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A special issue devoted to

Deglobalisation: Challenges for Emerging Countries

Guest Editors

Ratih Dyah Kusumastuti, Tengku Ezni Balqiah & Dony Abdul Chalid

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Journal of Social Sciences & Humanities
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The *Introduction* explains the scope and objective of the study in the light of current knowledge on the subject; the *Materials and Methods* describes how the study was conducted; the *Results* section reports what was found in the study; and the *Discussion* section explains meaning and significance of the results and provides suggestions for future directions of research. The manuscript must be prepared according to the Journal's **INSTRUCTIONS TO AUTHORS**.

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4. The authors decide whether and how to address the reviewers' comments and criticisms and the editor's concerns. The authors return a revised version of the paper to the chief executive editor along with specific information describing how they have answered' the concerns of the reviewers and the editor, usually in a tabular form. The author(s) may also submit a rebuttal if there is a need especially when the author disagrees with certain comments provided by reviewer(s).

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7. If the decision is to accept, an acceptance letter is sent to all the author(s), the paper is sent to the Press. The article should appear in print in approximately three months.

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JOURNAL DIVISION
Office of the Deputy Vice Chancellor (R&I)
1st Floor, IDEA Tower II
UPM-MTDC Technology Centre
Universiti Putra Malaysia
43400 Serdang, Selangor Malaysia.
Gen Enq.: +603 8947 1622 | 1616
E-mail: executive_editor.pertanika@upm.my
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PUBLISHER

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Universiti Putra Malaysia
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Preface

It is our great pleasure to present this special edition of Pertanika Journal of Social Sciences and Humanities. Consisting of 19 papers, they were selected from the 11th International Conference on Business and Management Research (ICBMR) 2017, which was held in Padang, West Sumatra, Indonesia from 1-3 November 2017.

The papers cover various topics ranging from finance, human resources management, marketing, general and strategic management, Islamic finance, accounting, and economics. The Journal believes the content would be of great interest to academics and the industry and inspire further research in business and management area.

All the papers published in this edition underwent Pertanika's extensive peer-review process involving a minimum of two reviewers comprising internal as well as external referees. This was to ensure the quality of the papers justified the high ranking of the journal, which is renowned as a heavily-cited journal not only by authors and researchers in Malaysia but by those in other countries around the world as well.

We take this opportunity to thank the reviewers, authors and the editorial team at Management Research Center, Department of Management, Faculty of Economics and Business, Universitas Indonesia, and the editorial team at UPM, for their hard work and commitment to make this special issue possible. We also express our gratitude to Head of Research and Innovation Products Management Office (KPPRI), Universitas Indonesia and the Dean of Faculty of Economics and Business, Universitas Indonesia.

The guest editors of this special publication are indebted to the Chief Executive Editor, Dr. Nayan Kanwal, Journal Division, Pertanika Journals for his unrelenting effort, leadership, courage and dedication to improving the quality of this issue.

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Ratih Dyah Kusumastuti *(Dr.)*
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Impact of IFRS Financial Instruments on Market Discipline: Evidence from Indonesia's Banking Sector

Viska Anggraita[1], Hilda Rossieta[1]*, Ratna Wardhani[1] and Buddi Wibowo[2]

[1]Department of Accounting, Faculty of Economic and Business, Universitas Indonesia, Kampus UI Depok 16424, Indonesia
[2]Department of Management, Faculty of Economic and Business, Universitas Indonesia, Kampus UI Depok 16424, Indonesia

ABSTRACT

The International Financial Reporting Accounting Standards (IFRS) of financial instruments were implemented in 2010. It was found to have major impacts on risk transparency of the banking industry in Indonesia. This study examines the impact of IFRS of financial instruments on market discipline of banks in Indonesia. Data from the study period between 2007 and 2013 was analysed, and findings show an increase in market discipline after the implementation of the IFRS of financial instruments. Specifically, the quality of loan loss provision information and the disclosure of financial instruments based on IFRS in financial statements had improved market discipline among Indonesian banks. The study therefore, concludes transparency of risk information in financial statements enhances the ability of bank stakeholders to perform monitoring functions, which in turn enables effective market discipline.

