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Incentives and Leadership Structures: Shaping International Expansion Through Exploration and Exploitation Strategies

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ABSTRACT

The international expansion strategies of Multinational Enterprises (MNEs), whether exploration or exploitation, remain a longstanding debate. Based on Upper Echelons Theory, this study investigates how the structure and characteristics of a firm's executives, including the Top Management Team (TMT) and CEO, influence strategic choices. Additionally, executive compensation is considered an incentive mechanism. This research examines the effects of TMT's long-term and short-term compensation on firms' international strategy selection. While most prior studies link TMT compensation or diversity to firm performance, this study focuses on their relationship with international strategy choices. Data from 745 Taiwan-based MNEs in the technology and communication industries, encompassing 10,688 TMT members, were extracted from the Taiwan Economic Journal (TEJ) database for 2021 and 2022. The results reveal that TMT short-term compensation positively correlates with firms' exploitation strategies, while long-term compensation correlates with exploration strategies. Moreover, CEO power negatively moderates these relationships, whereas TMT diversity and executives' experience partially enhance them. This study contributes to understanding the role of incentives and leadership structures in shaping international expansion strategies.

ARTICLE INFO

Keywords: Top Management Team (TMT), Chief Executive Officer (CEO), Compensation, International Expansion Strategies, Upper Echelons Theory.

JEL Codes: M16, M12, M10.

1. Introduction

Previous research has extensively explored the concepts of exploitation and exploration. According to March (1991), exploitation is associated with refinement, efficiency, and implementation, whereas exploration involves search, experimentation, and discovery. Within the context of international business, exploitation strategies leverage existing assets to expand operations in established markets. Conversely, exploration strategies focus on entering new markets to build long-term resource reserves (Batsakis & Theoharakis, 2021; Levinthal & March, 1993).

He and Wong (2004) and Cao et al. (2009) use exploitation to denote enhancing existing products or markets and exploration to signify introducing new ones. Luo et al. (2018) extended this framework to managerial behavior, examining how CEOs' leadership styles affect TMT behavior. Similarly, Cui et al. (2013) highlighted the cognitive mechanisms enabling exploration- or exploitation-oriented strategies in foreign direct investments. Drawing on these foundations, this study classifies multinational enterprises' (MNEs') strategies as exploration or exploitation.

The Upper Echelons Theory posits that a firm's strategic decisions are influenced by its executives' characteristics (Hambrick & Mason, 1984). Lin and Cheng (2013) suggest that compensation structures incentivize executives to pursue specific strategic goals, including international market development. Fahlenbrach (2009) also argues that compensation contracts shape executive decision-making. While prior studies primarily link compensation to firm performance, this study focuses on its influence on international strategy choices, examining moderating factors of leadership structures like TMT diversity, executives' experience, and CEO power.

This research aims to analyze the impact of TMT compensation on firms' international strategy choices—exploration or exploitation—with moderating effects of leadership structures including TMT diversity, CEO power, and executive experience.

2. Literature Review and Hypotheses

2.1. TMT Compensation and Firm Internationalization

Jensen and Murphy (1990) categorize compensation into short-term (cash, wages, bonuses) and long-term (stock options, incentive plans). These compensation types have distinct impacts on TMT's strategic decisions (Sanders, 2001). Long-term compensation aligns executives' interests with shareholders', fostering long-term strategic thinking (Fahlenbrach, 2009). Short-term incentives, on the other hand, drive immediate operational performance (Goergen & Renneboog, 2011; Murphy, 1999).

This study hypothesizes that TMTs with long-term compensation prioritize exploration strategies to enhance future firm value. In contrast, short-term compensation motivates TMTs to focus on exploitation strategies for immediate profitability.

Hypothesis 1a: TMT long-term compensation positively correlates with international exploration strategies.

Hypothesis 1b: TMT short-term compensation positively correlates with international exploitation strategies.

2.2. Moderating Effects of TMT

TMT diversity enhances cognitive complexity, enabling better navigation of international market challenges (Jackson, 1992; Wiersema & Bantel, 1992). Hambrick (2007) suggests that the interplay between executive characteristics and compensation significantly influences firm strategies. Functional diversity and industrial diversity are expected to moderate the relationship between compensation and strategy. Executive experience shapes decision-making (Hitt & Tyler, 1991). Variables like foreign degrees, tenure, and multiple roles enrich TMT's ability to navigate internationalization complexities (Becker, 1970; Sambharya, 1996).

Hypothesis 2a: TMT diversity positively moderates the relationship between long-term compensation and exploration and between short-term compensation and exploitation.

Hypothesis 2b: TMT experience positively moderates the relationship between long-term compensation and exploration and between short-term compensation and exploitation.

2.3. Moderating Effect of CEO

CEO power influences strategic choices. Powerful CEOs might prioritize risk-averse decisions to protect personal stakes (Sanders, 2001; Liu et al., 2011). This study hypothesizes that CEO power negatively moderates the compensation-strategy relationship. CEO experience, including education, tenure, and multiple roles, significantly impacts strategic decision-making (Herrmann & Datta, 2006).

Hypothesis 3a: CEO power negatively moderates the relationship between long-term compensation and exploration and between short-term compensation and exploitation.

Hypothesis 3b: CEO experience positively moderates the relationship between long-term compensation and exploration and between short-term compensation and exploitation.

The research framework is shown in Figure 1.

