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FINANCIAL ECONOMIC ANTECEDENTS OF MALAYSIAN CORPORATE SPIN-OFFS-A FUZZY-SET QUALITY COMPARATIVE ANALYSIS

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ABSTRACT

What are the financial and economic antecedents of Corporate Spin-Offs (CSOs) in the emerging market of Malaysia? We identified and analysed the various combinations of theorised causal conditions as financial and economic antecedents preceding 40 corporate spin-offs on the Bursa Malaysia stock exchange from 1999 to 2022. The Methodology, fuzzy-set Quality Comparative Analysis (fsQCA) approach was employed to evaluate Revenue Growth, TobinQ, Focus, Gearing, and PE Ratio. We found the effects of these variables interactive and asymmetric, which Standard Regression Analysis will likely not capture their complexity. Necessity and Sufficiency Review applied, further substantiated the validity of the Casual Claims showing evidence of three different combinations of variables that motivate CSO strategies, and two compelling combinations of variables that cause companies to abstain from CSOs. Adding literature to CSOs studies through theoretical predictability, the results provide novel actionable insights to investors, business analysts, policy regulators, and researchers.

Keywords: Emerging Market CSOs; Financial Economic Antecedents; fsQCA; Casual Conditions; Necessity and Sufficiency Review

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1. INTRODUCTION

1.1 Background

Companies undergo Corporate Spin-Offs (CSOs) to secure advantages and anticipate wealth gain via share price increases. Records have shown that market-pulled CSOs achieved abnormal wealth

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gain and CSOs were favoured by market players. CSOs have become a sustainability strategy for companies impelled by financial and company crises to quickly de-merge. What financial and economic indicators motivate companies to undertake a CSO strategy in Malaysia? Does the absence of any conditions dissuade Malaysian companies from CSO? Answers to the questions enable the establishment of antecedents to CSO in Malaysia which lies on the lookout for the apparent prevailing conditions preceding the decision to spin-off. The conditions can be predispositions motivating CSO strategies or decision-impeding impasse. Prior research on corporate spin-offs has substantially documented the abnormal stock market returns attributable to shareholders and established the determinants using quantitative research methods. The determinants have yet to be properly examined on whether we can predict the occurrence of CSOs using them as pre-CSO conditions. Conventional quantitative methods individually interpret theoretical arguments and do not consider the interaction of one or more arguments when some of these arguments can be presented concurrently. For example, companies that have matured and are ready to undertake CSO will likely also have an increased information asymmetry common to a large company. If these were contradicting conditions, having one condition present does not undermine the other in any explicit way. It is imperative for the interactions or "paths" to be accounted for beyond rudimentary quantitative analysis.

The vital importance of using the fuzzy-set Qualitative Comparative Analysis (fsQCA) approach is its capacity to investigate the intricate causal configurations underlying CSOs. fsQCA models enable us to uncover the complex combinations of factors, rather than examining variables individually, which is essential given the multifaceted nature of CSO decisions. Analysing the interrelationships and synergies among different conditions, Qualitative Comparative Analysis (QCA) offers a more nuanced comprehension of the antecedent pathways shaping a firm's strategic choices regarding corporate spin-offs.

On a lighter note, adopting the fsQCA variant over standard QCA acquiesces in fine-grained calibration of set membership, enabling the capability to model partial membership in the antecedent variables and CSO outcomes. Increased granularity can elucidate more intricate causal pathways that may be obscured. Furthermore, fsQCA is better equipped to manage the ambiguity and vagueness often present in data, thereby providing a more realistic and comprehensive analysis of the complex antecedents underpinning CSO decisions. Applying fsQCA to investigate the complex causal pathways mitigates the intriguing endogeneity problem which is always the broader question of measurement error.

This study is a paradigm shift from previous research, as it employs both quantitative measurements and qualitative calibration. fsQCA has offered the field of CSO research a new analytical dimension, enabling the identification of multiple causal conditions, the recognition of equifinality, and the idea that different asymmetric combinations of these conditions can lead to the same CSO outcome.