Keywords: Financial statements, financial instruments, IFRS, market discipline, risk transparency

INTRODUCTION

The adoption of IAS 32, IAS 39, and IFRS 7 with regard to financial instruments is part of the convergence program of Indonesian accounting standards (PSAK) with international accounting standards (IFRS). The implementation of these international accounting standards significantly changed the scope, recognition and measurement, presentation, and disclosure of financial instruments in banks' financial statements. Indeed, implementation of IFRS for financial instruments has had a positive effect on the quality of financial statements. Prior research has examined the impact of IFRS

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E-mail addresses:
viska257@gmail.com (Viska Anggraita)
enjum9@gmail.com (Hilda Rossieta)
ratnawardhani@yahoo.com (Ratna Wardhani)
wibowo_buddi@yahoo.com (Buddi Wibowo)
* Corresponding author

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on financial instruments using data from developed countries and found adoption of IAS 39 increases the relevance of accounting information (Duh, Hsu, & Alves, 2012; Fietcher, 2011) and decreases earnings management through loan loss provision (Leventis et al., 2011). Additionally, the disclosure of financial instruments based on IFRS 7 enhances the ability of users of financial statements to understand and interpret their contents (Bonetti, Mattei, & Palmucci, 2012; Gaynor et al., 2011).

Transparency is one of the important components that enable market discipline mechanisms to function (Bliss & Flannery, 2002; Nier & Bauman, 2006). Market discipline refers to market's power for taking disciplinary action against the bank management's excessive risk-taking behaviour (Hess & Feng, 2007). The market discipline mechanism can function due to the ability of stakeholders, including debtholders and shareholders, to influence the cost and funds available for the company as well as the valuation of company assets (Landskroner & Paroush, 2008). Banks which conduct their activities transparently make it easier for depositors, creditors, and governments (as agents of taxpayers) to observe the bank's risk choice to facilitate timely disciplinary action if the management takes excessive risks. Thus, the quality of accounting information and the disclosure of financial instruments affects the ability of stakeholders to perform monitoring and disciplinary functions on bank management's risk taking (i.e., market discipline). Previous studies reported that quality of financial statements and extent of disclosures increased the effectiveness of market discipline on bank risk taking (Bushman & William, 2012; Nier & Bauman, 2006).

The purpose of this study is to investigate the effect of IFRS on the implementation of financial instruments, accounting information quality, and financial instruments disclosures on market discipline in the Indonesian banking sector. This paper contributes to the extant literature in two respects. First**,** it is one of the first studies to examine the effect of financial instruments accounting standards on market discipline in the banking industry. Prior research has mainly examined the consequence of financial instruments accounting standards on the relevance of financial statements from the perspective of equity investors (Barth et al., 1996; Duh et al., 2012; Song et al., 2010). In the banking industry, the implementation of IFRS for financial instruments affects the transparency of bank risk choices, which is important in allowing banks' liabilities investors to perform their monitoring function. Second, this paper examined the effect of financial instruments disclosures based on the effect of IFRS 7 on market discipline. Only a few studies have done this (Nier & Bauman, 2006). Although the disclosure proxy in Nier and Bauman (2006) measures the disclosure level in the bank's financial statements as an indicator of risk, the measurement has not yet accommodated the financial instruments disclosures based on IFRS 7. The financial instruments disclosures required by IFRS

7 are comprehensive and complex; thus, more resources are required to prepare them. Therefore, this study investigates whether such complex disclosures are useful for the bank's main stakeholders, such as depositors, other creditors, and regulators, in performing their monitoring function. Indonesian banking sector has unique characteristics in addition to having lower levels of penetration compared with other Southeast Asian countries, such as Singapore, Thailand, and Malaysia. However, Indonesian banking sector is considered one of the most attractive markets for financial institutions in Southeast Asia due to their high margin and healthy economic growth (EY, 2017). Indonesian banking presents several challenges, such as the large number of banks (currently 118 banks (EY, 2017) with different sizes and controlling shareholders (government, foreign, and family) and highly concentrated ownership structure, which might hinder the efficiency of the banking system. These unique characteristics means there is a need for separate research on the impact of IFRS on financial instruments in the Indonesian banking industry.

