

CONTROLLING SHAREHOLDINGS,
INTELLECTUAL CAPITAL AND FIRM
PERFORMANCE: EVIDENCE FROM
MALAYSIAN LISTED FIRMS

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DOCTOR OF PHILOSOPHY

UNIVERSITI MALAYSIA PAHANG

SUPERVISOR'S DECLARATION

We hereby declare that we have checked this thesis and in our opinion, this thesis is adequate in terms of scope and quality for the award of the degree of Doctor of Philosophy.



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STUDENT'S DECLARATION

I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

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ABSTRAK

Tesis ini mengkaji bagaimana mengawal pegangan saham mempengaruhi kecekapan pelaburan IC. Selain itu, walaupun IC itu bermanfaat untuk firma, terdapat keperluan untuk mengenal pasti tahap kritikal pelaburan IC. Untuk mengenal pasti jurang ini, tesis ini mengkaji hubungan tak linear antara pelaburan IC dan prestasi firma. Akhirnya, pemegang saham yang mengawal sebagai pemain tadbir urus yang kukuh mempunyai keupayaan untuk menyederhanakan hubungan antara pelaburan IC dan prestasi firma. Untuk menghubungkan perkara ini di bawah bidang yang dikaji dalam mengawal pegangan saham, pelaburan IC dan prestasi firma, tesis ini mendapatkan data daripada Papan Utama Bursa Malaysia untuk tempoh sepuluh tahun dari 2009—2018 untuk 733 firma tersenarai awam Malaysia. Tesis ini menggunakan pendekatan regresi data panel untuk menganalisis hubungan hipotesis. Tesis ini juga memberikan keteguhan menggunakan dua peringkat kuasa dua terkecil dan proksi alternatif pembolehubah. Penemuan utama mendedahkan bahawa mengawal pegangan saham mempunyai hubungan tidak linear (berbentuk U songsang) dengan kecekapan pelaburan IC. Iaitu, pemegang saham mengawal yang mempunyai tahap pemilikan yang rendah (tinggi) meningkatkan (menurun) kecekapan pelaburan IC. Selain itu, penemuan menunjukkan bahawa pelaburan IC mempunyai hubungan tidak linear (berbentuk U songsang) dengan prestasi firma. Iaitu, pelaburan yang berlebihan dalam pelaburan IC adalah berbahaya dan bukannya berfaedah. Akhirnya, penemuan menunjukkan bahawa pemegang saham yang mengawal menyederhanakan (positif atau negatif) hubungan antara pelaburan IC dan prestasi firma. Penemuan ini menunjukkan bahawa pemegang saham yang mengawal mempengaruhi dalam dua ramalan teori yang bersaing mengenai kesan penjajaran dan kesan entrenchment. Tesis ini mengesyorkan bahawa Malaysia demi nilai modal yang lebih tinggi harus memberi tumpuan kepada pengurusan kecekapan pelaburan IC. Penemuan tesis ini bermanfaat untuk pembuat dasar, pengurus (pengurus IC dan pengurus HC) dan penyelidik masa depan.

ABSTRACT

This thesis examines how controlling shareholdings affect the efficiency of IC investments. Additionally, despite that IC is beneficial for firms, there is need to identify critical levels of IC investments. To identify this gap, this thesis examines the nonlinear relationship between IC investments and firm performance. At last, controlling shareholders as strong governance players have the ability to moderate the relationship between IC investments and firm performance. To connect these under researched areas of controlling shareholdings, IC investments and firm performance, this thesis retrieves data from Main Board of Bursa Malaysia for the period of ten years from 2009—2018 for 733 Malaysian public listed firms. This thesis utilize panel data regression approach to analyse the hypothesized relationships. This thesis also provide robustness using two-stage least square and alternative proxies of variables. The major findings reveals that controlling shareholdings have a non-linear (inverse *U*-shaped) relationship with efficiency of IC investments. That is, controlling shareholders having low (high) level of ownership increase (decrease) the efficiency of IC investments. Additionally, findings suggests that IC investments have non-linear (inverse *U*-shaped) relationship with firm performance. That is, excessive investments in IC investments are harmful rather than beneficial. At last, findings indicate that controlling shareholders moderate (positive or negative) the relationship between IC investments and firm performance. These findings indicate that controlling shareholders affect in two competing theoretical predictions of alignment effects and entrenchment effects. This thesis recommends that Malaysia for the sake of higher capital values should focus on managing the efficiency of IC investments. The findings of this thesis are fruitful for policy makers, managers (IC managers and HC managers) and future researchers.

TABLE OF CONTENT

DECLARATION	
TITLE PAGE	
ACKNOWLEDGEMENTS	ii
ABSTRAK	iii
ABSTRACT	iv
TABLE OF CONTENT	v
LIST OF TABLES	xi
LIST OF FIGURES	xiii
LIST OF SYMBOLS	xiv
LIST OF ABBREVIATIONS	xv
CHAPTER 1 INTRODUCTION	1
1.1 Overview	1
1.2 Background of the Study	1
1.3 Problem Statement	5
1.4 Motivation of the study	9
1.5 Research Questions	11
1.6 Research Objectives	13
1.7 Significances of the Study	14
1.7.1 Theoretical Contribution	15
1.7.2 Methodological Contribution	17
1.7.3 Managerial Contribution	18
1.8 Definitions of Terms	20
1.8.1 Controlling Shareholdings	20
1.8.2 Intellectual Capital (IC)	20

1.8.3	Human Capital (HC)	20
1.8.4	Structural Capital (SC)	20
1.8.5	Capital Employed (CE)	21
1.8.6	Firm Performance	21
1.8.7	Malaysian Public Listed Companies	21
1.9	Scope of the Study	21
1.10	Organisation of the Thesis	21
1.11	Summary of the Chapter	22
CHAPTER 2 REVIEW AND HYPOTHESES DEVELOPMENT		23
2.1	Introduction	23
2.2	Overview of Malaysian Public Listed Companies	24
2.3	Overview of IC	27
2.4	Underlying Theories of the Study	31
2.4.1	Agency Theory	32
2.4.2	Resource-Based View	37
2.4.3	Production Theory	39
2.5	Value Added Intellectual Coefficient (VAIC™) Model	41
2.6	Previous Studies and Hypotheses Development	45
2.6.1	Controlling Shareholdings and Intellectual Capital	45
2.6.2	Intellectual Capital and Firm Performance	63
2.6.3	Controlling Shareholdings as Moderator between the Relationship of Intellectual Capital and Firm Performance	74
2.7	Conceptual Framework	92
2.8	Gaps of the Study	94
2.9	Chapter Summary	97

CHAPTER 3 DATA AND METHODOLOGY	98
3.1 Introduction	98
3.2 Sample and Sources of Data	99
3.3 Research Design	102
3.4 Descriptive Statistics	103
3.5 Test of Difference	103
3.6 Correlation Test	103
3.7 Regression Diagnostic Tests	104
3.7.1 Regression Assumptions	104
3.8 Model Selection Tests	106
3.8.1 Breuch-Godfrey Serial Correlation LM Test	106
3.8.2 Hausman Test	107
3.9 Difference between Pooled OLS regression and Panel Regression	107
3.10 Research Question part-I	108
3.10.1 Research Framework	108
3.10.2 Variables	109
3.10.3 Regression Models	114
3.11 Research Question Part-II	117
3.11.1 Research Framework	117
3.11.2 Variables	118
3.11.3 Regression Models	122
3.12 Research Question Part-III	124
3.12.1 Research Framework	124
3.12.2 Regression Models	126
3.13 Robustness	128
3.14 SUMMARY OF THE CHAPTER	128