Practically, understanding localised CSO antecedents and producing a solution that can predict CSO offers valuable pre-emptive knowledge that can benefit investor decision-making. Malaysian CSO researches uncover deeper insights which may diverge from global trends or generalised models, notably, elements including tax regulations (Yoon & Ariff, 2007), political (Nadisah & Arnold, 2017), economic resilience (Yoon et al., 2019; Yoon & Yoon, 2022) and more. Through

a pivot analytical lens, the results effectively capture the intricate interplay of diverse antecedents, culminating in more comprehensive and actionable insights for practitioners and policymakers. Investors will be able to make more informed decisions in anticipation of CSO. For companies, knowledge of CSO antecedents guides on when and on what circumstances are ideal to perform CSO. This paper bridges the knowledge gap on whether there are dominant theories in Malaysian CSOs and the nature and extent of interactions between theories in configurations.

We collected 7 years of financial information for 40 CSO companies listed in Bursa Malaysia, totalling 280 data points and using fsQCA, we designed causal conditions based on CSO theories to observe their predictability as antecedents to CSO outcomes individually and in configurations. With the identified solutions, we apply necessity and sufficiency tests to look for core as well as peripheral causal conditions to determine the predisposition of CSOs. We then conduct supplementary tests with CSO absence as outcome to identify decision-impeding factors to CSO strategies.

1.2 Theory and hypothesis

The theoretical foundation was constructed upon determinants of CSO identified by existing theories that demonstrate positive wealth impacts. These determinants include firm size, information asymmetry, operational benefits, and wealth appropriation. The rationale is that if these determinants lead to positive wealth effects from CSOs, they align with the companies' objective of wealth maximisation. Therefore, the pre-CSO conditions that prelude these determinants should motivate companies to pursue CSOs. Affirming the observable motivational conditions preceding CSOs, we can establish them as antecedents of CSOs if individually or in various configurations they lead to a higher likelihood of companies engaging in CSOs or vice-versa.

Analysis of the positive wealth theories surrounding CSOs suggests that when CSOs are meticulously planned from financial and economic standpoints, they tend to benefit both the parent company and the newly independent entity. The key variables related to this phenomenon are outlined as follows:

(i) Revenue Growth: An indicator of a company's maturity, reflecting resources committed to a saturated market and intensified competition.

(ii) Tobin Q: An economic ratio of Market Value to Total Assets, reflecting the disparity between market valuation and the company's target valuation. This index also exhibits clarity of economic value derived from efficient asset usage, sound management and thereby market value.

(iii) Focus: The opportunity to concentrate on a niche strategy tailored to strength, preference and expectations creates brand identity and loyalty. Focus enables good organisation principles including Specialisation, Simplification, and Streamlining of Management.

(iv) Wealth Transfer: The company's leverage, representing an opportunity to

benefit through debt re-contracting.

(v) Price-Earnings Ratio: A measure of a company's value relative to its per-share earnings.

Therefore, we construct the paper's hypothesis as follows:

H1: Indicators examined are applicable as antecedents for CSOs, where:

H1a: causal conditions are individually and in configurations are necessary and sufficient factors for CSO outcomes.

H1b: individually, the causal conditions are insufficient but necessary parts of a condition which is itself unnecessary but sufficient for CSO outcomes.

H1na: Indicators examined are not applicable as predisposition antecedents for CSOs, causal conditions are unnecessary and not sufficient to predict CSO outcomes.

2. LITERATURE REVIEW

2.1 Literature Review

CSOs' motivations change over time and vary across the US, Europe, and Malaysia due to regulations and corporate culture. US researchers started investigating CSOs on the theory that there were wealth impacts from stock price changes mainly due to the tax incentives for spinning off a company (Copeland et al., 1987; Hite & Owers, 1983; Schipper & Smith, 1983). Europe CSOs Literature does not mention Tax Incentives (Boreiko & Murgia, 2013; Kirchmaier, 2003; Veld & Veld-Merkoulova, 2008). In Malaysia, Yoon and Ariff (2007) counted out Tax as a CSOs determinant for stock price reactions in an emerging market. CSOs studies are also the main source of the strong Wealth Transfer Theory in Finance on the expropriation of Bondholder's wealth as motivation for the owners of CSOs which is the Stockholders (Galais & Masulis, 1976; Maxwell & Rao, 2003; Parrino, 1997; Schipper & Smith, 1983).