LITERATURE REVIEW

Implementation of IFRS for Financial Instruments in the Banking Sector

Three important features of IFRS for financial instruments affect the risk transparency in Indonesian banks' financial statements. First**,** IAS 39 uses an incurred loss model, which places more emphasis on objective evidence, and which becomes the basis of the decline in value, and it also places more emphasis on the evaluation of the possibility of decline at the balance sheet date. This policy is more objective than previous accounting standards, and thus, it is expected to reduce the earnings management through loan loss provision. Second, IAS 39 increases the usage of fair value accounting for financial assets and financial liabilities compared with the previous local accounting standards. The usage of fair value is expected to cause the financial assets and liabilities information in the balance sheet to better reflect its true value. In addition, even though fair value increases income volatility, the latter reflects the true risk faced by the bank. Third, IAS 32 further revised to IFRS 7 requires more disclosures than previous Indonesian accounting standards. The IAS 32 further revised to IFRS 7 requires the disclosure of information about the significance of financial instruments to an entity, and the nature and extent of risks arising from those financial instruments, both in qualitative and quantitative terms. The IAS 32 and 39 were required to be applied in 2010, but due to many banks experiencing difficulties in implementing them, in 2010, banks were allowed to apply IAS 39 partially; for example, calculating valuation reserves collectively can be valued by using Bank Indonesia Regulations instead of being based on IAS 39. Nonetheless, in 2011, all banks had to completely adopt Indonesian IAS 32 and IAS 39.

Hypothesis Development

Market discipline refers to a market-based incentive scheme in which market participants (bank liability investors, such as creditors and depositors) monitor and discipline (punish) banks for excessive risk taking (Nier & Baumann, 2006). Bank transparency is important in the monitoring phase of the market discipline process and it affects the ability of a bank's main principals (i.e., creditors and depositors as liability investors, and also regulators) to observe bank risk choice. Financial statements as an instrument used by management to provide information to capital owners and depositors can describe the actual extent of risk through the non-performing loan value of losses reserved and disclosures of risks. A bank that discloses its risk profile exposes itself to market discipline, and will therefore be penalised by investors for taking excessive risks. Cordella and Yayeti (1998) showed that when a bank can choose its loan portfolio risk, then the disclosure of information regarding the risk chosen by the bank will reduce excessive risk-taking incentives, thereby reducing the possibility of bank failure. Prior studies found that corporate transparency can boost shareholder's wealth, as increased transparency improves the company's external parties' monitoring capabilities. In Indonesia, Widiastuti (2002) found the extent of voluntary disclosure in the financial statements reduces the uncertainty of the company's future prospects while companies with less transparent financial statements tend to suffer from over investment (McNichols & Stubben, 2008). Nier and Baumann (2006) found extensive disclosure increases the effectiveness of market discipline in banking. Bushman and William (2012) revealed that opportunistic forward-looking loan loss provision (for income smoothing purposes) reduces the effectiveness of market discipline. Accordingly, based on arguments and relevant findings of the previous studies, the following hypotheses are proposed:

H1: Financial instrument disclosures in accordance with IFRS 7 positively affect market discipline among Indonesian banks.

H2: Accounting information quality as measured by the level of earnings management through loan loss provision positively affects market discipline in Indonesian banking.

The implementation of IAS 39 increases the risk relevance of accounting information because the adoption of fair value accounting causes the financial instruments recognised in the balance sheet to better reflect the actual current market situation. Increased usage of fair value measurement reduces earning volatility, which is unrelated to economic volatility (Duh et al., 2012). Barth et al. (1995) argued that the recognition of fair value changes in the balance sheet represents the more accurate variability of assets and liabilities than the other measures, such as historical cost. Ryan (2008) believed that the use of fair value accounting on financial instruments will improve the association between market

risk measurement and profit variability, while Duh et al. (2012) found that there was an increase in profit volatility in non-US commercial banks after the application of IAS 39. Duh et al. (2012) also found that the association between earnings volatility and risk (as measured by credit rating) increases after the implementation of IAS 39, which indicates an increase in the risk relevance of earnings. The IAS 32 further revised by IFRS 7 requires disclosures of information about the extent to which the entity is exposed to risks and requires disclosures of concentrations of risk and a sensitivity analysis of each type of market risk to which the entity is exposed to.