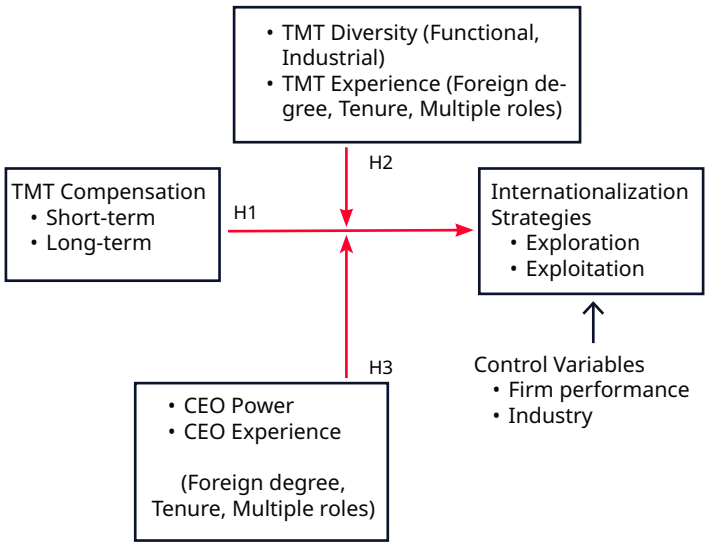

Fig. 1. Theoretical Model.

3. Research Methods

3.1. Data and Sample

This study utilizes data from Taiwanese multinational enterprises (MNEs) operating in the technology and communication industries. According to the Sustainability Accounting Standards Board (SASB), businesses can be classified into 11 industry sectors: Consumer Goods, Extractives and Mineral Processing, Financials, Food and Beverage, Health Care, Infrastructure, Renewable Resources and Alternative Energy, Resource Transformation, Services, Technology and Communications, and Transportation. Given the characteristics of Taiwan's economy, the technology and communications industry exhibits a high level of internationalization, making it an ideal focus for investigating strategic choices in international expansion.

This study examines the most recent data available at the time of research, covering the years 2021 and 2022. Independent and moderating variable data are drawn from 2021, while dependent variable data are collected from 2022. A one-year lag between independent and dependent variables is incorporated to account for the delayed impact of top management team (TMT) compensation on firms' international expansion strategies, mitigating potential issues of causality.

From an initial pool of 817 companies in the technology and communications industry, firms with incomplete data were excluded, resulting in a final sample of 745 valid companies and 10,688 TMT members. This study further includes key variables, such as TMT and CEO experience, TMT diversity, and CEO power, to analyze their interactions. Additionally, two control variables are introduced to enhance the robustness of the findings.

3.2. Analysis Method

This study employed SPSS (Statistical Product and Service Solutions) version 24 as the primary analysis tool. Developed by IBM, SPSS is a suite of software products and services designed for statistical analysis, data mining, predictive analysis, and decision support tasks. Key analytical techniques used in this study included linear regression and correlation analysis to examine the relationships between variables.

To investigate interaction effects within the research framework, the study utilized the SPSS Process macro, developed by Andrew F. Hayes. This module integrates seamlessly with SPSS, streamlining the process of conducting complex analyses and reducing the need for manual examination of individual components within the research framework. The Process module enhanced the efficiency and accuracy of the interaction analysis, making it particularly suitable for this study's needs.

3.3. Variables

This study employs two dependent variables to measure firm's international expansion strategies, drawing on the approach of Buckley et al. (2014). The first variable, exploration, representing the breadth of internationalization, is defined as the number of countries in which multinational firms conduct business. The second variable, exploitation, showing the depth of internationalization, reflects the extent to which firms conduct business and invest in host countries. These concepts align with the framework proposed by Levinthal and March (1993), which distinguishes between exploitation and exploration strategies:

Exploration: This strategy involves expanding a firm's long-term success by entering new markets. In this study, exploration is measured by the number of countries where the firm has invested overseas, as documented in the TEJ.

Exploitation: This strategy facilitates a firm's strategic utilization and enhancement of existing assets. In this study, exploitation is represented by the firm's choice to develop within a host country where it already has foreign operations. Accordingly, the number of overseas companies invested in 2022, as recorded in the Taiwan Economic Journal (TEJ), serves as the measure of exploitation.

Control variables were included to address factors that could influence the analysis: Firm Performance: Carpenter and Sanders (2004) suggest that firm performance impacts compensation levels, with higher-performing firms typically offering higher pay to top management teams (TMT). To control for this effect, firm performance is measured using the book-to-market ratio. Industry Effects: Recognizing that industries vary in background and characteristics, Gomes and Ramaswamy (1999) advocate the use of dummy variables to capture industry-specific effects. Following this approach, industry classification data from the TEJ were used to categorize firms into three main sectors: Electronics Technology (Industry_d1), Communications (Industry_d2), and Others, where dummy variables were assigned as follows: 10 for Electronics Technology, 01 for Communications, and 00 for Others. To avoid multicollinearity and ensure accurate model estimation, only the first two dummy variables (Industry_d1 and Industry_d2) were included in the model.

4. Empirical Results

4.1. Regression analysis results

Table 1 presents the descriptive statistics and correlation coefficients for the 745 firms included in the study. To ensure the validity of the regression analysis, the study assessed potential multicollinearity among the variables by calculating the Variance Inflation Factor (VIF). The VIF values ranged from 1.04 to 1.47, well below the recommended threshold of 10 (Neter et al., 1996). These results indicate that multicollinearity is not a concern in this study, affirming the reliability of the regression model and the relationships examined between the variables.