Table 1: Chronology of Selected CSOs' Motivations Studies After Year 2000

Paper	Market	Period	Motivations Studied
Veld & Veld-Merkoulova (2003)	Europe	1987 - 2000	Focus[3], Governance[2] & Size[1]
Kirchmaier (2003)	Europe	1989 - 1999	Size[1]
Ahn & Denis (2004)	US	1986 - 2022	Efficiency[3]
Yoon & Ariff (2007)	Malaysia	1986 - 2002	Focus[3], Tax, Age[1] & Size[1]
Murray (2008)	Europe	1992 - 2004	Leverage[4]
Chemmanur, Jordan, Liu & Wu (2010)	US	1990 - 2000	Takeovers[2]
Andersson & Klepper (2013)	Europe	1993 - 2005	Inheritance[3]
Feldman (2016a)	US	1985 - 2001	Information Asymmetries[2]
Feng, Nandy & Tian (2011)	US	1993 - 2006	Efficiency[1,3]
Mazur (2015)	US	1992 - 2005	Merger[2] & Acquisitions[2]
Prezas & Simonyan (2015)	US	1980 - 2011	Market optimism[2]
Rocha, Carneiro & Varum (2015)	US	1992 - 2007	Pushed[2] & Pulled[1], Efficiency[1,3]
Zenner, Junek & Chivukula (2015)	US	2009 - 2015	Merger[2] & Acquisitions[2]
Chemmanur & He (2016)	US	1999 - 2004	Information Asymmetries[2]
Boreiko & Murgia (2016)	Europe	1989 - 2005	Multiple indicators[3]
Feldman (2016b)	US	1995 - 2009	Capital Allocation[3]
Curran, Gorman & Egeraat (2016)	Europe	2002 - 2002	Push-factors[2]
Nadisah & Arnold (2017)	Malaysia	1980 - 2011	Political link, Focus, Size[1]
Penela, Joao Estevao & Gregory (2019)	US	2009 - 2013	Antecedents[1,2]
Yoon & Yoon (2022)	Malaysia	1986 - 2022	Focus[3], Size[1], Leverage[4] & Economic conditions[2]

Notes: [1]Motivations inclined to maturity/resources [2]Motivations inclined to asymmetries [3]Motivations inclined to operational focus [4]Motivations inclined to debt restructuring

The information hypothesis is that spin-off creates value because it lessens information asymmetry between companies and the market on the "true" profitability and operating efficiency of different company divisions. Nanda and Narayanan (1999) find company values are the aggregate performance of companies but not divisional results, and thus consequently, significant asymmetries cause the market to undervalue companies. These circumstances remained until divestiture exercises such as spin-offs reduced company sizes. Krishnaswami and Subramaniam (1999) demonstrate that spin-off companies with higher information asymmetries approach capital markets for funds in the hope of reducing information asymmetries for better market value and obtaining better market perception.

Besides reasons related to information barriers, an increase in focus is another simplified explanation towards positive wealth effect because of a spin-off. Literature like Schipper and Smith (1983) and Hite and Owers (1983) has suggested differences in wealth effect between focus-increasing spin-offs and non-focus-increasing spin-off cases. Schipper and Smith (1983) reported

descriptive statistics on the differences between these two groups of samples, whereas Hite and Owers (1983) included this explanation in their rationale for positive gain through CSOs.

Yoon and Ariff (2007) reported early evidence of wealth creation phenomena in Bursa Malaysia by observing significant abnormal returns. Yoon and Ariff (2007) further examined several potential determinants including opportunities for operational focus, tax benefits, company age and size for determinants. Their findings suggest that company age and size are significant factors influencing abnormal returns. Corroborating evidence is also found in Nadisah and Arnold (2017), who although focused on the influence of Government-Linked Companies on the returns from CSOs have also reported company size significantly influences short-term price reactions to CSO announcements. Yoon et al. (2019) and Yoon and Yoon (2022) incorporated new dimensions, such as market conditions and company performance. Building on this, Yoon and Yoon (2022) further reported evidence that the asset size of spun-off companies, their operational focus, and debt levels are significant factors driving CSO returns across multiple observed dimensions. Notably, previous studies in the Malaysian context have relied on multivariate regression analysis to examine CSO determinants individually, utilising the ceteris paribus assumption where all other factors are held constant. This paper introduces a methodological approach that moves beyond the ceteris paribus principle and investigates the novel aspect of information asymmetries to contribute to Malaysian CSO research.

3. METHODOLOGY

3.1 Data

Our dataset consisted of seven years of financial data from the DataStream database for each of the 40 companies listed on the Bursa Malaysia stock exchange that underwent CSO. The final sample was the result of carefully selecting CSO events that occurred within the past two decades ensuring the contemporaneous nature of the findings, as well as the availability of complete data over the required seven-year period.