These changes in Indonesian accounting standards due to the adoption of IFRS for financial instruments increases the transparency in the bank's financial statements, particularly information regarding the exposure and bank risk choice. Thus, the adoption of IFRS for financial instruments increases the monitoring ability of the bank's liabilities investor so that there is an increase in the effectiveness of market discipline. Accordingly, the third hypothesis is proposed:

> H3: The adoption of IFRS for financial instruments positively affects market discipline in the Indonesian banking industry

METHODS

Data and Sample

This study examined data from all 109 commercial banks operating in Indonesia during 2007-2013. Only 64 banks had annual reports published since 2007 and out of that figure, only 30 banks are listed on the Indonesia Stock Exchange while 34 are not. This study was conducted three years before the implementation of IAS 32 / IAS 39 (2007-2009) and four years after its implementation (2010-2013). The pre-implementation period used in this study only cover three years because most banks' annual reports before 2007 are not available on the website of banks and other databases. A final sample of 408 bank-years was obtained. Only secondary data are available and accessed through the Economics and Business Data Center FEB UI (translated from Pusat Data Ekonomi and Bisnis a.k.a. PDEB UI) obtained from Thomson Reuters Datastream and Direktori Perbankan Indonesia accessed through the Central Bank of Indonesia's website (www.bi.go.id). Financial instruments disclosures and other data not available in Thomson Reuters Datastream was collected from bank's annual report from 2007 to 2013. Following prior researches (Ge & Liu, 2015; Numan & Willekens, 2012; Richardson & Taylor, 2015), to overcome the effect of outliers, all regression variables in all models were winsorised at the top and bottom 1% level.

Research Model

Disciplinary action can be in two forms: ex post discipline and ex ante discipline (Bliss, 2004). Ex post discipline arises as a market reaction to the actions of managers. Ex post discipline is the effect given by depositors and the banks shareholders

as pressure (i.e., deposit withdrawals or increase in the interest rate) on the bank's excessive risk-taking behaviour, so that later, the bank can reduce the level of risk taken. Ex ante discipline occurs when the bank management considers the impact of changes in risk in banks to make new decisions related to financial policy in capital cost and availability (i.e., capital buffer or leverage). This research will test the ex ante form, and the ex post form in an additional test. Additional testing with the ex post approach is necessary because the ex ante approach examines the effect of IFRS implementation on agent behaviour (bank manager) while the ex post approach examines the effect of IFRS implementation on the principal ability of the monitoring agent. Using both approaches will add robustness to the results of this study.

Main Test: Ex Ante Approach

In order to examine the impact of IFRS for the implementation of financial instruments on the market discipline of bank risk-taking, this study used an ex ante approach adopted in prior researches (Fonseca & Gonzalez, 2010; Hess & Feng, 2007; Lindquist 2004; Nier & Bauman, 2006). The model used relates factors affecting capital buffer. According to Nier and Bauman (2006), a strong market discipline will encourage banks to limit their default risk by choosing a higher level of capital buffer for a given assets risk after controlling for other factors affecting the amount of bank capital. Accordingly, empirical model used to test hypotheses 1 and 2 is presented below:

$$CBUFF_{i,t} = \alpha_0 + \alpha_1 CBUFF_{(i,t-1)} + \alpha_2 ALLP_{it} + \alpha_3 DISC_{it} + \alpha_4 RISK_{it} + \alpha_5 ROE_{it} + \alpha_6 SIZE_{it} + \alpha_7 MPOWER_{it} + \alpha_8 GDPG_{it} + \alpha_9 INFL_{it} + \alpha_{10} PSP_{it} + \alpha_{11} UNDEP_{it} + \alpha_{12} CG_{it} + Error \quad (1)$$

where:

Dependent Variable: *CBUFF:* Capital Buffer. Following Fonseca and Gonzalez (2010), capital buffer is measured as the relative number, which is the difference between the capital ratio and the minimum capital ratio as determined by Bank Indonesia divided by the minimum capital ratio.

Independent Variable: *ALLP:* the quality of bank loan loss provision information. The ALLP is measured as the abnormal discretionary component of loan loss provision based on previous researches (Beaver & Engel, 1996; Kanagaretnam et al., 2004; Kanagaretnam *et al*., 2010).