Table 1 . Descriptive statistics and correlation matrix

	Mean	Std. Dev	1	2	3	4	5	6	7	8
1 Exploration	1.74	2.306	1							
2 Exploitation	2.33	3.799	0.897**	1						
3 Com_Lt	1.86030	1.40792	0.208**	0.211**	1					
4 Com_St	3.02748	0.47235	0.244**	0.222**	0.392**	1				
5 CEO_Power	5.52882	9.84192	-0.079*	-0.064	-0.121**	-0.192**	1			
6 CEO_Fd	0.32	0.466	0.076*	0.063	0.081*	0.112**	-0.031	1		
7 TMT_Fd	0.2546	0.16100	0.180**	0.178**	0.107**	0.190**	-0.064	0.270**	1	
8 CEO_Tenure	15.9504	9.88886	0.050	0.027	0.106**	0.113**	-0.110**	-0.037	-0.080*	1
9 TMT_Tenure	10.0258	4.19094	0.084*	0.055	0.156**	0.116**	-0.124**	0.017	-0.076*	0.532**
10 CEO_Mr	5.16	5.651	0.217**	0.276**	0.074*	0.090*	0.049	-0.005	0.132**	0.050
11 TMT_Mr	3.7689	1.91500	0.160**	0.187**	0.057	0.080*	0.031	0.020	0.301**	-0.244**
12 Functional	0.59314	0.08441	0.087*	0.074*	0.191**	0.217**	-0.103**	0.010	-0.084*	0.154**
13 Industrial	0.65666	0.13288	0.024	0.036	-0.116**	-0.087*	-0.020	0.000	0.058	-0.037
14 Perform	0.4952	0.28701	0.041	0.071	-0.045	-0.031	-0.043	-0.059	-0.093*	0.101**
15 Industry_d1	0.46	0.499	-0.027	-0.009	0.001	0.050	0.022	0.019	0.023	-0.009
16 Industry_d2	0.50	0.500	0.023	0.004	0.011	-0.050	-0.021	-0.016	-0.028	0.020

Note: 3.Com_Lt= Long-term compensation, 4. Com_St= Short-term compensation, 5. CEO_Power= CEO Power, 6. CEO_Fd=CEO Foreign degree, 7. TMT_Fd= TMT Foreign degree, 8. CEO_Tenure= CEO Tenure, 9. TMT_Tenure= TMT Tenure, 10. CEO_Mr=CEO Multiple roles, 11. TMT_Mr=TMT Multiple roles, 12. Functional= TMT Functional diversity, 13. Industrial= TMT Industrial diversity, 14. Perform= Performance, 15. Industry _d1= Industry, 16. Industry _d2= Industry

Table 1 (continued) : Descriptive statistics and correlation matrix

	9	10	11	12	13	14	15	16
1 Exploration								
2 Exploitation								
3 Com_Lt								
4 Com_St								
5 CEO_Power								
6 CEO_Fd								
7 TMT_Fd								
8 CEO_Tenure								
9 TMT_Tenure	1							
10 CEO_Mr	-0.020	1						
11 TMT_Mr	-0.239**	0.387**	1					
12 Functional	0.109**	0.027	-0.096**	1				
13 Industrial	-0.017	0.102**	0.107**	-0.078*	1			
14 Perform	0.154**	0.087*	0.002	0.007	0.050	1		
15 Industry _d1	-0.030	-0.005	0.018	-0.026	-0.058	-0.009	1	
16 Industry _d2	0.030	0.000	-0.011	0.028	0.065	-0.008	-0.930**	1

Notes: ** p< 0.01, * p< 0.05 ; Total of 745 observations.

Model 1 evaluates the effect of control variables on the dependent variables. The results reveal a negative relationship between the electronics and communications industries and both exploitation and exploration. Notably, the coefficient for the electronics industry exhibits a larger negative value compared to the communications industry; however, neither coefficient is statistically significant. Additionally, the coefficient for firm performance (Perform) on exploitation is both larger in magnitude and more significant than its corresponding coefficient on exploration.

Model 2 tests Hypothesis 1, which posits a relationship between compensation structure and international expansion strategies. The regression coefficient for long-term compensation (Com_Lt) on exploration is 0.219 and statistically significant ($p < 0.01$), indicating a positive association between these variables. Similarly, the coefficient for short-term compensation (Com_St) on exploitation is 1.346 and also statistically significant ($p < 0.01$). These findings align with theoretical expectations, providing empirical support for Hypothesis 1.

4.2. Regression analysis with moderating variables

Model 3 incorporates all variables, including the moderating variables, to assess their effects on the dependent variables. The empirical model is structured as follows:

$$\text{Exploration or Exploitation} = \beta_0+\beta_1C_1+\beta_2C_2+\beta_3C_3+\beta_4X_1+\beta_5X_2+\beta_6M_1+\beta_7M_2+\beta_8M_3+\beta_9M_4+\beta_{10}M_5+\beta_{11}M_6+\beta_{12}M_7+\beta_{13}M_8+\beta_{14}M_9+\varepsilon,$$

where C_1= Performance (Perform), C_2= Industry (Industry_d1), C_3= Industry (Industry_d2), X_1= TMT long-term compensation (Com_Lt), X_2= TMT short-term compensation (Com_St), M_1= TMT Functional diversity (Functional), M_2= TMT Industrial diversity (Industrial), M_3= TMT Foreign degree (TMT_Fd), M_4= TMT Tenure (TMT_ Tenure), M_5= TMT Multiple roles (TMT_Mr), M_6= CEO Foreign degree (CEO_Fd), M_7= CEO Tenure (CEO_Tenure), M_8= CEO_Multiple roles (CEO_Mr), M_9= CEO Power (CEO_Power), ε is the error value.

Tables 3 to 8 present the results of the linear regression analysis for the variables examined in this study.

Table 2. Results of regression analysis: Main effect.

	Model 1	**Model 2**			**Model 3**	
	(1)	(2)	(1)	(2)	(1)	(2)
Control						
Perform	.328 (.295)	.932** (.485)	.424* (.284)	1.088** (.469)	.285 (.284)	.849** (.464)
Industry_d1	-.160 (.462)	-.239 (.760)	-.229 (.444)	-.358 (.734)	-.199 (.434)	-.290 (.708)
Industry_d2	-.041 (.460)	-.190 (.757)	-.067 (.443)	-.248 (.732)	-.049 (.433)	-.199 (.707)
Dependent						
Com_Lt			.219*** (.063)	.402*** (.104)	.176*** (.063)	.339*** (.103)
Com_St			.953*** (.188)	1.346*** (.310)	.709*** (.192)	.967*** (.313)
Moderator						
Functional					1.022 (.991)	1.361 (1.617)
Industrial					.366 (.612)	.720 (.999)
TMT_Fd					1.493*** (.552)	2.323*** (.900)
TMT_Tenure					.037** (.023)	.041 (.038)
TMT_Mr					.081* (.049)	.128** (.081)
CEO_Fd					.110 (.179)	.110 (.291)
CEO_Tenure					-.002 (.010)	-.009 (.016)
CEO_ Mr					.062*** (.016)	.142*** (.025)
CEO_Power					-.006 (.008)	-.008 (.014)
R	.049	.072	.281	.273	.368	.391
R^2	.002	.005	.079	.075	.136	.153
R^2 Change	.002	.005	.076	.070	.057	.075

Notes: (1) is Exploration, (2) is Exploitation ***p<0.01, **p<0.05, *p<0.1, one-tailed. Values in the parentheses are standard errors.