For each company, the observation period starts six years before the CSO announcement, *t-6*, and ends on the year the CSO announcement takes place, *t*. Datapoints follow a scale of 0.0 to 1.0. 1.0 signifies one year before CSO announcement therefore being the highest likelihood of a case of CSO and 0.0 the lowest. By including year t as part of the observation period, this structure breaks the ascending pattern of a company's dataset. This allows for a composition of at least one less-than-likely CSOs datapoints for every highly likely CSOs datapoints. This led to a total of 280 data points.

Table 2: Measurement of Spin-off Variable

Year	Spin-off Variable Value	N
Announcement date (t)	0.0	40
Year (t-1)	1.0	40
Year (t-2)	0.8	40
Year (t-3)	0.6	40
Year (t-4)	0.4	40
Year (t-5)	0.2	40
Year (t-6)	0.0	40

3.2 Fuzzy-Set Qualitative Comparative Analysis

To examine predisposition antecedents that motivate CSOs, we first establish fsQCA set theoretic comprised of CSOs outcome, Y, and causal conditions, X. The goal is to establish solutions explaining the causal relations that can then be developed by applying "logical and" and "logical or" to cases through calibrated measurement. The "logical and" indicates a compound set combined with more than two conditions written as "*" in the equation. The "logical or" means a sum of sets and this is written as "+". Hidden conditions constitute "don't care" cases. General equation (1) for this paper is as follows:

$$Y \in x_1 \bullet x_2 \bullet x_3 \bullet x_4 \bullet x_5, \text{ where } x_1 \bullet x_2 \bullet x_3 \bullet x_4 \bullet x_5 \leq Y \quad \ldots.(1)$$

Interactions between conditions expand the model by adding x_N, the representation of any other condition in the model with X being the interacted conditions and K being the number of causal combinations defined by an exponential function of 2^n, where n is the number of causal conditions examined. Expanded Equation (2) is presented as follows:

$$Y \in x_1{*}x_N + x_2{*}x_N + \ldots + x_5{*}x_N, \text{ where } X_1 \bullet X_2 \bullet \ldots \bullet X_K \leq Y \quad \ldots.(2)$$

After affirming equation (1) and equation (2), we apply the necessity test to them. Braumoeller & Goertz (2000) defines necessity with two complementing statements, the first being X is a necessary condition for Y if X is always present when Y occurs, and the second X is a necessary condition for Y if Y does not occur in the absence of X. To test the necessity of a causal condition, we employ consistency and coverage parameters. Equation (3) and Equation (4) are written as follows:

$$\text{Consistency } (X \Leftarrow Y) = \sum \min(X, Y)/\sum Y \quad \ldots.(3)$$

$$\text{Coverage } (X \Leftarrow Y) = \sum \min(X, Y)/\sum X \quad \ldots.(4)$$

We then conduct supplementary analysis to determine the sufficiency of causal conditions. When a sufficiency relation is met, the two statements in the necessity test become true with Y and X interchanged. We write the consistency and coverage equation (5) and equation (6) as follows:

$$\text{Consistency } (X \Rightarrow Y) = \sum \min(X, Y) / \sum X \quad \ldots.(5)$$

$$\text{Coverage } (X \Rightarrow Y) = \sum \min(X, Y) / \sum Y \quad \ldots.(6)$$

This paper also reports unique coverage of both tests, computed with sufficient conditions A, B, C, … for cases with more than one set of sufficient conditions using:

$$\text{U.Cov.}(A \Rightarrow Y) = \sum \min(Y, A) \sum Y - \sum \min(Y, A, \max(B, C, \ldots)) \sum Y \quad \ldots.(7)$$

The data analysis is performed using Ragin, Charles & Davey (2022) fsQCA software version 4.0.

3.3 Variables

Five financial indicators representing causal conditions suggested by major CSOs theories were examined. For each CSO theory, we limited the corresponding variables to one. We are mindful not to overpopulate variables exceeding the range of six variables to avoid clustering due to diversity limitations (Rihoux & Ragin, 2009). CSO theories used to establish causal conditions are as follows:

Table 3: Measurement of Causal Condition Variables

CSO Theories	Primary Indicator	Transformed Measurement
Maturity / Resources	Revenue growth	Rgrowth = 1 - $(R_{it} - R_{it-1})/R_{it-1}$
Asset Value Asymmetry	Tobin Q	TobinQ = 1- MV_{it}/AV_{it}
Operational Benefits	SIC code	Focus = 1 – F, F = 0, 0.5, 1.0
Debt Restructuring	Gearing ratio	WT = 1 - $Debt_{it}/Equity_{it}$
Earnings Asymmetry	Price-earnings ratio	PE = 1- $Price_{it}/EPS_{it}$