DISC: the level of risk and financial instruments disclosures in the bank annual report measured as total risk disclosures score divided by maximum score. The risk disclosure index is developed based on IFRS 7 and the disclosure requirement from the bank regulator (OJK previously Bank Indonesia) SE BI. No.14/35/DPNP. The index of disclosure consists of the disclosure of credit risk, market risk, liquidity risk, operational risk, and fair value of financial instruments

Control Variable

All variables that have an effect on the amount of capital a bank holds as a buffer against risk were controlled based on prior research (Elizalde & Repullo, 2004; Fonseca & Gonzalez, 2010; Forssbaeck, 2011; Haddad, Agusman, Monroe, Gasbarro, & Zumwalt, 2011; Nier & Bauman, 2006). The control variables are as follows: (i) ***RISK***: risk assets are measured as a bank's non-performing loan divided by total assets; (ii) ***SIZE:*** size of bank measured as the natural logarithm of total assets; (iii) ***ROE:*** return on equity; (iv) ***UNDEP:*** uninsured funding (i.e., deposits not guaranteed by the government); (v) ***MPOWER:*** bank market power measured by the Lerner index from De Guevara *et al*. (2005); (vi) ***CG:*** corporate governance quality measured as corporate governance scoring, which measures the effectiveness of the bank's Board of Commissioners with its committee; (vii) ***GDPG:*** GDP growth rate; (viii) ***INFL:*** inflation rate; and (ix) ***PSP Own:*** percentage of ownership of controlling shareholder

To test hypothesis 3 in model 1, the variables ALLP and DISC will be replaced by the dummy variable for IFRS for the implementation of financial instruments (POST). This variable shows the impact of the implementation of IFRS of financial instruments (IAS 32, IAS 39, and IFRS 7) on market discipline. The POST will be assigned a value of 1 for samples in the period 2010 -2013 and a value of 0 for the sample in the 2007-2009 period.

When market discipline is perfect, the bank's choice of capital buffer for the given underlying risk exposure is likely to be efficiently high and vice versa (Nier & Baumman, 2006). Thus, the study is premised on the fact that banks for which market discipline is weak as a result of poor accounting information quality and low disclosures are likely to have a high risk of default and low capital buffer, all else being equal. The same interpretation applies when examining the effect of IFRS on the implementation of financial instruments. Banks for which market discipline is strong as a result of IFRS implementation are likely to have a lower risk of default and a high capital buffer, all else being equal.

Additional Test: Ex Post Approach

The ex post approach is tested by analysing the relationship between bank risk and interest rate on uninsured deposits and then interacting with the variables that influence the market ability of discipline with the bank risk variable. In this study, disclosure (DISC) variables, financial statement quality (DLLP and AI), and IFRS financial instruments implementation variables (POST) will be interacted with bank risk variables to test whether the variables improve market discipline. In this research, the bank risk variables used following Hadad et al. (2011), are: liquidity risk (LIQRISK), credit risk (CRRISK), and insolvency risk (ZSCORE).

Measuring the impact on market discipline by testing the interest rate sensitivity to the level of risk, the Basic Model below tests whether market discipline is effective:

$$INTDEPit = \alpha_0 + \alpha_1 INTDEP_{i,t-1} + \alpha_2 CRRISK\ it + \alpha_3 LIQRISK_{it} + \alpha_4 ZSCOREit + \alpha_5 ROE_{it} + \alpha_6 SIZE_{it} + \alpha_7 MPOWER_{it} + \alpha_8 GDPG_{it} + \alpha_9 INFL_{it} + \alpha_{10} PSP_{it} + \alpha_{11} UNDEP_{it} + \alpha_{12} CG_{it} + Error \quad (2)$$

where:

Dependent Variable: ***INTDEP:*** implicit interest rate is measured by dividing the total interest expense by the average of the deposit.

Independent Variable: (i) ***CRRISK:*** credit risk is measured by a loan loss reserve divided by total assets; (ii) ***LIQRISK:*** liquidity risk is measured by the ratio of liquid assets divided by total assets; (iii) ***ZSCORE:*** other risks, especially insolvency risk, are measured using ZSCORE.

Control variables are as defined in model 1.