Table 3. Results of regression analysis: Moderation effect of TMT diversity.

	Model 4		Model 5		Model 6		Model 7	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Control								
Perform	.452* (.286)	1.123*** (.472)	.478** (.285)	1.165*** (.471)	.377* (.284)	1.008** (.469)	.404* (.284)	1.048** (.468)
Industry_d1	-.225 (.445)	-.353 (.735)	-.227 (.444)	-.356 (.733)	-.253 (.443)	-.397 (.732)	-.239 (.444)	-.381 (.731)
Industry_d2	-.068 (.443)	-.248 (.733)	-.072 (.442)	-.253 (.731)	-.109 (.443)	-.323 (.730)	-.092 (.443)	-.301 (.729)
Dependent								
Com_Lt	-.189 (.394)	-.074 (.650)	.205*** (.063)	.384*** (.105)	-.302 (.291)	-.377 (.480)	.224*** (.063)	.400*** (.104)
Com_St	.941*** (.190)	1.339*** (.314)	-1.388* (1.064)	-1.937 (1.758)	.948*** (.188)	1.343*** (.310)	.237 (.866)	-1.801 (1.424)
Moderator								
Functional	-.635 (1.494)	-.944 (2.468)	-11.931** (5.695)	-17.107** (9.142)				
Industrial					-.685 (1.064)	-.589 (1.756)	-2.50. (4.034)	-13.113** (6.636)
TMT_Fd								
TMT_Tenure								
TMT_Mr								
CEO_Fd								
CEO_Tenure								
CEO_ Mr								
CEO_Power								
Interaction								
Lt*Functional	.684 (.657)	.800 (1.086)						
St*Functional			4.140** (1.864)	5.824** (3.081)				
Lt* Industrial					.807** (.433)	1.213** (.714)		
St* Industrial							1.131 (1.315)	4.930** (2.162)
R	.284	.275	.292	.282	.293	.287	.287	.292
R^2	.080	.075	.085	.079	.004	.082	.082	.085
R^2 Change	.001	.001	.006	.004	.004	.004	.001	.006

Table 4. Results of regression analysis: Moderation effect of CEO and TMT foreign degree.

	Model 8		Model 9		Model 10		Model 11	
	(1)	***(2)***	***(1)***	***(2)***	***(1)***	***(2)***	***(1)***	(2)
Control								
Perform	.459* (.284)	1.136*** (.470)	.469* (.284)	1.144** (.470)	.516** (.282)	1.242*** (.465)	.575** (.283)	1.338** (.467)
Industry_d1	-.241 (.444)	-.373 (.733)	-.226 (.444)	-.354 (.734)	-.177 (.439)	-.263 (.724)	-.168 (.439)	-.258 (.725)
Industry_d2	-.089 (.443)	-.279 (.732)	-.068 (.442)	-.249 (.731)	.010 (.438)	-.109 (722)	.000 (.438)	-.139 (.723)
Dependent								
Com_Lt	.153** (.074)	.310*** (.122)	.205*** (.063)	.384*** (.105)	.019 (.107)	.016 (.176)	.208*** (.062)	.382*** (.103)
Com_St	.918*** (.188)	1.299*** (.311)	.767*** (.210)	1.117*** (.348)	.819*** (.188)	1.116*** (.310)	.274 (.306)	.266 (.505)
Moderator								
Functional								
Industrial								
TMT_Fd					.671 (.792)	.807 (1.306)	-4.508* (2.858)	-6.840* (4.718)
TMT_Tenure								
TMT_Mr								
CEO_Fd	-.158 (.300)	-.249 (.496)	-1.905* (1.244)	-2.319 (2.057)				
CEO_Tenure								
CEO_ Mr								
CEO_Power								
Interaction								
Lt* TMT_ Fd					.740** (.333)	1.429*** (.549)		
St* TMT_Fd							2.143** (.924)	3.366** (1.525)
Lt* CEO_ Fd	.205* (.125)	.287* (.207)						
St* CEO_Fd			.698** (.401)	.885* (.663)				
R	.290	.280	.291	.280	.322	.321	.323	.317
R^2	.084	.079	.085	.078	.104	.103	.104	.101
R^2 Change	.003	.002	.004	.002	.006	.008	.007	.006

Table 5. Results of regression analysis: Moderation effect of CEO and TMT Tenure.