Notes: R, Revenue; MV, Market value; AV, Total asset value; EPS, Earnings per share

Hite and Owers (1983), Kirchmaier (2003), Gertner et al. (2002), Yoon and Ariff (2007) and Yoon and Yoon (2022) suggest for CSOs to be considered, the parent company itself should be sufficiently matured and have strong division to be spun-off as the spun-off company are required to be financially independent of the parent company after CSO. To properly reflect these circumstances, we employ low revenue growth as an indicator of maturity and market saturation, where lower revenue growth is closer and beyond the value of a matured company at 1.0. We align the variable to the scale design by transforming the variables to *1 –Rgrowth*.

Assets value asymmetry occurs due to information asymmetry between the companies and potential investors. Companies undergo CSOs to bring the attention of investors to the spun-off components and reduce the parent company's size to minimize information barriers (Chemmanur & He, 2016; Feldman, 2016a; Habib et al., 1977; Prezas & Simonyan, 2015). A lower TobinQ

meant a company is undervalued and therefore closer to high information asymmetry, close to or higher than 1.0. Similarly, we align the variable to the scale design by transforming the variables to 1 – *TobinQ*.

The detachment of components in CSOs may be motivated by the operational benefits brought upon by improving focus of the company and minimising dis-synergy (Cusatis et al., 1993; Desai & Jain, 1999; Gilson et al., 2001; Hite & Owers, 1983; Schipper & Smith, 1983; Yoon & Ariff, 2007; Yoon & Yoon, 2022). We designate 1.0 as the highest focus improvement by subtracting 1 from the measured variable. Measured variables increase by 0.5 for every matching SIC code. Tentatively, when the spun-off component's first and second SIC code digits were the same as the parent company, the focus improvement value becomes 0.0.

In theories of wealth appropriation, the gearing ratio post-spin-off often translated to a higher positive wealth effect (Yoon & Yoon, 2022). It assumes post-CSO debts consist of debts with inadequate debt reconstruction that benefit shareholders at the expense of debtors (Aggarwal & Garg, 2019; Galai & Masulis, 1976; Schipper & Smith, 1983; Yoon & Yoon, 2022). In pre-CSOs, a high gearing ratio meant higher stakeholder resistance and thus lowered the likelihood of spin-off. To emulate this argument, we apply the same transformation 1- *WT*.

Like asset value asymmetry, earnings asymmetry also occurs due to information barriers concerning a company's earnings (Nanda & Narayanan, 1999). Computing a company's price-to-earnings (PE) ratio allows an assessment of whether a company is overvalued or undervalued. If a company's stock is undervalued, it motivates the company to perform CSO to attract commensurate investment (Chemmanur & He, 2016; Feldman, 2016a; Krishnaswami & Subramaniam, 1999). Cases with a lower PE Ratio come closer to 1.0 for a high level of information asymmetry. To achieve this, we transform the variables to 1- *PE*.

3.4 Calibration

Every outcome and causal conditions measurements are further calibrated to a 0.0 – 1.0 scale for fsQCA by employing the minimum value as total absence of membership, the maximum value in the dataset as full membership, and the mean value taken as ambiguous. Noting that there is no rule of thumb, otherwise known as "direct" value that determines the breakpoint of memberships, we employ this approach with the considerations (i) the datasets comprise data points of non-spinoffs and spinoffs data, (ii) the data points of both spectrum cover all companies, and (iii) the data structure is homogenous across the dataset. Combined with transformation efforts of variables, this allows better interpretation where for any given dataset, those nearer to the lowest value of the set are designated as low membership, and vice versa, those closer to the highest value of the set are designated as higher membership with mean value being the break point as ambiguous. A descriptive table of the data is presented in Table 4.