The implementation of IFRS for financial instruments increases the effectiveness of MD when the dummy interaction of POST with CRRISK shows a positive sign, or when the dummy interaction variables with LIQRISK and ZSCORE show a negative sign. The same interpretation applies by interacting the accounting information quality (ALLP) and financial instruments disclosures (DISC) with the bank risk variables.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 1 shows the descriptive statistics of the sample. The average CAR of the sample bank is high at 20.34%, which is well above the minimum value set by BI / OJK of 8% before 2013 and 9.7% for 2013. The CAP buffer describes the available capital buffer relative to the minimum required amount BI / OJK; on average, the CAP BUFFER of the sample bank is 1.7 times the minimum required capital. The implicit interest rate is paid by the bank to depositors / creditors. Average interest rates paid by the sample banks to depositors and customers were 4.8% lower than the average SBIs during the study period at 7.1%.

The Results of Main Test: Ex Ante Approach

Following previous studies examining market discipline in banking (Fonseca & Gonzalez, 2010; Haddad et al., 2011; Maechler & McDill, 2003; Wu & Bowe, 2012), this study used a dynamic data model with generalised method of moments (GMM) estimators developed by Arellano and Bond (1991) because market discipline varies over time. All models satisfy the requirement of the GMM, including the Wald test, Sargan test, and Arellano-Bond test for testing zero autocorrelation on the first differenced error (Haddad et al., 2011). Column A in Table 2 shows the result of the influence of financial instrument disclosure (hypothesis 1) and loan loss provision information quality (hypothesis 2) on market discipline. Using the ex ante approach, the result shows the level of financial instruments disclosure and the quality of loan loss provision has a positive effect on the level of bank capital buffer. The higher level of disclosure of

Table 1
Descriptive statistics

Variable	Mean	Stdv	Min	Max	Variable	Mean	Stdv	Min	Max
Dependent Variables					**Dummy Variable**				
CARt	0.232	0.149	0.080	1.327	POST=1	**62.04%**	**255 bank years**		
CBUFFit	1.688	1.334	0.003	5.488	**POST=0**	37.96%	155 bank years		
INTDEP	0.048	0.019	0.002	0.136	**Bank Characteristics Control Variables**				
CAPBUFF	0.146	0.087	-0.1287	0.397	SIZE (ln)	10.055	0.751	7.416	11.865
Independent Variables					ROE	0.144	0.123	-0.358	0.639
CRRISK	0.025	0.021	0.001	0.091	UNDEP	0.042	0.049	0.000	0.196
NPL	0.026	0.024	0.000	0.104	MPOWER	0.383	0.200	-0.571	0.921
LIQRISK	0.264	0.122	0.005	0.723	PSP Own	0.723	0.227	0.220	1.000
ZSCORE	55.553	53.722	-2.586	232.114	**Macro Control Variables**				
ALLP					GDPG	0.059	0.007	0.044	0.066
DISC	**0.503**	**0.182**	**0.049**	**0.963**	INFL	0.06	0.018	0.043	0.102
N	400								

**Variables Explanation as defined in model 1 and model 2*

bank financial instruments makes it easier for bank stakeholders to observe the risks faced by banks and shows how management manages those risks. The more observable bank risk choices by bank stakeholders will improve the monitoring capabilities of bank stakeholders (depositors / creditors and regulators) so that market discipline will be more effective. Consequently, banks will be more cautious and will maintain the level of capital buffer they have. This is consistent with the findings of Nier and Bauman (2006), who, using an ex ante approach, found that disclosures improve market discipline.

Column B in Table 2 shows the results of model 1 to investigate the effect of IFRS for financial instruments implementation on market discipline (hypothesis 3). The result shows the implementation of IFRS for financial instrument (POST variable) has a positive effect on bank capital buffer. In the ex ante approach, the potential market disciplinary consequences cause managers to take action in accordance with the interests of the market from the beginning (ex ante). After the implementation of IFRS for financial instruments, banks tended to be more careful to maintain the level of bank capital buffer. This finding is consistent with Zhang's (2009) that the application of SFAS 133 using derivative accounting, which is increasingly stringent, encourages companies to adopt more prudent risk management. This shows that the implementation of new accounting regulations can influence management behaviour.