CHAPTER 4 RESULTS AND DISCUSSION	129
4.1 Introduction	129
4.2 Descriptive Statistics	130
4.3 Test of Difference in Variables	136
4.4 Correlation Analysis	139
4.5 Diagnostic Tests	141
4.5.1 Outliers	142
4.5.2 Heteroscedasticity	142
4.5.3 Multi-collinearity	143
4.5.4 Autocorrelation	146
4.5.5 Hausman Test	147
4.6 Regression Analysis	148
4.6.1 Objective 1: Non-linear Association between Controlling Shareholdings and IC Investments	148
4.6.2 Objective 2: Non-linear Association between IC Investments and Firm Performance	157
4.6.3 Objective 3: Moderating Effect of Controlling Shareholdings between the Relationship of IC Investments and Firm Performance	167
4.7 Additional Analysis	181
4.7.1 Moderating Effect of Controlling Shareholdings between Linear IC Investments and Firm Performance by Grouping (DV-ROA)	182
4.7.2 Moderating Effect of Controlling Shareholdings between Non-linear IC Investments and Firm Performance by Grouping (DV=ROA)	185
4.7.3 Moderating Effect of Controlling Shareholdings between Linear IC Investments and Firm Performance by Grouping (DV-ROE)	188

4.7.4	Moderating Effect of Controlling Shareholdings between Non-linear IC Investments and Firm Performance by Grouping (DV=ROE)	190
4.7.5	Moderating Effect of Controlling Shareholdings between Linear IC Investments and Firm Performance by Grouping (DV-Tobin's Q)	192
4.7.6	Moderating Effect of Controlling Shareholdings between Non-linear IC Investments and Firm Performance by Grouping (DV=Tobin's Q)	195
4.8	Robustness	197
4.8.1	Two Stage Least Square (2SLS)	197
4.8.2	Robustness of Non-linear Results	201
4.9	Conclusion	202
CHAPTER 5 DISCUSSION, IMPLICATIONS AND CONCLUSION		203
5.1	Introduction	203
5.2	Discussion of Findings	204
5.2.1	Objective 1: Non-linear Association between Controlling Shareholdings and IC Investments	206
5.2.2	Objective 2: Non-linear Association between IC investments and Firm Performance	211
5.2.3	Objective 3: Moderating Effect of Controlling Shareholdings between IC Investments and Firm Performance	216
5.3	Summary of Research Hypotheses	222
5.4	Significant Implications of Research	223
5.4.1	Theoretical Implications	223
5.4.2	Methodological Implications	225
5.4.3	Managerial Implications	225

5.5	Limitations of the Research	226
5.6	Future Research Directions	227
5.7	Conclusion	228
	REFERENCES	233
	LIST OF PUBLICATIONS	258
	LIST OF CONFERENCES	260
	APPENDIX A: LIST OF COMPANIES	262
	APPENDIX B: OUTPUT OF SOFTWARE ANALYSIS	280
	APPENDIX C: TRENDS OF MEANS OF CS5, VAIC, HCE, SCE, CEE AND FIRM PERFORMANCE FOR THE PERIOD OF 2009-2018	348

REFERENCES

- Abdullah, S. N. (2006). Board structure and ownership in Malaysia: The case of distressed listed companies. *Corporate Governance*, 6(5), 582-594.
- Adelino, M., Ma, S., & Robinson, D. (2017). Firm age, investment opportunities, and job creation. *The journal of finance*, 72(3), 999-1038.
- Aguilera, R. V., & Crespi-Cladera, R. (2016). Global corporate governance: On the relevance of firms' ownership structure. *Journal of World Business*, 51(1), 50-57.
- Aguinis, H., Gottfredson, R. K., & Joo, H. (2013). Best-practice recommendations for defining, identifying, and handling outliers. *Organizational Research Methods*, 16(2), 270-301.
- Ahmed, S. S., Guozhu, J., Mubarik, S., Khan, M., & Khan, E. (2020). Intellectual capital and business performance: the role of dimensions of absorptive capacity. *Journal of Intellectual Capital*, 21(1), 23-39.
- Al-Musalli, M. A. K., & Ismail, K. N. I. K. (2012). Intellectual capital performance and board characteristics of GCC banks. *Procedia Economics and Finance*, 2, 219-226.
- Al-Sartawi, A. M. M. (2018). Ownership structure and intellectual capital: evidence from the GCC countries. *International Journal of Learning and Intellectual Capital*, 15(3), 277-291.
- Anderson, M. H., & Prezas, A. P. (1999). Intangible investment, debt financing and managerial incentives. *Journal of Economics and Business*, 51(1), 3-19.
- Anderson, R. C., Duru, A., & Reeb, D. M. (2012). Investment policy in family controlled firms. *Journal of Banking & Finance*, 36(6), 1744-1758.
- Anderson, R. C., Mansi, S. A., & Reeb, D. M. (2003). Founding family ownership and the agency cost of debt. *Journal of financial Economics*, 68(2), 263-285.
- Anderson, R. C., & Reeb, D. M. (2003). Founding - family ownership and firm performance: evidence from the S&P 500. *The journal of finance*, 58(3), 1301-1328.

- Andres, C. (2008). Large shareholders and firm performance—An empirical examination of founding-family ownership. *Journal of Corporate Finance*, 14(4), 431-445.
- Ang, J. B., & McKibbin, W. J. (2007). Financial liberalization, financial sector development and growth: evidence from Malaysia. *Journal of development economics*, 84(1), 215-233.
- Anifowose, M., Abdul Rashid, H. M., Annuar, H. A., & Ibrahim, H. (2018). Intellectual capital efficiency and corporate book value: evidence from Nigerian economy. *Journal of Intellectual Capital*, 19(3), 644-668.
- Annuar, H. A. (2015). Changes in ownership forms and role of institutional investors in governing public companies in Malaysia. *Journal of Accounting & Organizational Change*, 11(4), 455-475.
- Appuhami, R., & Bhuyan, M. (2015). Examining the influence of corporate governance on intellectual capital efficiency: Evidence from top service firms in Australia. *Managerial Auditing Journal*, 30(4/5), 347-372.
- Ariff, A. H. M., Islam, A., & van Zijl, T. (2016). Intellectual capital and market performance: The case of multinational R&D firms in the US. *The journal of developing areas*, 50(5), 487-495.
- Asanga Abhayawansa, S. (2014). A review of guidelines and frameworks on external reporting of intellectual capital. *Journal of Intellectual Capital*, 15(1), 100-141.
- Asiaei, K., Jusoh, R., & Bontis, N. (2018). Intellectual capital and performance measurement systems in Iran. *Journal of Intellectual Capital*, 19(2), 294-320.
- Asif, J., Ting, I. W. K., & Kweh, Q. L. (2020). Intellectual Capital Investment and Firm Performance of the Malaysian Energy Sector: A New Perspective from a Nonlinearity Test. *Energy RESEARCH LETTERS*, 1(2).
- Atan, R., Alam, M. M., Said, J., & Zamri, M. (2018). The impacts of environmental, social, and governance factors on firm performance. *Management of Environmental Quality*, 29(2), 182-194.
- Azila-Gbetteor, E. M., Honyenuga, B. Q., Berent-Braun, M. M., & Kil, A. (2018). Structural aspects of corporate governance and family firm performance: a systematic review. *Journal of Family Business Management*, 8(3), 306-330.