Table 4: Descriptive Statistics and Calibration Value

Variable	Descriptive Statistics/Calibration Value			
	Std. Dev.	**Minimum (Absence)**	**Mean (Ambiguous)**	**Maximum (Presence)**
Spinoff	0.3614	0.000	0.4285	1.000
RGrowth	0.5832	-5.099	0.7079	1.720
TobinQ	0.1257	0.306	0.8835	0.998
Focus	0.4045	0.001	0.6941	1.000
WT	1.0509	-6.205	0.1829	1.000
PE	0.2152	-0.591	0.7512	0.980

4. RESULTS AND DISCUSSION

4.1 Main Analysis

We report the results of the necessity and sufficiency test along with the Truth Table algorithm. Calibrated variables are prefixed with "fs". Table 5 presents the necessity test result for all conditions that lead to a high presence of CSOs. Guided by Ragin (2009) and various literature, it is the convention that conditions with a consistency score exceeding 0.9 are "always necessary" and if the score is lower than 0.9 but exceeds 0.8 it is "almost always necessary". Whereas, the conditions are required to exceed the widely accepted threshold of 0.25 as a minimum benchmark to be considered meaningfully relevant for coverage. We note none of the conditions has a consistency score ≥ 0.9, suggesting no causal condition should be considered "necessary" if the companies decide to spin-off. Nevertheless, the consistency score of fsRGrowth, fsTobinQ, fsWT and fsPE are ≥ 0.8 or very close to 0.8, signifying a higher presence of Maturity, Asset Value Asymmetry, Debt Restructuring and Earnings Asymmetry indicators are "always almost present" when companies decide to perform CSO (Ragin, 2009).

Table 5: Necessity Analysis Results for Presence of Spin-off

Conditions	Outcome Variable: fsSpinoff	
	Consistency	**Coverage**
fsRGrowth	**0.78**	0.61
~fsRGrowth	0.56	0.65
fsTobinQ	**0.80**	0.56
~fsTobinQ	0.46	0.64
fsFocus	0.70	0.52
~fsFocus	0.44	0.56
fsWT	**0.80**	0.53
~fsWT	0.46	0.70
fsPE	**0.83**	0.55
~fsPE	0.43	0.66

Notes: The symbol "~" stands for "absence of"

By matching the intermediate solution with the parsimonious solution, we identify the core conditions among the variables, which translates to a stronger causal relation with CSOs outcome (Fiss, 2011). Following the recommendations of Ragin (2008), we set the cut-off threshold as 0.8 and a frequency cut-off of 3 after sorting 280 observations by frequency and consistency. The results returned 3 different configurations that lead to a high presence of CSOs presented in Table 6.

All configurations have coverage that is >0.25 and has a strong consistency of >0.8 or very near 0.8. The overall solution itself has a high 0.78 consistency score and a coverage score ≥ 0.25, supporting the causal claim that conditions were interactive and in configurations, they are necessary to the presence of CSO outcome.

Condition fsRGrowth and fsTobinQ are almost always present in the presence of CSO outcome. This finding suggests a causal relationship between both conditions and the outcome of a spin-off. A high presence of fsRGrowth is consistent with Chen and Guo (2005) suggestion stating large businesses trying to escape stagnating revenue growth are likely to undergo CSO to improve their growth opportunities. Whereas fsTobinQ's finding is in line with Chemmanur and He (2016), Feldman (2016a) and Prezas and Simonyan (2015) on the information barrier.

Table 6: Truth Table fsSpinoff as Outcome

	1*	**2***	**3**	**-**	**-**	**-**	**-**	**-**
fsRGrowth	•		•					
fsTobinQ	•	•	o					
fsFocus		•						
fsWT	o	o	o					
fsPE	o	o	•					
R. Coverage	0.2942	0.2539	0.2728					
U. Coverage	0.0286	0.0069	0.8282					
Consistency	**0.8069**	**0.8282**	0.7833					
Overall Solution Consistency			**0.78**					
Overall Solution Coverage			**0.34**					

Notes: Full black circles "•" represent the presence of a condition, and white circles "o" indicate its absence. Larger circles indicate core conditions and small circles refer to peripheral conditions. Blank spaces indicate that the condition may be either present or absent (Fiss, 2011); (Woodside et al., 2015). * denotes configurations that have coverage >0.25 and consistency >0.8

Interestingly, fsWT is reported absent from all the configurations. However, fsWT is still relevant to explain CSOs outcomes when combined with other conditions. For example, configurations 1 and 3 fit the profile of a CSO in companies with a "capital seeking" strategy. We also note that all other variables are present in at least one configuration. Thus, all financial conditions suggested in this study are sufficient in at least one of the configurations that result in CSO outcomes, and they have predictive power.