	Model 12		Model 13		Model 14		Model 15	
	(1)	*(2)*	*(1)*	*(2)*	*(1)*	*(2)*	*(1)*	*(2)*
Control								
Perform	.443 (.287)	1.132** (.474)	.445 (.288)	1.149** (.475)	.400* (.289)	1.106** (.478)	.416* (.289)	1.143*** (.477)
Industry_d1	-.252 (.445)	-.364 (.736)	-.268 (.446)	-.394 (.737)	-.258 (.446)	-.384 (.737)	-.289 (.446)	-.452 (.737)
Industry_d2	-.088 (.444)	-.247 (.734)	-.099 (.445)	-.272 (.735)	-.104 (.445)	-.277 (.735)	-.134 (.445)	-.346 (.735)
Dependent								
Com_Lt	.115 (.112)	.327* (.184)	.218*** (.063)	.405*** (.104)	.090 (.151)	.297 (.250)	.206*** (.064)	.393*** (.105)
Com_St	.962*** (.189)	1.367*** (.312)	.692* (.311)	1.030** (.514)	.947*** (.188)	1.351*** (.311)	.387 (.401)	.499 (.663)
Moderator								
Functional								
Industrial								
TMT_Fd								
TMT_Tenure					-.002 (.030)	-.018 (.050)	-.166* (.119)	-.282* (.197)
TMT_Mr								
CEO_Fd								
CEO_Tenure	-.009 (.013)	-.015 (.022)	-.057 (.058)	-.082 (.096)				
CEO_ Mr								
CEO_Power								
Interaction								
Lt* TMT_Tenure					.012 (.014)	.010 (.023)		
St* TMT_Tenure							.062* (.040)	.095* (.066)
Lt* CEO_Tenure	.443 (.287)	.005 (.010)						
St* CEO_Tenure		.	.020 (.019)	.025 (.096)				
R	.284	.275	.283	.275	.284	.274	.288	.278
R^2	.081	.075	.080	.076	.081	.075	.083	.077
R^2 Change	.002	.000	.001	.001	.001	.000	.003	.003

Table 6. Results of regression analysis: Moderation effect of CEO and TMT multiple roles.

	Model 16		Model 17		Model 18		Model 19	
	(1)	***(2)***	***(1)***	***(2)***	(1)	(2)	(1)	(2)
Control								
Perform	.279 (.279)	.774** (.453)	.281 (.281)	.754** (.457)	.403* (.282)	1.036** (.463)	.403* (.281)	1.048** (.462)
Industry_d1	-.141 (.436)	-.155 (.707)	-.201 (.437)	-.285 (.710)	-.260 (.441)	-.415 (.723)	-.245 (.440)	-.393 (.722)
Industry_d2	.019 (.435)	-.049 (.705)	-.043 (.436)	-.177 (.708)	-.087 (.439)	-.280 (.721)	-.067 (.439)	-.254 (.721)
Dependent								
Com_Lt	.091 (.080)	.101 (.130)	.205*** (.062)	.379 (.101)	.132 (.126)	.169 (.207)	.221*** (.062)	.385*** (.102)
Com_St	.885*** (.184)	1.199*** (.299)	.837*** (.252)	.860** (.409)	.901*** (.187)	1.239*** (.306)	.314 (.338)	.187 (.637)
Moderator								
Functional								
Industrial								
TMT_Fd								
TMT_Tenure								
TMT_Mr					.129** (.065)	.232** (.107)	-.297 (.269)	-.502 (.442)
CEO_Fd								
CEO_Tenure								
CEO_ Mr	.036* (.023)	.070** (.038)	.056 (.076)	.017 (.124)				
CEO_Power								
Interaction								
Lt* TMT_Mr					.021 (.029)	.057 (.047)		
St* TMT_Mr							.151** (.087)	.272** (.142)
Lt* CEO_ Mr	.020** (.009)	.047*** (.015)						
St* CEO_ Mr			.007 (.023)	.047 (.038)				
R	.345	.383	.337	.369	.313	.323	.318	.327
R^2	.119	.147	.114	.136	.098	.104	.101	.107
R^2 Change	.006	.012	.000	.002	.001	.002	.004	.004

Table 7. Results of regression analysis: Moderation effect of CEO Power.

	Model 20		Model 21	
	(1)	*(2)*	*(1)*	*(2)*
Control				
Perform	431* (.285)	1.101*** (.470)	.436* (.285)	1.110*** (.470)
Industry_d1	-.252 (.444)	-.386 (.735)	-.251 (.444)	-.388 (.734)
Industry_d2	-.080 (.443)	-.263 (.732)	-.084 (.443)	-.271 (.732)
Dependent				
Com_Lt	.214*** (.063)	.397*** (.104)	.206*** (.063)	.385*** (.105)
Com_St	.949*** (.190)	1.351*** (.315)	1.035*** (.198)	1.469*** (.327)
Moderator				
Functional				
Industrial				
TMT_Fd				
TMT_Tenure				
TMT_Mr				
CEO_Fd				
CEO_Tenure				
CEO_ Mr				
CEO_Power	-.007 (.009)	-.006 (.014)	-.008 (.009)	-.008 (.014)
Interaction				
Lt* CEO_Power	-.010** (.006)	-.012 (.010)		
St* CEO_Power			-.022** (.012)	-.030* (.020)
R	.288	.227	.289	.279
R^2	.083	.077	.084	.078
R^2 Change	.004	.002	.004	.003

4.3. Testing Hypothesis 2a

Models 4 to 7 examine Hypothesis 2a by including interaction terms for compensation and TMT diversity. The results are as follows:

Functional Diversity: The interaction of long-term compensation and functional diversity has a coefficient of 0.684 on exploration and 0.800 on exploitation, but neither is statistically significant.

In contrast, the interaction of short-term compensation and functional diversity yields coefficients of 4.140 on exploration and 5.284 on exploitation, both of which are statistically significant ($p < 0.05$). These findings suggest that TMT functional diversity moderates the relationship between short-term compensation and exploitation but does not significantly influence the relationship between long-term compensation and exploration.

Industrial Diversity: The interaction of long-term compensation and industrial diversity shows positive and statistically significant coefficients of 0.807 ($p < 0.05$) for exploration and 1.213 ($p < 0.05$) for exploitation. The interaction of short-term compensation and industrial diversity results in a coefficient of 1.315 for exploration (not significant) and 4.930 for exploitation ($p < 0.05$). These results indicate that TMT industrial diversity plays a significant moderating role in both long-term compensation and exploration, as well as short-term compensation and exploitation. Additionally, the moderating effect of TMT industrial diversity aligns more closely with theoretical expectations compared to TMT functional diversity.

TMT Diversity and Hypothesis Support: TMT diversity supports the hypothesis of a positive moderating effect on short-term compensation and exploitation. However, the moderating effect on long-term compensation and exploration is not supported by functional diversity. TMT industrial diversity appears more effective in analyzing and processing information from diverse environments, thereby better promoting internationalization compared to functional diversity.