- Babajee, R. B., Seetanah, B., & Nunkoo, R. (2020). The determinants of hotel financial performance: an intellectual capital perspective. *Journal of Hospitality Marketing & Management*, 29(8), 1008-1026.
- Banerjee, S., & Homroy, S. (2018). Managerial incentives and strategic choices of firms with different ownership structures. *Journal of Corporate Finance*, 48, 314-330.
- Bany-Arifin, A., Nor, F. M., & McGowan Jr, C. B. (2010). Pyramidal structure, firm capital structure exploitation and ultimate owners' dominance. *International Review of Financial Analysis*, 19(3), 151-164.
- Barnea, A., & Rubin, A. (2010). Corporate social responsibility as a conflict between shareholders. *Journal of business ethics*, 97(1), 71-86.
- Barnett, T., & Kellermanns, F. W. (2006). Are we family and are we treated as family? Nonfamily employees' perceptions of justice in the family firm. *Entrepreneurship Theory and Practice*, 30(6), 837-854.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, 17(1), 99-120.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173.
- Bart, C., & Bontis, N. (2003). Distinguishing between the board and management in company mission: Implications for corporate governance. *Journal of Intellectual Capital*, 4(3), 361-381.
- Bayraktaroglu, A. E., Calisir, F., & Baskak, M. (2019). Intellectual capital and firm performance: an extended VAIC model. *Journal of Intellectual Capital*, 20(3), 406-425.
- Bebchuk, L. A., & Stole, L. A. (1993). Do short - term objectives lead to under - or overinvestment in long - term projects? *The journal of finance*, 48(2), 719-729.
- Becht, M., & Röell, A. (1999). Blockholdings in Europe: An international comparison. *European Economic Review*, 43(4-6), 1049-1056.
- Belsley, D. A. (1982). Assessing the presence of harmful collinearity and other forms of weak data through a test for signal-to-noise. *Journal of econometrics*, 20(2), 211-253.

- Bendickson, J., Muldoon, J., Liguori, E., & Davis, P. E. (2016). Agency theory: the times, they are a-changin'. *Management decision*, 54(1), 174-193.
- Benjamin, S. J., Wasiuzzaman, S., Mokhtarinia, H., & Nejad, N. R. (2016). Family ownership and dividend payout in Malaysia. *International Journal of Managerial Finance*, 12(3), 314-334.
- Bennedsen, M., & Foss, N. (2015). Family assets and liabilities in the innovation process. *California Management Review*, 58(1), 65-81.
- Berrone, P., Cruz, C., & Gomez-Mejia, L. R. (2012). Socioemotional wealth in family firms: Theoretical dimensions, assessment approaches, and agenda for future research. *Family business review*, 25(3), 258-279.
- Bertrand, M., Mehta, P., & Mullainathan, S. (2002). Ferreting out tunneling: An application to Indian business groups. *The Quarterly Journal of Economics*, 117(1), 121-148.
- Bharadwaj, A. S., Bharadwaj, S. G., & Konsynski, B. R. (1999). Information technology effects on firm performance as measured by Tobin's q. *Management science*, 45(7), 1008-1024.
- Bhatt, R. R., & Bhattacharya, S. (2017). Family firms, board structure and firm performance: evidence from top Indian firms. *International Journal of Law and Management*, 59(5), 699-717.
- Blanco-Alcántara, D., Díez-Esteban, J. M., & Romero-Merino, M. E. (2019). Board networks as a source of intellectual capital for companies. *Management decision*, 57(10), 2653-2671.
- Bona-Sánchez, C., Fernández-Senra, C. L., & Pérez-Alemán, J. (2017). Related-party transactions, dominant owners and firm value. *BRQ Business Research Quarterly*, 20(1), 4-17.
- Bongiovanni, I., Renaud, K., & Cairns, G. (2020). Securing intellectual capital: an exploratory study in Australian universities. *Journal of Intellectual Capital*, 21(3), 481-505.
- Bontis, N. (1998). Intellectual capital: an exploratory study that develops measures and models. *Management decision*, 36(2), 63-76.
- Bontis, N. (2004). National intellectual capital index: A United Nations initiative for the Arab region. *Journal of Intellectual Capital*, 5(1), 13-39.

- Bontis, N., Ciambotti, M., Palazzi, F., & Sgro, F. (2018). Intellectual capital and financial performance in social cooperative enterprises. *Journal of Intellectual Capital*, 19(4), 712-731.
- Bontis, N., Dragonetti, N. C., Jacobsen, K., & Roos, G. (1999). The knowledge toolbox:: A review of the tools available to measure and manage intangible resources. *European management journal*, 17(4), 391-402.
- Bontis, N., Janošević, S., & Dženopoljac, V. (2015). Intellectual capital in Serbia's hotel industry. *International Journal of Contemporary Hospitality Management*, 27(6), 1365-1384.
- Bontis, N., Keow, W. C. C., & Richardson, S. (2000). Intellectual capital and business performance in Malaysian industries. *Journal of Intellectual Capital*, 1(1), 85-100.
- Breusch, T. S., & Pagan, A. R. (1980). The Lagrange multiplier test and its applications to model specification in econometrics. *The review of economic studies*, 47(1), 239-253.
- Britto, D. P., Monetti, E., & da Rocha Lima Jr, J. (2014). Intellectual capital in tangible intensive firms: the case of Brazilian real estate companies. *Journal of Intellectual Capital*, 15(2), 333-348.
- Brown, P., Beekes, W., & Verhoeven, P. (2011). Corporate governance, accounting and finance: A review. *Accounting & finance*, 51(1), 96-172.
- Buallay, A., Hamdan, A. M., Reyad, S., Badawi, S., & Madbouly, A. (2020). The efficiency of GCC banks: the role of intellectual capital. *European Business Review*, 32(3), 383-404.
- Buallay, A. M. (2017). The relationship between intellectual capital and firm performance. *Corporate Governance and Organizational Behavior Review*, 1(1), 32-41.
- Cabrilo, S., Kianto, A., & Milic, B. (2018). The effect of IC components on innovation performance in Serbian companies. *VINE Journal of Information and Knowledge Management Systems*, 48(3), 448-466.
- Cabrita, M. d. R., & Bontis, N. (2008). Intellectual capital and business performance in the Portuguese banking industry. *International Journal of Technology Management*, 43(1-3), 212-237.

- Calabrese, A., Costa, R., & Menichini, T. (2013). Using Fuzzy AHP to manage Intellectual Capital assets: An application to the ICT service industry. *Expert Systems with Applications*, 40(9), 3747-3755.
- Calabrò, A., Vecchiarini, M., Gast, J., Campopiano, G., De Massis, A., & Kraus, S. (2019). Innovation in family firms: A systematic literature review and guidance for future research. *International Journal of Management Reviews*, 21(3), 317-355.
- Campello, M. (2006). Debt financing: Does it boost or hurt firm performance in product markets? *Journal of financial Economics*, 82(1), 135-172.
- Cariola, A., La Rocca, M., & La Rocca, T. (2005). Overinvestment and underinvestment problems: determining factors, consequences and solutions. *Consequences and Solutions (October 2005)*.
- Carson, E., Ranzijn, R., Winefield, A., & Marsden, H. (2004). Intellectual capital: Mapping employee and work group attributes. *Journal of Intellectual Capital*, 5(3), 443-463.
- Chang, W. S., & Hsieh, J. J. (2011). Intellectual capital and value creation-is innovation capital a missing link? *International Journal of Business and Management*, 6(2), 3-12.
- Chauhan, Y., Dey, D. K., & Jha, R. R. (2016). Board structure, controlling ownership, and business groups: Evidence from India. *Emerging Markets Review*, 27, 63-83.
- Chen, D., Jian, M., & Xu, M. (2009). Dividends for tunneling in a regulated economy: The case of China. *Pacific-Basin Finance Journal*, 17(2), 209-223.
- Chen, H.-L., & Hsu, W.-T. (2009). Family ownership, board independence, and R&D investment. *Family business review*, 22(4), 347-362.
- Chen, M. C., Cheng, S. J., & Hwang, Y. (2005). An empirical investigation of the relationship between intellectual capital and firms' market value and financial performance. *Journal of Intellectual Capital*, 6(2), 159-176.
- Chen, V. Z., Li, J., Shapiro, D. M., & Zhang, X. (2014a). Ownership structure and innovation: An emerging market perspective. *Asia Pacific Journal of Management*, 31(1), 1-24.