The overall solution suggested that the conditions are largely asymmetric and there are no dominant CSO conditions with fsTobinQ, fsWT and fsPE being core conditions when absent. In configurations 1 and 2, the spin-off company shows the presence of fsTobinQ as a peripheral condition when fsWT and fsPE were absent. Conversely, the presence of fsPE is necessary in configuration 3. All conditions except fsWT lead to the presence of CSOs when combined with other conditions.

The asymmetric nature can further be seen in the results of fsFocus. From necessity analysis, the fsFocus did not reach 0.8 consistency and is considered "not necessary" to the presence of CSO outcome. However, fsFocus forms part of configuration 2 and the overall solution of Table 6. The findings do not contradict the corporate focus and value creation suggestion from Yoon and Ariff (2007) and Yoon and Yoon (2022). The solution simply suggests when a portion of the company has different strategic priorities, the parent company conducts CSO to focus resources irrespective of whether there is a revenue growth stagnation. After all, businesses might spin off their growing business units to opportunistically focus resources on business components with promising growth prospects. The same can happen when business components are sufficiently matured, where they will be more profitable or have less operating cost if they control their resources. Under these circumstances, a CSO is motivated to release the matured business components from the parent organisation and establish them into an operational independent entity. This result has reconciled predecessor findings for CSO literature in Malaysia, where the Focus condition is sufficient for the

corporate to undergo CSO (Yoon & Ariff, 2007; Yoon & Yoon 2022), but not necessary for CSO (Nadisah & Arnold, 2017).

4.2 Supplementary Analysis

Table 7 presents supplementary necessity test results for conditions with CSO absence as an outcome, denoted as ~fsSpinoff. Amongst the variables, only fsWT and fsPE have a consistency score ≥ 0.8. Given that this is a ~fsSpinoff solution, we do not interpret them as "almost always necessary" to the absence of CSOs. Instead, we comprehend them as "mostly present" in the absence of CSOs.

Table 8 shows eight different causal configurations relative to the absence of CSO outcome (~fsSpin-off). Five configurations, B, C, D, F and H returned consistency of >0.8. Overall solution returned a mediocre consistency of 0.73 and coverage ≥ 0.25. However, unlike the fsSpinoff solution, configurations B, E, F and H returned a <0.25 coverage value. Given the low coverage, these configurations are not very compelling as they describe too few cases. Hence, we suggest a company "almost always" will not engage in a spin-off if combinations of variables in configurations C and D are present.

Table 7: Necessity Analysis Results for Absence of Spin-off

Conditions	Outcome Variable: ~fsSpinoff	
	Consistency	**Coverage**
fsRGrowth	0.73	0.66
~fsRGrowth	0.57	0.74
fsTobinQ	0.77	0.62
~fsTobinQ	0.46	0.72
fsFocus	0.70	0.60
~fsFocus	0.43	0.62
fsWT	**0.83**	0.64
~fsWT	0.39	0.69
fsPE	**0.80**	0.62
~fsPE	0.42	0.74

Notes: The symbol "~" stands for "absence of"

We also note that many configurations report fsPE and fsRGrowth as absent, among them being configurations C and D. This indicates the combination of fsPE and fsRGrowth being absent is a strong indicator to look for when determining whether a company will abstain from CSO. This indicator is consistent with configurations 1 and 3, whereby at least one of fsPE and fsRGrowth conditions must be present to anticipate CSO outcomes.

Table 8: Truth Table ~fsSpinoff as Outcome

	A	**B**	**C***	**D***	**E**	**F**	**G**	**H**
fsRGrowth		•	o	o	•	o		o
fsTobinQ		•	•	o		•	•	•
fsFocus	•	o	•	•	o	o		o
fsWT	•				o		•	•
fsPE	o	o	o	o	•	•	o	
R. Coverage	0.3294	0.1996	0.3031	0.3034	0.2087	0.2484	0.3768	0.2461
U. Coverage	0.0055	0.0009	0.0018	0.0379	0.0283	0.0028	0.0038	0.0011
Consistency	0.7819	**0.8141**	**0.8125**	**0.8073**	0.7764	**0.8137**	0.7831	**0.8349**
Overall Solution Consistency			0.73					
Overall Solution Coverage			0.53					

Notes: Full black circles "•" represent the presence of a condition, and white circles "o" indicate its absence. Larger circles indicate core conditions and small circles refer to peripheral conditions. Blank spaces indicate that the condition may be either present or absent (Fiss, 2011), (Woodside et al., 2015). * denotes configurations that have coverage >0.25 and consistency >0.8

As for the fsWT condition, despite being a core absent condition in the fsSpinoff solution, it has negligible results in supplementary analysis. In particular, fsWT is reported as a "don't care" condition for configurations C and D. As for fsFocus, it was present as a peripheral condition for configurations C and D, which meant its presence is relatively weak against fsPE and fsRGrowth.