To gain a clearer understanding of the interactions, Figures 2 and 3 illustrate the slopes of the interaction terms. The slopes for high TMT industrial diversity are steeper than those for low TMT industrial diversity in the positive relationships between short-term compensation and exploitation and long-term compensation and exploration. These results confirm that higher TMT industrial diversity strengthens the positive relationships proposed in Hypothesis 1.

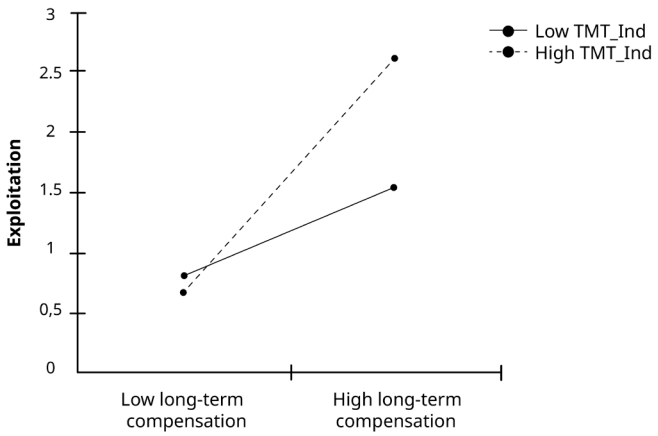

Figure 2. Long-term compensation and exploitation: Moderated by TMT Industrial diversity.

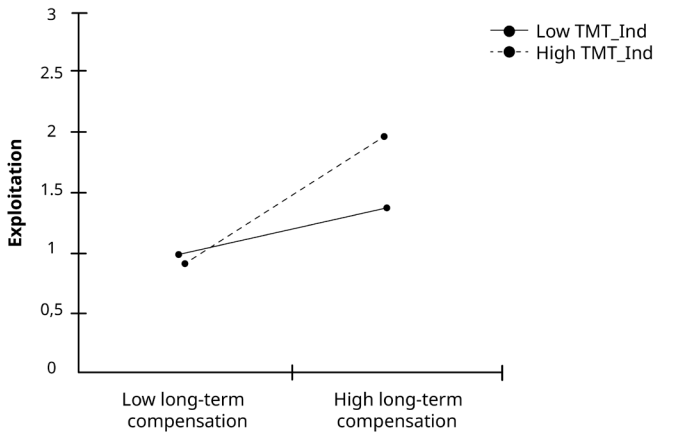

Figure 3. Long-term compensation and exploration: Moderated by TMT Industrial diversity.

4.4. Testing hypotheses H2b and H3b

Models 8 to 11 evaluate Hypotheses H2b and H3b, incorporating the interaction between compensation and the foreign experience of executives (TMT and CEO). The findings are summarized as follows:

TMT Foreign Degree (TMT_Fd): The interaction coefficient between long-term compensation and TMT foreign degree on exploration is 0.740, which is statistically significant ($p < 0.05$). The interaction coefficient between short-term compensation and TMT foreign degree on exploitation is 3.366, which is also statistically significant ($p < 0.05$). These results indicate that TMT foreign degree supports the expected hypotheses by moderating the relationship between compensation and firm internationalization.

CEO Foreign Degree (CEO_Fd): The interaction coefficient between long-term compensation and CEO foreign degree on exploration is 0.205, which is statistically significant ($p < 0.1$). The interaction coefficient between short-term compensation and CEO foreign degree on exploitation is 0.885, which is also statistically significant ($p < 0.1$). These findings suggest that CEO foreign degree also aligns with the hypotheses, indicating a positive moderating effect on the relationship between compensation and firm internationalization.

The moderating effect of TMT foreign degree on the relationship between compensation and firm internationalization is more pronounced than that of CEO foreign degree. These results reinforce the notion that the collective international experience of TMT provides a stronger influence on firm internationalization strategies compared to the foreign experience of the CEO alone.

4.5. Testing hypotheses H2b and H3b

Models 12 to 15 explore the interaction between compensation and tenure (both TMT and CEO) in relation to firm internationalization, testing Hypotheses H2b and H3b. The results are summarized as follows:

TMT Tenure (TMT_Tenure): The interaction coefficient between long-term compensation and TMT tenure on exploration is 0.012 but not statistically significant.

The interaction coefficient between short-term compensation and TMT tenure on exploitation is 0.095, which is statistically significant ($p < 0.1$). These results suggest that TMT tenure moderates the relationship between short-term compensation and exploitation but does not influence the relationship between long-term compensation and exploration.

CEO Tenure (CEO_Tenure): The interaction coefficients for CEO tenure on both compensation types and firm internationalization are not statistically significant (0.443, $p > 0.1$ for long-term compensation and exploration; 0.025, $p > 0.1$ for short-term compensation and exploitation). This indicates that CEO tenure does not moderate the relationship between compensation and firm internationalization.

The moderating role of TMT tenure is limited to short-term compensation and exploitation, while no significant effect is observed for long-term compensation and exploration. CEO tenure shows no significant impact on the relationship between compensation and firm internationalization. Overall, the effect of tenure as a moderator between compensation and firm internationalization appears to be limited and does not provide strong support for the hypothesis.

4.6. Testing hypotheses H2b and H3b

Models 16 to 19 examine the multiple roles of executive experience by adding the interaction of compensation and multiple roles, as outlined in Hypotheses H2b and H3b. The results are as follows:

TMT Multiple Roles (TMT_Mr): The interaction coefficient between long-term compensation and TMT multiple roles on exploration is 0.021, which is not statistically significant. The interaction coefficient between short-term compensation and TMT multiple roles on exploration is 0.272, which is statistically significant ($p < 0.05$). These results suggest that TMT multiple roles moderates the relationship between short-term compensation and exploitation, but not between long-term compensation and exploration.