- Chen, Y., Wang, Y., & Lin, L. (2014b). Independent directors' board networks and controlling shareholders' tunneling behavior. *China Journal of Accounting Research*, 7(2), 101-118.
- Cheng, B., Ioannou, I., & Serafeim, G. (2014). Corporate social responsibility and access to finance. *Strategic management journal*, 35(1), 1-23.
- Cheng, M., Lin, B., Lu, R., & Wei, M. (2020). Non-controlling large shareholders in emerging markets: Evidence from China. *Journal of Corporate Finance*, 63, 101259.
- Cheung, Y.-L., Stouraitis, A., & Wong, A. W. (2005). Ownership concentration and executive compensation in closely held firms: Evidence from Hong Kong. *Journal of Empirical Finance*, 12(4), 511-532.
- Cheung, Y.-W., Chinn, M. D., & Fujii, E. (2007). The overvaluation of renminbi undervaluation. *Journal of International Money and Finance*, 26(5), 762-785.
- Chiu, C.-N., & Chen, H.-H. (2016). The study of knowledge management capability and organizational effectiveness in Taiwanese public utility: the mediator role of organizational commitment. *SpringerPlus*, 5(1), 1520.
- Cho, M.-H. (1998). Ownership structure, investment, and the corporate value: an empirical analysis. *Journal of financial Economics*, 47(1), 103-121.
- Choi, A. H. (2018). Concentrated Ownership and Long-Term Shareholder Value. *Harv. Bus. L. Rev.*, 8, 54-99.
- Choi, Y. R., Zahra, S. A., Yoshikawa, T., & Han, B. H. (2015). Family ownership and R&D investment: The role of growth opportunities and business group membership. *Journal of Business Research*, 68(5), 1053-1061.
- Chouaibi, J., & Kouaib, A. (2015). Impact of shareholders' identity on intellectual capital performance: evidence from Tunisian manufacturing companies. *International Journal of Managerial and Financial Accounting*, 7(3-4), 246-267.
- Chowdhury, L. A. M., Rana, T., & Azim, M. I. (2019). Intellectual capital efficiency and organisational performance: In the context of the pharmaceutical industry in Bangladesh. *Journal of Intellectual Capital*, 20(6), 784-806.
- Chu, S. K. W., Chan, K. H., & Wu, W. W. (2011). Charting intellectual capital performance of the gateway to China. *Journal of Intellectual Capital*, 12(2), 249-276.

- Claessens, S., Djankov, S., Fan, J. P., & Lang, L. H. (2002). Disentangling the incentive and entrenchment effects of large shareholdings. *The journal of finance*, 57(6), 2741-2771.
- Claessens, S., Djankov, S., & Lang, L. H. (2000). The separation of ownership and control in East Asian corporations. *Journal of financial Economics*, 58(1-2), 81-112.
- Claessens, S., & Fan, J. P. (2002). Corporate governance in Asia: A survey. *International Review of finance*, 3(2), 71-103.
- Coad, A., Holm, J. R., Krafft, J., & Quatraro, F. (2018). Firm age and performance. *Journal of Evolutionary Economics*, 28(1), 1-11.
- Coad, A., Segarra, A., & Teruel, M. (2013). Like milk or wine: Does firm performance improve with age? *Structural Change and Economic Dynamics*, 24, 173-189.
- Cohen, S., & Kaimenakis, N. (2007). Intellectual capital and corporate performance in knowledge - intensive SMEs. *The Learning Organization*, 14(3), 241-262.
- Courteau, L., Di Pietra, R., Giudici, P., & Melis, A. (2017). The role and effect of controlling shareholders in corporate governance. *Journal of Management & Governance*, 21(3), 561-572.
- Cronqvist, H., & Nilsson, M. (2003). Agency costs of controlling minority shareholders. *Journal of Financial and Quantitative analysis*, 695-719.
- Curto, J. D., & Pinto, J. C. (2011). The corrected vif (cvif). *Journal of Applied Statistics*, 38(7), 1499-1507.
- Czarnitzki, D., & Kraft, K. (2009). Capital control, debt financing and innovative activity. *Journal of Economic Behavior & Organization*, 71(2), 372-383.
- Daniel, F., Lohrke, F. T., Fornaciari, C. J., & Turner Jr, R. A. (2004). Slack resources and firm performance: a meta-analysis. *Journal of Business Research*, 57(6), 565-574.
- David, P., O'Brien, J. P., Yoshikawa, T., & Delios, A. (2010). Do shareholders or stakeholders appropriate the rents from corporate diversification? The influence of ownership structure. *Academy of Management Journal*, 53(3), 636-654.
- De Cesari, A. (2012). Expropriation of minority shareholders and payout policy. *The British Accounting Review*, 44(4), 207-220.

- De Massis, A., Kotlar, J., Campopiano, G., & Cassia, L. (2013). Dispersion of family ownership and the performance of small-to-medium size private family firms. *Journal of Family Business Strategy*, 4(3), 166-175.
- Dean, A., & Kretschmer, M. (2007). Can ideas be capital? Factors of production in the postindustrial economy: A review and critique. *Academy of Management Review*, 32(2), 573-594.
- Demsetz, H. (1983). The structure of ownership and the theory of the firm. *The journal of law and Economics*, 26(2), 375-390.
- Demsetz, H., & Lehn, K. (1985). The structure of corporate ownership: Causes and consequences. *Journal of political economy*, 93(6), 1155-1177.
- Demsetz, H., & Villalonga, B. (2001). Ownership structure and corporate performance. *Journal of Corporate Finance*, 7(3), 209-233.
- Deng, Z., Hofman, P. S., & Newman, A. (2013). Ownership concentration and product innovation in Chinese private SMEs. *Asia Pacific Journal of Management*, 30(3), 717-734.
- Denicolai, S., Cotta Ramusino, E., & Sotti, F. (2015). The impact of intangibles on firm growth. *Technology Analysis & Strategic Management*, 27(2), 219-236.
- Díaz-Fernández, M. C., González-Rodríguez, M. R., & Simonetti, B. (2015). Top management team's intellectual capital and firm performance. *European management journal*, 33(5), 322-331.
- Ducassy, I., & Guyot, A. (2017). Complex ownership structures, corporate governance and firm performance: The French context. *Research in International Business and Finance*, 39, 291-306.
- Duodu, B., & Rowlinson, S. (2019). Intellectual capital for exploratory and exploitative innovation. *Journal of Intellectual Capital*, 20(3), 382-405.
- Dženopoljac, V., Janošević, S., & Bontis, N. (2016). Intellectual capital and financial performance in the Serbian ICT industry. *Journal of Intellectual Capital*, 17(2), 373-396.
- Ebbes, P., Papies, D., & van Heerde, H. J. (2016). Dealing with endogeneity: A nontechnical guide for marketing researchers. *Handbook of market research*, 1-37.

- Edvinsson, L. (1997). Developing intellectual capital at Skandia. *Long Range Planning*, 30(3), 366-373.
- Edvinsson, L., & Sullivan, P. (1996). Developing a model for managing intellectual capital. *European management journal*, 14(4), 356-364.
- Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of Management Review*, 14(1), 57-74.
- Eklund, C. M. (2020). Why do some SME's become high-growth firms? The role of employee competences. *Journal of Intellectual Capital*, 21(5), 691-707.
- Erkens, D. H., Hung, M., & Matos, P. (2012). Corporate governance in the 2007–2008 financial crisis: Evidence from financial institutions worldwide. *Journal of Corporate Finance*, 18(2), 389-411.
- Faccio, M., & Lang, L. H. (2002). The ultimate ownership of Western European corporations. *Journal of financial Economics*, 65(3), 365-395.
- Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The journal of law and Economics*, 26(2), 301-325.
- Fama, E. F., & Jensen, M. C. (1985). Organizational forms and investment decisions. *Journal of financial Economics*, 14(1), 101-119.
- Fernández-Muñiz, B., Montes-Peón, J. M., & Vázquez-Ordás, C. J. (2009). Relation between occupational safety management and firm performance. *Safety science*, 47(7), 980-991.
- Ferramosca, S., & Ghio, A. (2018). Leveraging intellectual capital in developing countries: evidence from Kenya. *Journal of Intellectual Capital*, 19(3), 562-580.
- Filatovchev, I., Kapelyushnikov, R., Dyomina, N., & Aukutsionek, S. (2001). The effects of ownership concentration on investment and performance in privatized firms in Russia. *Managerial and Decision Economics*, 22(6), 299-313.
- Firer, S., & Mitchell Williams, S. (2003). Intellectual capital and traditional measures of corporate performance. *Journal of Intellectual Capital*, 4(3), 348-360.
- Forte, W., Matonti, G., & NicolÃ, G. (2019). The impact of intellectual capital on firms financial performance and market value: Empirical evidence from Italian listed firms. *African Journal of Business Management*, 13(5), 147-159.