Through configurations 1, 2 and D, we note fsTobinQ to be an intermediate indicator for both fsSpinoff and ~fsSpinoff solutions. Its presence or absence can lead to fsSpinoff and ~fsSpinoff outcomes only when combined with other indicators.

Finally, we re-discuss the asymmetric aspect of the solutions. By matching the fsSpinoff solution and ~fsSpinoff solution, the conditions that exhibit closest to a symmetrical pattern for the earlier was fsWT and for the later fsPE. However, the pattern diminishes when the alternate solutions are analysed. The same applies when we match configurations 1, 2 and 3 to configurations C and D.

5. CONCLUSION

5.1 Summary

This paper aims to identify configurations or profiles of diverse financial and economic indicators that precede or lead to corporate spin-offs among companies listed on the Bursa Malaysia, which possess distinctive characteristics typical of an emerging market. To achieve the goal, we examined the financial and economic factors related to CSO outcomes to predict the occurrence of spin-offs using pre-CSO conditions. Using fsQCA, we piece standalone theoretical indicators into combinations and provide multiple localised solutions as algorithms to predict CSO outcomes using 280 data points from 40 CSOs. As a result, we established three combinations of variables

that motivate companies to perform CSO and one compelling configuration of conditions that deter companies from undertaking CSO. Both solutions returned overall strong consistency and coverage value which led us to conclude causal conditions were interactive, matching results of both solutions empirically proved that the variables' relations are asymmetrical.

Substantiated by the necessity test, we find individually, fsRGrowth, fsTobinQ, fsWT and fsPE should "always almost present" for a CSO outcome. Nevertheless, when put in configurations none of the conditions, including fsFocus is dispensable. For causal conditions leading to CSO outcome, there is no dominant combination for CSO outcome, each of the three configurations is equally compelling antecedents.

Although there is no dominant combination for expecting CSO outcomes, the supplementary analysis identified fsPE's absence, when combined with fsRGrowth's absence resulted in a dominant combination for companies to abstain from CSO. In other words, the findings indicate that investors should closely monitor companies whose financial and economic profiles align with the three distinct configurations identified as precursors to corporate spin-offs. Conversely, one dominant combination of factors can signal a company's likelihood to abstain from engaging in CSO activities.

These results meant fsRGrowth, fsTobinQ, fsWT and fsPE were, on the premise of *positive wealth effect CSOs theories indicators applicable as antecedents for CSOs*, they are aligned to hypothesis H1a: *causal conditions are interactive, individually and in configurations are necessary and sufficient factors for CSO outcomes.* Whereas fsFocus is aligned to hypothesis H1b: *individually, the causal conditions are insufficient but necessary part of a condition which is itself unnecessary but sufficient for CSO outcomes*. The alignment of variables to hypotheses H1a and H1b do not contradict any previous literature. Instead, our findings reaffirm and reconcile differences in the suggested determinants in Yoon and Ariff (2007), Nadisah and Arnold (2017) and Yoon and Yoon (2022) as spin-off antecedents by demonstrating the relevant conditions are asymmetrically and intricately linked to each of the combinations found. We can look beyond single indicators one at a time to predict CSOs because we now understand the interactions and asymmetrical aspects of variables in combination and multiple dimensions.

5.2 Implications, Limitations and Suggestions

In addition to the implications for the fragmented and parallel CSO literature, this paper offers proactive, actionable insights to investors. Equipped with the ability to foresee impending CSOs and assess their reduced probability based on the antecedents identified in this study, investors can make more informed decisions to acquire or divest favourable company shares. Furthermore, this research empowers managers to better time the execution of CSOs, and enables policymakers to better understand the conditions that encourage or deter such corporate restructuring activities.

However, there are certain limitations in the approach used in this paper. Firstly, as most indicators examined are quantitative financial data, there is no rule of thumb or direct values to establish breakpoints for variable calibration. The approach used is highly subjective to the values within the identified dataset. Secondly, one of the limitations of the fsQCA approach is that the result is confined to the causal conditions identified. Given the complexity of CSOs, there may be other

causal conditions that may yield better theoretical advancement. We therefore encourage future studies to include control variables for better "path" or configurations discovery and explore novel variables.

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