CEO Multiple Roles (CEO_Mr): The interaction coefficient between long-term compensation and CEO multiple roles on exploration is 0.020, which is statistically significant ($p < 0.05$). The interaction coefficient between short-term compensation and CEO multiple roles on exploitation is 0.047, but is not statistically significant. These findings suggest that CEO multiple roles are more effective in moderating the relationship between long-term compensation and exploration, while no significant effect is found for short-term compensation and exploitation.

TMT multiple roles appear to be more influential in moderating the relationship between short-term compensation and exploitation, indicating that TMT's diverse experience may better support expansion based on existing resources. CEO multiple roles have a significant moderating effect on the relationship between long-term compensation and exploration, suggesting that CEOs with diverse experience are more likely to drive the firm's decision to enter new international markets. The contrasting effects of TMT and CEO multiple roles highlight the importance of different roles at different levels of the organization in shaping a firm's internationalization strategy.

4.7. Testing hypothesis 3a

Models 20 and 21 test Hypothesis 3a by incorporating the interaction between compensation and CEO power (CEO_Power). The results are summarized as follows:

Long-term Compensation and CEO Power: The interaction coefficient between long-term compensation and CEO power on exploration is -0.010, which is statistically significant ($p < 0.01$). The interaction coefficient between long-term compensation and CEO power on exploitation is -0.012, but not statistically significant. These findings suggest that CEO power negatively moderates the relationship between long-term compensation and exploration, meaning that higher CEO power may weaken the firm's decision to explore new markets when long-term compensation is high.

Short-term Compensation and CEO Power: The interaction coefficient between short-term compensation and CEO power on exploration is -0.002, and on exploitation is -0.030, with both coefficients being statistically significant ($p < 0.01$ and $p < 0.05$, respectively). These results indicate that CEO power negatively moderates the relationship between compensation and internationalization, both for exploration and exploitation.

CEO power has a negative moderating effect on the relationship between compensation and internationalization, supporting Hypothesis 3a. The findings suggest that higher CEO power weakens the positive relationship between compensation and internationalization—particularly for short-term compensation and exploitation, as well as long-term compensation and exploration. The moderated interaction plots in Figures 4 and 5 illustrate that the slope of the positive relationship between short-term compensation and exploitation, as well as long-term compensation and exploration, is smaller for high CEO power compared to low CEO power, confirming that CEO power weakens the positive relationship as hypothesized.

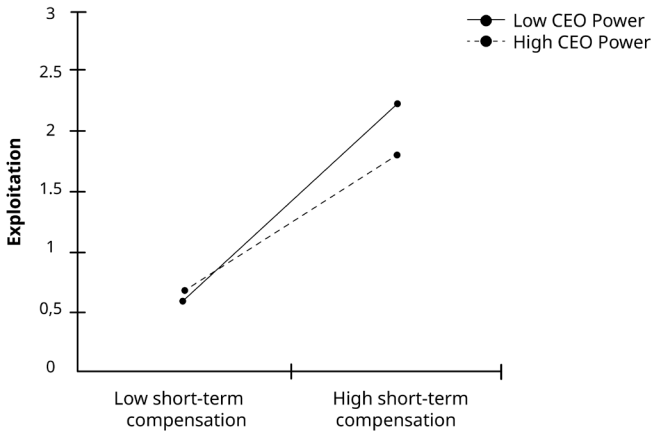

Figure 4. Short-term compensation and exploitation: Moderated by CEO Power.

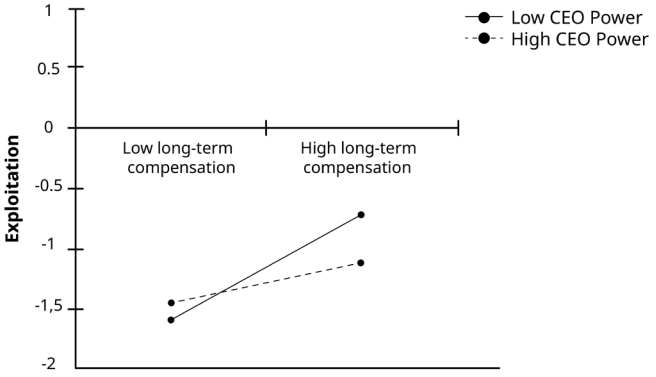

Figure 5. Long-term compensation and exploration: Moderated by CEO Power.

5. Discussion and Conclusions

5.1. Research findings and theoretical contributions

This study aims to explore the impact of incentives of long-term and short-term compensation on firms' international expansion strategies, with a focus on the moderating roles of leadership structures including TMT experience, TMT diversity, CEO experience, and CEO power. Using data from Taiwanese technology and communications companies (2021–2022), the results demonstrate that short-term compensation–exploitation and long-term compensation–exploration are positively related. Additionally, the study finds significant moderating effects of TMT industrial diversity and CEO power, which support the hypotheses. On the other hand, TMT and CEO experience and TMT functional diversity provide partial support.

The findings indicate that, in line with Adner and Helfat (2003) and Chen and Liu (2021), TMT industrial diversity strengthens the relationship between compensation and internationalization. The diverse social relationships embedded wi-

thin industries can enhance knowledge transfer and facilitate decision-making across environments. This result aligns with the notion that functional diversity, while shaping decisions about strategies and events, plays a more prominent role in short-term compensation and exploitation, as opposed to long-term compensation and exploration. The complexity of entering a new market (exploration) may not be adequately supported by functional diversity compared to the more focused nature of exploitation strategies.

Regarding TMT experience, the study supports the significant moderating role of TMT foreign degree in both short-term compensation and exploitation, and long-term compensation and exploration. The positive moderating effect of foreign degree aligns with research by Cao et al. (2009) and Herrmann & Datta (2002), suggesting that international experience and knowledge gained from foreign education improve firms' capabilities in managing complex business environments, making them more confident in navigating foreign markets. CEO foreign degree also shows a significant moderating effect in line with expectations.