- Galbreath, J. (2002). Twenty - first century management rules: the management of relationships as intangible assets. *Management decision*, 40(2), 116-126.
- Gan, K., & Saleh, Z. (2008). Intellectual capital and corporate performance of technology-intensive companies: Malaysia evidence. *Asian journal of business and Accounting*, 1(1), 113-130.
- Gaspar, J.-M., Massa, M., & Matos, P. (2005). Shareholder investment horizons and the market for corporate control. *Journal of financial Economics*, 76(1), 135-165.
- Ghosh, S., & Mondal, A. (2009). Indian software and pharmaceutical sector IC and financial performance. *Journal of Intellectual Capital*, 10(3), 369-388.
- Gillan, S., & Starks, L. T. (2003). Corporate governance, corporate ownership, and the role of institutional investors: A global perspective. *Journal of applied Finance*, 13(2), 4-22.
- Gilson, R. J. (2005). Controlling shareholders and corporate governance: Complicating the comparative taxonomy. *Harv. L. Rev.*, 119, 1641-1679.
- Gilson, R. J., & Gordon, J. N. (2003). Controlling controlling shareholders. *University of Pennsylvania Law Review*, 152(2), 785-843.
- Ginesti, G., Caldarelli, A., & Zampella, A. (2018). Exploring the impact of intellectual capital on company reputation and performance. *Journal of Intellectual Capital*, 19(5), 915-934.
- Ginesti, G., & Ossorio, M. (2021). The influence of family-related factors on intellectual capital performance in family businesses. *Journal of Management and Governance*, 25(2), 535-560.
- Goebel, V. (2015). Estimating a measure of intellectual capital value to test its determinants. *Journal of Intellectual Capital*, 16(1), 101-120.
- Goh, P. C. (2005). Intellectual capital performance of commercial banks in Malaysia. *Journal of Intellectual Capital*, 6(3), 385-396.
- Goh, P. C., & Lim, K. P. (2004). Disclosing intellectual capital in company annual reports: evidence from Malaysia. *Journal of Intellectual Capital*, 5(3), 500-510.
- Gómez-Mejía, L. R., Haynes, K. T., Núñez-Nickel, M., Jacobson, K. J., & Moyano-Fuentes, J. (2007). Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills. *Administrative science quarterly*, 52(1), 106-137.

- Goshen, Z., & Hamdani, A. (2015). Corporate control and idiosyncratic vision. *Yale LJ*, 125, 560-617.
- Greene, W. H. (2003). *Econometric analysis*: Pearson Education India.
- Guthrie, J., Ricceri, F., & Dumay, J. (2012). Reflections and projections: a decade of intellectual capital accounting research. *The British Accounting Review*, 44(2), 68-82.
- Haji, A. A., & Ghazali, N. A. M. (2013). A longitudinal examination of intellectual capital disclosures and corporate governance attributes in Malaysia. *Asian Review of Accounting*, 21(1), 27-52.
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193-206.
- Handy, C. (2012). *The age of unreason*: Random House.
- Haniffa, R. M., & Cooke, T. E. (2002). Culture, corporate governance and disclosure in Malaysian corporations. *Abacus*, 38(3), 317-349.
- Haris, M., Yao, H., Tariq, G., Malik, A., & Javaid, H. M. (2019). Intellectual capital performance and profitability of banks: Evidence from Pakistan. *Journal of Risk and Financial Management*, 12(2), 1-26.
- Hashim, M. J., Osman, I., & Alhabshi, S. M. (2015). Effect of intellectual capital on organizational performance. *Procedia-Social and Behavioral Sciences*, 211(25), 207-214.
- He, W., & Kyaw, N. A. (2018). Ownership structure and investment decisions of Chinese SOEs. *Research in International Business and Finance*, 43, 48-57.
- Heckman, J. J. (1979). Sample selection bias as a specification error. *Econometrica: journal of the Econometric Society*, 47(1), 153-161.
- Hejazi, R., Ghanbari, M., & Alipour, M. (2016). Intellectual, human and structural capital effects on firm performance as measured by Tobin's Q. *Knowledge and Process Management*, 23(4), 259-273.
- Hidalgo, R. L., García-Meca, E., & Martínez, I. (2011). Corporate governance and intellectual capital disclosure. *Journal of business ethics*, 100(3), 483-495.

- Hillman, A. J., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *Academy of Management Review*, 28(3), 383-396.
- Ho, C.-A., & Williams, S. M. (2003). International comparative analysis of the association between board structure and the efficiency of value added by a firm from its physical capital and intellectual capital resources. *The International Journal of Accounting*, 38(4), 465-491.
- Hooy, G.-K., Hooy, C.-W., & Chee, H.-K. (2020). Ultimate ownership, control mechanism, and firm performance: Evidence from Malaysian firms. *Emerging Markets Finance and Trade*, 56(15), 3805-3828.
- Hosono, K., Takizawa, M., & Yamanouchi, K. (2020). Firm age, productivity, and intangible capital. *Discussion papers*, 20001.
- Hovey, M., Li, L., & Naughton, T. (2003). The relationship between valuation and ownership of listed firms in China. *Corporate Governance: An International Review*, 11(2), 112-122.
- Hsiao, C. (2007). Panel data analysis—advantages and challenges. *Test*, 16(1), 1-22.
- Hsieh, C.-H., Ting, I. W. K., Asif, J., & Le, H. T. M. (2020). The role of controlling shareholders in determining investments of intellectual capital among Taiwanese semiconductor companies. *Journal of Intellectual Capital*, 21(1), 62-86.
- Huang, C. J., & Liu, C. J. (2005). Exploration for the relationship between innovation, IT and performance. *Journal of Intellectual Capital*, 6(2), 237-252.
- Inkinen, H., Kianto, A., Vanhala, M., & Ritala, P. (2017). Structure of intellectual capital—an international comparison. *Accounting, Auditing & Accountability Journal*, 30(5), 1160-1183.
- Iqbal, A., Latif, F., Marimon, F., Sahibzada, U. F., & Hussain, S. (2019). From knowledge management to organizational performance. *Journal of Enterprise Information Management*, 32(1), 36-59.
- Jameson, M., Prevost, A., & Puthenpurackal, J. (2014). Controlling shareholders, board structure, and firm performance: Evidence from India. *Journal of Corporate Finance*, 27, 1-20.

