencing Style format for each source type listed as shown below. For any source type not shown below, go to the APA website for references.

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  Nagel, P. C. (1992). *The Lees of Virginia: Seven generations of an American family.* New York: Oxford University Press.

  - *Two Authors*
  Author, F. M., & Author, F. M. (Year). *Topic Title*. City: Publisher.
  Nagel, P. C., & Sampson, T. (1995). *Seven generations of an American family.* New York: Oxford University Press**.**
  - *Three Authors*
  Author, F. M., Author, F. M., & Author, F. M. (Year). *Topic Title*. City: Publisher.
  Nagel, P. C., Sampson, T., & Hubbard, A. J. (1992). *The Lees of Virginia: Seven generations of an American family.* New York: Oxford University Press.

- Journal
  Author, F. M. (Year). Title of article. *Title of Journal*, *vol.* (issue), pp xxx-xxx.
  Turner, R. A. (2007). Coaching and consulting in multicultural contexts. *Consulting Psychology Journal: Practice and Research*, *59*(4), 241-243.

- Website
  Author, F. M./ Organization. (Year of Publication). Web page title. Retrieved (Date) from: URL Address.
  Bogati, S. (2013, October 14). Hospitality Industry in Nepal. Retrieved November 3, 2018, from: http://hospitalityindustryinnepal.blogspot.com/

- Newspaper
  Author, F. M. / Organization (Year, month, day published). Title of article. *Title of newspaper*, page.
  Parker, T. D. (2009, August 3). Getting rid of side stitches. *The Washington Post*, p. E1, E4.

7. Formatting Figures and Table

There are two different styles for graphics in APA format: **Figures** (charts, images, pictures) and **Tables.**

- Figures
  - The first graphic (chart, drawing, or image) will be labeled as Figure 1 and be the first one mentioned in the article.
  - Subsequent ones will follow in the appropriate numeral order in which they appear in the article.
  - Follow APA Referencing Style format for each source type listed as shown below. This means that both the Title and the Source are written below the Figure.

Figure 1: Name of Picture
Source: Author's Last name OR Organization's name (Year, Page number OR Online)
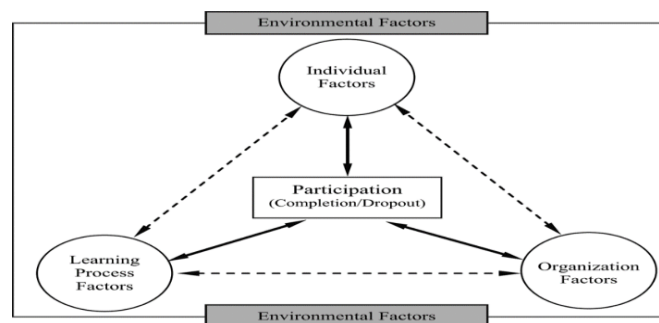Khoman (2017, p. 137)

Figure 1: Conceptual framework
Source: Author's Last name OR Organization's name (Year: Page number OR Online)
Wang (2019: p. 45)

- Tables

Tables are labelled separately to Figures and should follow the instructions below.
  - The first Table will be labeled as Table 1 and be the first Table mentioned in the article.
  - Subsequent ones will follow in the appropriate numeral order in which they appear in the article. This means that Tables are labelled separately to Figures.
  - The APA Referencing Style format for a Table differs to that of a Figure. A Table has the Title above the Table, and the Source will be listed below.

Table 2: Domestic Tourism in Ayutthaya and Sukhothai in 2004

Type of Data (2004)	Ayutthaya	Sukhothai
Visitor Thai Foreigners	3,023,933	1,915,975 1,107,958

Source: Author's Last name OR Organization's name (Year: Page number OR Online)
Tourism Authority of Thailand (2005: Online)

For any source type not shown above, go to the APA website for references.