In terms of TMT tenure, the study reveals no strong evidence to support its moderating role, which is consistent with other studies (e.g., Tihanyi et al., 2000; Michel & Hambrick, 1992), suggesting that tenure does not significantly influence the relationship between compensation and internationalization. Similarly, CEO tenure did not show significant effects, suggesting that the moderating role of tenure is less impactful.

Turning to the role of multiple roles in the experience variable, TMT multiple roles positively moderates the relationship between short-term compensation and exploitation, but not between long-term compensation and exploration. This contrasts with CEO multiple roles, which positively moderates the relationship between long-term compensation and exploration but does not significantly affect short-term compensation and exploitation. CEOs holding multiple roles may gain broader insights that support long-term strategic development (Finkelstein, 1992).

In contrast, TMT members' diverse roles may hinder long-term strategy development due to the difficulty in integrating varied perspectives.

The findings suggest that TMT experience plays a more significant moderating role than CEO experience, aligning with Herrmann and Datta (2006), who argue that CEOs have a disproportionate influence on decisions but not necessarily on the entire strategic decision-making process, which often involves multiple team members. The evidence shows that TMT experience is more influential in short-term compensation and exploitation, while CEO experience tends to be more relevant in long-term compensation and exploration, providing a clearer distinction in decision-making insights.

Finally, the study confirms that CEO power negatively moderates the relationship between compensation and internationalization, supporting Hypothesis 3a. As Sanders (2001) and Liu et al. (2011) suggest, powerful CEOs may focus on minimizing risks rather than maximizing gains, which explains their reluctance to engage in high-risk international investments. The findings indicate that firms with powerful CEOs may limit their expansion activities due to a heightened concern for potential losses.

Overall, the results contribute to a deeper understanding of how leadership characteristics including TMT and CEO interact with incentive compensation to influence a firm's international expansion strategies. The findings also emphasize that firms must carefully consider not only the compensation strategy but also the experiences and diverse roles of top executives when making international expansion decisions.

5.2. Discussion

This study examines two international expansion strategies (dependent variables): Exploration and exploitation. From the empirical results, while the relationships between the independent variables and their respective dependent variables align with the hypothesized expectations in Hypothesis 1, the differences between the two are not particularly pronounced. Specifically, long-term compensation has a positive and significant effect on both exploration and exploitation, though the strength of the relationship differs.

Overall, the findings suggest that short-term compensation has a greater impact on both exploitation and exploration strategies compared to long-term compensation. One possible explanation is that long-term compensation, which is often tied to stock dividends, tends to be more volatile and is influenced by fluctuations in a firm's stock performance. In contrast, short-term compensation, such as fixed salaries or bonuses, provides more immediate and stable incentives, thereby exerting a stronger influence on strategic decision-making.

When introducing moderating variables, the results highlight that TMT-related factors have a stronger influence on the relationship between short-term compensation and exploitation, whereas CEO-related factors are more supportive of the relationship between long-term compensation and exploration. These results underline the distinct roles played by TMT and CEOs in shaping firm strategies, with TMT members being more instrumental in leveraging existing resources for short-term gains and CEOs taking the lead in fostering long-term international expansion.

While it is widely acknowledged that firms must engage in both exploitation and exploration to achieve sustainable development and remain competitive in global markets (Luo et al., 2018), this study focuses on the one-way effects of compensation strategies. It does not examine the potential effects of long-term compensation on exploitation or short-term compensation on Exploration. Ideally, these relationships would yield negative or insignificant results, which would further strengthen the theoretical distinction between

the roles of long-term and short-term compensation in international expansion strategies.

To address these gaps and enhance the clarity of the findings, future research is encouraged to explore the following: (1) Bidirectional Effects: Investigate the effects of long-term compensation on exploitation and short-term compensation on exploration to provide a more comprehensive understanding of how different forms of compensation influence firm strategies. (2) Dynamic Interactions: Consider how compensation structures and moderating variables evolve over time and their potential dynamic effects on exploration and exploitation. (3) Industry Contexts: Expand the research to other industries beyond technology and communications to validate the generalizability of the findings. (4) Qualitative Insights: Incorporate qualitative methods, such as case studies or interviews, to complement quantitative results and provide deeper insights into how executives perceive and respond to compensation incentives. By addressing these suggestions, future studies can contribute to a more nuanced understanding of the relationship between compensation, moderating variables, and firms' international expansion strategies.

5.3. Research limitations and future research direction

The purpose of this study is to examine the effects of long-term and short-term compensation on firms' choices between international exploration and exploitation strategies. While the hypotheses regarding the main effects of compensation are empirically supported, the hypotheses concerning the moderating variables are only partially supported. This highlights a key limitation of the study, which warrants further in-depth exploration in future research.

This study investigates how TMT compensation, as an incentive tool, influences firms' international expansion strategies by categorizing compensation into long-term and short-term components. By incorporating upper echelon theory, this study also examines the moderating effects of executive characteristics using demographically relevant variables, enriching the understanding of the factors influencing firms' strategic decisions in internationalization. Unlike prior studies that often focus solely on either compensation or demographic variables, this research integrates both perspectives, providing a more comprehensive analysis.

In doing so, this study sheds light on how firms can design long-term and short-term compensation systems to align with explorative or exploitative strategic goals. However, certain limitations must be acknowledged: (1) Moderating Variables: Although this study highlights the influence of executive characteristics as moderators, the partial support for these hypotheses suggests that other unexamined variables, such as cultural, institutional, or industry-specific factors, may also play a significant role. Future research should incorporate these factors to develop a more holistic framework. (2) Dynamic Perspectives: This study adopts a static approach to analyze compensation and strategic outcomes. Future research could explore how the effects of compensation and moderating variables evolve over time, particularly in response to changes in the external environment or firm performance. By addressing these limitations, future research can provide more robust insights into how firms can leverage compensation systems and executive characteristics to navigate the complexities of international exploration and exploitation strategies.

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