- Jean, R.-J. B., Deng, Z., Kim, D., & Yuan, X. (2016). Assessing endogeneity issues in international marketing research. *International Marketing Review*, 33(3), 483-512.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial Economics*, 3(4), 305-360.
- Jiang, F., Cai, W., Wang, X., & Zhu, B. (2018). Multiple large shareholders and corporate investment: Evidence from China. *Journal of Corporate Finance*, 50, 66-83.
- Jiang, H., Habib, A., & Smallman, C. (2009). The effect of ownership concentration on CEO compensation - firm performance relationship in New Zealand. *Pacific Accounting Review*, 21(2), 104-131.
- Joshi, M., Cahill, D., Sidhu, J., & Kansal, M. (2013). Intellectual capital and financial performance: an evaluation of the Australian financial sector. *Journal of Intellectual Capital*, 14(2), 264-285.
- Kamath, G. B. (2017). An investigation into intellectual capital efficiency and export performance of firms in India. *International Journal of Learning and Intellectual Capital*, 14(1), 47-75.
- Kang, H., Cheng, M., & Gray, S. J. (2007). Corporate governance and board composition: Diversity and independence of Australian boards. *Corporate Governance: An International Review*, 15(2), 194-207.
- Kang, H. C., Anderson, R. M., Eom, K. S., & Kang, S. K. (2017). Controlling shareholders' value, long-run firm value and short-term performance. *Journal of Corporate Finance*, 43, 340-353.
- Kang, P. K., & Kim, Y. C. (2015). The impact of the ownership discrepancy between cash-flow rights and voting rights on firms' soft asset investment decisions: Evidence from large business groups in South Korea. *Group Decision and Negotiation*, 24(3), 429-450.
- Keenan, J., & Aggestam, M. (2001). Corporate governance and intellectual capital: some conceptualisations. *Corporate Governance: An International Review*, 9(4), 259-275.
- Kehelwalatenna, S. (2016). Intellectual capital performance during financial crises. *Measuring business excellence*, 20(3), 55-78.

- Kengatharan, N. (2019). A knowledge-based theory of the firm: Nexus of intellectual capital, productivity and firms' performance. *International Journal of Manpower*, 40(6), 1056-1074.
- Khalique, M., Bontis, N., bin Shaari, J. A. N., & Isa, A. H. M. (2015). Intellectual capital in small and medium enterprises in Pakistan. *Journal of Intellectual Capital*, 16(1), 224-238.
- Khalique, M., Hina, K., Ramayah, T., & bin Shaari, J. A. N. (2020). Intellectual capital in tourism SMEs in Azad Jammu and Kashmir, Pakistan. *Journal of Intellectual Capital*, 21(3), 333-355.
- Khan, S. Z., Yang, Q., & Waheed, A. (2019). Investment in intangible resources and capabilities spurs sustainable competitive advantage and firm performance. *Corporate Social Responsibility and Environmental Management*, 26(2), 285-295.
- Kianto, A., Ritala, P., Vanhala, M., & Hussinki, H. (2018). Reflections on the criteria for the sound measurement of intellectual capital: A knowledge-based perspective. *Critical Perspectives on Accounting*, 70, 1-15.
- Kianto, A., Sáenz, J., & Aramburu, N. (2017). Knowledge-based human resource management practices, intellectual capital and innovation. *Journal of Business Research*, 81, 11-20.
- Kim, B., Pae, J., & Yoo, C.-Y. (2019). Business groups and tunneling: Evidence from corporate charitable contributions by Korean companies. *Journal of business ethics*, 154(3), 643-666.
- Komnencic, B., & Pokrajčić, D. (2012). Intellectual capital and corporate performance of MNCs in Serbia. *Journal of Intellectual Capital*, 13(1), 106-119.
- Kweh, Q. L., Chan, Y. C., & Ting, I. W. K. (2013). Measuring intellectual capital efficiency in the Malaysian software sector. *Journal of Intellectual Capital*, 14(2), 310-324.
- Kweh, Q. L., Lu, W.-M., Wang, W.-K., & Su, M.-H. (2014). Life insurance companies' performance and intellectual capital: a long-term perspective. *International Journal of Information Technology & Decision Making*, 13(04), 755-777.
- Kweh, Q. L., Ting, I. W. K., Hanh, L. T. M., & Zhang, C. (2019). Intellectual capital, governmental presence, and firm performance of publicly listed companies in Malaysia. *International Journal of Learning and Intellectual Capital*, 16(2), 193-211.

- Kweh, Q. L., Ting, I. W. K., Le, H. T. M., & Nourani, M. (2020). Nonlinear impacts of board independence on debt financing: Contingent on the shareholdings of the largest shareholder. *International Journal of Finance & Economics*, 1-18.
- Kweh, Q. L., Ting, I. W. K., Lu, W.-M., & Le, H. T. M. (2021). Nonlinearity in the relationship between intellectual capital and corporate performance: evidence from Vietnamese listed companies. *Journal of Intellectual Capital*, In press.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2000). Investor protection and corporate governance. *Journal of financial Economics*, 58(1-2), 3-27.
- La Porta, R., Lopez - de - Silanes, F., & Shleifer, A. (1999). Corporate ownership around the world. *The journal of finance*, 54(2), 471-517.
- Laforet, S., & Tann, J. (2006). Innovative characteristics of small manufacturing firms. *Journal of Small Business and Enterprise Development*, 13(3), 363-380.
- Larcker, D. F., So, E. C., & Wang, C. C. (2013). Boardroom centrality and firm performance. *Journal of Accounting and Economics*, 55(2-3), 225-250.
- Larkin, I., Pierce, L., & Gino, F. (2012). The psychological costs of pay - for - performance: Implications for the strategic compensation of employees. *Strategic management journal*, 33(10), 1194-1214.
- Lean, H. H., Ting, I. W. K., & Qian, K. L. (2015). Ownership concentration, family ownership and leverage: Evidence from Malaysia. *Malaysian Journal of Economic Studies*, 52(2), 117-133.
- Leblebici, D. (2012). Impact of workplace quality on employee's productivity: case study of a bank in Turkey. *Journal of Business, Economics*, 1(1), 38-49.
- Lee, M. (2015). Impact of corporate governance on research and development investment in the pharmaceutical industry in South Korea. *Osong public health and research perspectives*, 6(4), 249-255.
- Lee, Y.-C., & Wang, M.-C. (2017). How does corporate control affect the appointment, auditing expertise and reputation of independent directors? Evidence from Taiwan. *The Quarterly Review of Economics Finance*, 64, 130-140.
- Li, J., Pike, R., & Haniffa, R. (2008). Intellectual capital disclosure and corporate governance structure in UK firms. *Accounting and business research*, 38(2), 137-159.

- Li, X., Guo, Y., Hou, J., & Liu, J. (2021). Human Capital Allocation and Enterprise Innovation Performance: An Example of China's Knowledge-Intensive Service Industry. *Research in International Business and Finance*, 58, 101429.
- Li, Y., & Zhao, Z. (2018). The dynamic impact of intellectual capital on firm value: evidence from China. *Applied Economics Letters*, 25(1), 19-23.
- Liang, C.-J., Huang, T.-T., & Lin, W.-C. (2011). Does ownership structure affect firm value? Intellectual capital across industries perspective. *Journal of Intellectual Capital*, 12(4), 552-570.
- Lim, E. (2018). Controlling shareholders and fiduciary duties in Asia. *Journal of Corporate Law Studies*, 18(1), 113-150.
- Lin, C.-M., Chan, M.-L., Chien, I.-H., & Li, K.-H. (2018). The relationship between cash value and accounting conservatism: The role of controlling shareholders. *International Review of Economics & Finance*, 55, 233-245.
- Liu, X., van Jaarsveld, D. D., Batt, R., & Frost, A. C. (2014). The influence of capital structure on strategic human capital: Evidence from US and Canadian firms. *Journal of management*, 40(2), 422-448.
- Lo, H.-C., Ting, I. W. K., Kweh, Q. L., & Yang, M. J. (2016). Nonlinear association between ownership concentration and leverage: The role of family control. *International Review of Financial Analysis*, 46, 113-123.
- Lu, W.-M., Wang, W.-K., & Kweh, Q. L. (2014). Intellectual capital and performance in the Chinese life insurance industry. *Omega*, 42(1), 65-74.
- Madhani, P. M. (2010). Resource based view (RBV) of competitive advantage: an overview. *RESOURCE BASED VIEW: CONCEPTS AND PRACTICES*, Pankaj Madhani, ed, 3-22.
- Maditinos, D., Chatzoudes, D., Tsairidis, C., & Theriou, G. (2011). The impact of intellectual capital on firms' market value and financial performance. *Journal of Intellectual Capital*, 12(1), 132-151.
- Marlin, D., & Geiger, S. W. (2015). A reexamination of the organizational slack and innovation relationship. *Journal of Business Research*, 68(12), 2683-2690.
- Martín-de-Castro, G., Delgado-Verde, M., López-Sáez, P., & Navas-López, J. E. (2011). Towards 'an intellectual capital-based view of the firm': origins and nature. *Journal of business ethics*, 98(4), 649-662.

- Masciandaro, D., & Quintyn, M. (2008). Helping hand or grabbing hand?: Politicians, supervision regime, financial structure and market view. *The North American Journal of Economics and Finance*, 19(2), 153-173.
- McDowell, W. C., Peake, W. O., Coder, L., & Harris, M. L. (2018). Building small firm performance through intellectual capital development: Exploring innovation as the “black box”. *Journal of Business Research*, 88, 321-327.
- McManus, J., Floyd, D., Majid, M. S. A., & Kassim, S. H. (2009). Impact of the 2007 US financial crisis on the emerging equity markets. *International Journal of Emerging Markets*, 4(4), 341-357.
- Memon, M. A., Cheah, J.-H., Ramayah, T., Ting, H., Chuah, F., & Cham, T. H. (2019). Moderation analysis: issues and guidelines. *Journal of Applied Structural Equation Modeling*, 3(1), 1-11.
- Miller, D., & Le Breton - Miller, I. (2006). Family governance and firm performance: Agency, stewardship, and capabilities. *Family business review*, 19(1), 73-87.
- Minetti, R., Murro, P., & Paiella, M. (2015). Ownership structure, governance, and innovation. *European Economic Review*, 80, 165-193.
- Miroshnychenko, I., Barontini, R., & De Massis, A. (2020). Investment opportunities and R&D investments in family and nonfamily firms. *R&D Management*, 50(4), 447-461.
- Mishra, S. (2020). Do independent directors improve firm performance? Evidence from India. *Global Business Review*, 1-19.
- Mohapatra, S., Jena, S. K., Mitra, A., & Tiwari, A. K. (2019). Intellectual capital and firm performance: evidence from Indian banking sector. *Applied Economics*(54), 6054-6067.
- Mohd-Saleh, N., Rahman, C. A., & Ridhuan, M. (2009). Ownership structure and intellectual capital performance in Malaysia. *Asian Academy of Management Journal of Accounting and Finance*, 5(1), 1-29.
- Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. *Journal of financial Economics*, 20, 293-315.
- Mueller, E., & Spitz - Oener, A. (2006). Managerial ownership and company performance in German small and medium - sized private enterprises. *German Economic Review*, 7(2), 233-247.

- Muhammad, N. M. N., & Ismail, M. K. A. (2009). Intellectual capital efficiency and firm's performance: Study on Malaysian financial sectors. *International journal of economics and finance*, 1(2), 206-212.
- Munari, F., Oriani, R., & Sobrero, M. (2010). The effects of owner identity and external governance systems on R&D investments: A study of Western European firms. *Research Policy*, 39(8), 1093-1104.
- Muttakin, M. B., Khan, A., & Belal, A. R. (2015). Intellectual capital disclosures and corporate governance: An empirical examination. *Advances in accounting*, 31(2), 219-227.
- Nadeem, M., Dumay, J., & Massaro, M. (2019). If you can measure it, you can manage it: a case of intellectual capital. *Australian Accounting Review*, 29(2), 395-407.
- Nadeem, M., Gan, C., & Nguyen, C. (2018). The importance of intellectual capital for firm performance: Evidence from Australia. *Australian Accounting Review*, 28(3), 334-344.
- Nazari, J. A., & Herremans, I. M. (2007). Extended VAIC model: measuring intellectual capital components. *Journal of Intellectual Capital*, 8(4), 595-609.
- Oehmichen, J., Sarry, M. A., & Wolff, M. (2014). Beyond human capital explanations for the gender pay gap among executives: Investigating board embeddedness effects on discrimination. *Business Research*, 7(2), 351-380.
- Oh, W.-Y., Chang, Y. K., Lee, G., & Seo, J. (2018). Intragroup Transactions, Corporate Governance, and Corporate Philanthropy in Korean Business Groups. *Journal of business ethics*, 153(4), 1031-1049.
- Opping, G. K., & Pattanayak, J. (2019). Does investing in intellectual capital improve productivity? Panel evidence from commercial banks in India. *Borsa Istanbul Review*, 19(3), 219-227.
- Ozkan, N., Cakan, S., & Kayacan, M. (2017). Intellectual capital and financial performance: A study of the Turkish Banking Sector. *Borsa Istanbul Review*, 17(3), 190-198.
- Panda, B., & Leepsa, N. (2017). Agency theory: Review of theory and evidence on problems and perspectives. *Indian Journal of Corporate Governance*, 10(1), 74-95.
- Peneder, M. (2003). Intangible investment and human resources. In *Change, transformation and development* (pp. 229-256): Springer.

- Peng, M. W., & Jiang, Y. (2010). Institutions Behind Family Ownership and Control in Large Firms. *Journal of Management Studies*, 47(2), 253-273.
- Peng, M. W., Sun, S. L., & Markóczy, L. (2015). Human capital and CEO compensation during institutional transitions. *Journal of Management Studies*, 52(1), 117-147.
- Peng, W. Q., Wei, K. J., & Yang, Z. (2011). Tunneling or propping: Evidence from connected transactions in China. *Journal of Corporate Finance*, 17(2), 306-325.
- Penrose, E. (1959). A Resource Based View of the firm. *Strateg. Manag. J*, 5, 171-180.
- Poh, L. T., Kilicman, A., & Ibrahim, S. N. I. (2018). On intellectual capital and financial performances of banks in Malaysia. *Cogent Economics & Finance*, 6(1), 1-15.
- Pulic, A. (1998). Measuring the Performance of IP in Knowledge Economy: Hamilton.
- Pulic, A. (2000). VAIC (TM) - an accounting tool for IC management. *International Journal of Technology Management*, 20(5-8), 702-714.
- Pulic, A. (2004). Intellectual capital—does it create or destroy value? *Measuring business excellence*, 8(1), 62-68.
- Raja Adzrin, R., Thahir, A. A., & Maisarah, M. (2009). Value creation strategy for sustainability. *Accountants Today*, 22(1), 12-13.
- Ramírez, Y., Dieguez-Soto, J., & Manzanegue, M. (2020). How does intellectual capital efficiency affect firm performance? The moderating role of family management. *International Journal of Productivity and Performance Management*, 70(2), 297-324.
- Riahi - Belkaoui, A. (2003). Intellectual capital and firm performance of US multinational firms. *Journal of Intellectual Capital*, 4(2), 215-226.
- Roos, G., & Roos, J. (1997). Measuring your company's intellectual performance. *Long Range Planning*, 30(3), 413-426.
- Russino, A., Picone, P. M., & Dagnino, G. B. (2019). Unveiling the role of multiple blockholders: Evidence from closely held firms. *Corporate Governance: An International Review*, 27(6), 477-502.

- Sakawa, H., & Watanabel, N. (2018). Parent control and ownership monitoring in publicly listed subsidiaries in Japan. *Research in International Business and Finance*, 45, 7-14.
- Sánchez-Canizares, S. M., Ángel Ayuso Muñoz, M., & López-Guzmán, T. (2007). Organizational culture and intellectual capital: a new model. *Journal of Intellectual Capital*, 8(3), 409-430.
- Sanchez, P., Chaminade, C., & Olea, M. (2000). Management of intangibles—an attempt to build a theory. *Journal of Intellectual Capital*, 1(4), 312-327.
- Sardo, F., & Serrasqueiro, Z. (2017). A European empirical study of the relationship between firms' intellectual capital, financial performance and market value. *Journal of Intellectual Capital*, 18(4), 771-788.
- Sardo, F., & Serrasqueiro, Z. (2018). Intellectual capital, growth opportunities, and financial performance in European firms: Dynamic panel data analysis. *Journal of Intellectual Capital*, 19(4), 747-767.
- 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.
- Seetharaman, A., Sooria, H. H. B. Z., & Saravanan, A. (2002). Intellectual capital accounting and reporting in the knowledge economy. *Journal of Intellectual Capital*, 3(2), 128-148.
- Shapiro, D., Tang, Y., Wang, M., & Zhang, W. (2015). The effects of corporate governance and ownership on the innovation performance of Chinese SMEs. *Journal of Chinese Economic and Business Studies*, 13(4), 311-335.
- Shen, C.-H., Luo, F., & Huang, D. (2015). Analysis of earnings management influence on the investment efficiency of listed Chinese companies. *Journal of Empirical Finance*, 34, 60-78.
- Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. *Journal of political economy*, 94(3, Part 1), 461-488.
- Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The journal of finance*, 52(2), 737-783.
- Singh, S., Sidhu, J., Joshi, M., & Kansal, M. (2016). Measuring intellectual capital performance of Indian banks A public and private sector comparison. *Managerial Finance*, 42(7), 635-655.

- Sircar, S., Turnbow, J. L., & Bordoloi, B. (2000). A framework for assessing the relationship between information technology investments and firm performance. *Journal of management information systems*, 16(4), 69-97.
- Smriti, N., & Das, N. (2018). The impact of intellectual capital on firm performance: a study of Indian firms listed in COSPI. *Journal of Intellectual Capital*, 19(5), 935-964.
- Stähle, P., Stähle, S., & Aho, S. (2011). Value added intellectual coefficient (VAIC): a critical analysis. *Journal of Intellectual Capital*, 12(4), 531-551.
- Subramaniam, M., & Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management Journal*, 48(3), 450-463.
- Subramanian, A. M., & van de Vrande, V. (2019). The role of intellectual capital in new product development: Can it become a liability? *Journal of Operations Management*, 65(6), 517-535.
- Sullivan, P. H. (1999). Profiting from intellectual capital. *Journal of Knowledge Management*, 3(2), 132-143.
- Sydler, R., Haefliger, S., & Prukša, R. (2014). Measuring intellectual capital with financial figures: Can we predict firm profitability? *European management journal*, 32(2), 244-259.
- Ting, I. W. K., & Lean, H. H. (2009). Intellectual capital performance of financial institutions in Malaysia. *Journal of Intellectual Capital*, 10(4), 588-599.
- Ting, I. W. K., Lo, H. C., & Kweh, Q. L. (2020a). How Do Ownership Concentration and Family Control Affect R&D Investments? New Evidence from Taiwan. *International Review of finance*, 20(1), 275-291.
- Ting, I. W. K., Ren, C., Chen, F.-C., & Kweh, Q. L. (2020b). Interpreting the dynamic performance effect of intellectual capital through a value-added-based perspective. *Journal of Intellectual Capital*, 21(3), 381-401.
- Tran, D. B., & Vo, D. H. (2018). Should bankers be concerned with Intellectual capital? A study of the Thai banking sector. *Journal of Intellectual Capital*, 19(5), 897-914.
- Tran, N. P., & Vo, D. H. (2020). Do banks accumulate a higher level of intellectual capital? Evidence from an emerging market. *Journal of Intellectual Capital*, 23(2), 439-457.

- Tsao, S.-M., & Chen, G.-Z. (2012). The impact of internationalization on performance and innovation: The moderating effects of ownership concentration. *Asia Pacific Journal of Management*, 29(3), 617-642.
- Tsao, S.-M., Lin, C.-H., & Chen, V. Y. (2015). Family ownership as a moderator between R&D investments and CEO compensation. *Journal of Business Research*, 68(3), 599-606.
- Tseng, C. Y., & James Goo, Y. J. (2005). Intellectual capital and corporate value in an emerging economy: empirical study of Taiwanese manufacturers. *R&D Management*, 35(2), 187-201.
- Vafeas, N. (1999). Board meeting frequency and firm performance. *Journal of financial Economics*, 53(1), 113-142.
- Villalonga, B., & Amit, R. (2006). How do family ownership, control and management affect firm value? *Journal of financial Economics*, 80(2), 385-417.
- Wales, W. J., Patel, P. C., Parida, V., & Kreiser, P. M. (2013). Nonlinear effects of entrepreneurial orientation on small firm performance: The moderating role of resource orchestration capabilities. *Strategic Entrepreneurship Journal*, 7(2), 93-121.
- Wang, C.-T., & Chiu, C.-S. (2014). Competitive strategies for Taiwan's semiconductor industry in a new world economy. *Technology in Society*, 36, 60-73.
- Wang, K., & Xiao, X. (2011). Controlling shareholders' tunneling and executive compensation: Evidence from China. *Journal of Accounting and Public Policy*, 30(1), 89-100.
- Wang, W. Y., & Chang, C. (2005). Intellectual capital and performance in causal models: Evidence from the information technology industry in Taiwan. *Journal of Intellectual Capital*, 6(2), 222-236.
- Wei, Z., Xie, F., & Zhang, S. (2005). Ownership structure and firm value in China's privatized firms: 1991–2001. *Journal of Financial and Quantitative analysis*, 40(1), 87-108.
- Wernerfelt, B. (1984). A resource - based view of the firm. *Strategic management journal*, 5(2), 171-180.
- Whelan, K. (2002). Computers, obsolescence, and productivity. *Review of Economics and Statistics*, 84(3), 445-461.

- White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica: journal of the Econometric Society*, 817-838.
- Wiwattanakantang, Y. (2001). Controlling shareholders and corporate value: Evidence from Thailand. *Pacific-Basin Finance Journal*, 9(4), 323-362.
- Wooldridge, J. M. (1995). Selection corrections for panel data models under conditional mean independence assumptions. *Journal of econometrics*, 68(1), 115-132.
- Xu, J., & Li, J. (2019). The impact of intellectual capital on SMEs' performance in China. *Journal of Intellectual Capital*, 20(4), 488-509.
- Xu, K., Hitt, M. A., & Miller, S. R. (2020). The ownership structure contingency in the sequential international entry mode decision process: Family owners and institutional investors in family-dominant versus family-influenced firms. *Journal of international business studies*, 51(2), 151-171.
- Yao, H., Haris, M., Tariq, G., Javaid, H. M., & Khan, M. A. S. (2019). Intellectual Capital, Profitability, and Productivity: Evidence from Pakistani Financial Institutions. *Sustainability*, 11(14), 1-30.
- Ying, Q., & Wang, L. (2013). Propping by controlling shareholders, wealth transfer and firm performance: Evidence from Chinese listed companies. *China Journal of Accounting Research*, 6(2), 133-147.
- Yoo, T., & Sung, T. (2015). How outside directors facilitate corporate R&D investment? Evidence from large Korean firms. *Journal of Business Research*, 68(6), 1251-1260.
- Young, M. N., Peng, M. W., Ahlstrom, D., Bruton, G. D., & Jiang, Y. (2008). Corporate governance in emerging economies: A review of the principal-principal perspective. *Journal of Management Studies*, 45(1), 196-220.
- Zahra, S. A. (2005). Entrepreneurial risk taking in family firms. *Family business review*, 18(1), 23-40.
- Zeghal, D., & Maaloul, A. (2010). Analysing value added as an indicator of intellectual capital and its consequences on company performance. *Journal of Intellectual Capital*, 11(1), 39-60.
- Zéghal, D., & Maaloul, A. (2011). The accounting treatment of intangibles—A critical review of the literature. *Accounting Forum*, 35(4), 262-274.

Zerni, M., Kallunki, J. P., & Nilsson, H. (2010). The entrenchment problem, corporate governance mechanisms, and firm value. *Contemporary Accounting Research*, 27(4), 1169-1206.

Zhang, F., Wei, L., Yang, J., & Zhu, L. (2018). Roles of relationships between large shareholders and managers in radical innovation: A stewardship theory perspective. *Journal of Product Innovation Management*, 35(1), 88-105.