Table 2
The effect of accounting information quality and financial instrument disclosures on market discipline (Ex ante approach)

Variable	Prediction	Dependent Variable: CBUFFit			
		Model 1 (ALLP & DISC) (A)		Model 1 (IFRS) (B)	
		Coeff.	Reg.	Coeff.	Reg.
CBUFFT-1 (L1)	+	0.367	***	0.374	***
ALLP	**H1: -**	-6.788	*		
DISC	**H 2: +**	0.702	***		
POST	**H3: +**			0.291	**
CRRISK	+	-1.322		-1.655	
ROE	+	-2.799	***	-2.82	***
SIZE	-	-2.568	***	-2.223	***
MPOWER	+/-	-0.255		-1.066	***
GDPG	+/-	12.222	***	6.116	**
INFL	+/-	-8.558	***	-7.071	***
PSP OWN	-	-2.407	***	-1.684	**
UNDEP	+	5.202	*	6.193	**
CG	+	0.008		-0.091	
CONS		3.279		0.291	***
WaldTest/Sargan Test Prob		0.000/0.353		0.000/0.239	
Prob AR (1)/Prob AR (2)		0.020/0.170		0.017/0.167	
N		258		260	

******, **, *indicate significance at the 1%, 5%, and 10% levels***
Explanation of variables as shown in model 1 and 2

The Results of Additional Test: Ex Post Approach

Additional test results using the ex post approach is presented in Table 3.

Column B of Table 3 shows the disclosure of financial instruments improves market discipline in the Indonesian banking sector. This strengthens the relationship between insolvency and liquidity risk with interest costs. The qualitative and quantitative disclosure of risk exposure faced by banks increases the ability of depositors / creditors in disciplining bank management by increasing the interest rate charged to banks in the event of an increased risk. Opportunistic earnings management through loan loss provision causes the quality of loan loss provision information to be distorted, thus reducing the ability of stakeholders to observe bank risk so as to reduce the sensitivity of interest cost to risk. The quality of accounting information measured by the quality of loan loss provision information proved to affect positively the market discipline, especially for credit risk and liquidity risk. Column C of Table 3 shows the effect of IFRS for financial instrument implementation. The result shows an increase in market discipline after the implementation of IFRS for financial instruments especially for insolvency and liquidity risk. However, there is no increase in market discipline ability for credit risk and no increase in sensitivity of interest cost to credit risk after the implementation of IFRS for financial instruments. This may be due to the use of incurred loss model on IAS 39, which, although it is able to suppress earnings management, it tends to reduce the timeliness of reserve credit decline (loan loss provision) by limiting management's discretion to communicate expected future losses. Overall, most of the additional test results are consistent with the

main test results, that is, that the disclosure of financial instruments based on IFRS and the quality of accounting information positively affects market discipline. The implementation of IFRS for financial instruments has also proven to increase market discipline in Indonesian banking, mainly due to the increased disclosure of bank risk options under IFRS for financial instruments.

Table 3
The result of the additional test (Ex post approach)

Variable	Prediction	Dependent Variable: INTDEP					
		Model 2		Model 2a (Effect of Transparency)		Model 2c (Effect of IFRS)	
		(A)		(B)		(C).	
		Coeff. Reg.		Coeff. Reg.		Coeff. Reg.	
INTDEP(L1)		0.218	***	0.263	***	0.249	***
ZSCORE	**-**	-0.001	***	0		-0.001	
ALLP*ZSCORE	**H1: +**			-0.098	**		
DISC*ZSCORE	**H2: -**			-0.002	*		
POST*ZSCORE	**H3:-**					-0.001	**
CRRISK	+	-0.062	***	-0.086		-0.061	**
ALLP*CRRISK	**H1: -**			-11.04	***		
DISC*CRRISK	**H2:+**			0.0628			
POST*CRRISK	**H3:+**					-0.001	
LIQRISK	**-**	-0.011	***	0.002		-0.002	
ALLP*LIQRISK	**H1: +**			2.646	***		
DISC*LIQRISK	**H2: -**			-0.042	**		
POST*LIQRISK	**H3: -**					-0.017	**
CONTROL VARIABLES (Not presented in the table)							
Wald T / Sargan Test Prob		0.000/0.174		0.000/0.209		0.000/0.437	
Prob AR (1)/ AR (2)		0.003/0.410		0.002/0.415		0.0025/0.318	
N		257		276		257	

****, **, *indicate significance at the 1%, 5%, and 10% levels*
Variables Explanation as defined in model 1 and 2

LIMITATIONS OF THE STUDY AND CONCLUSION

The outcome of the implementation of IFRS for financial instruments with the ex ante approach shows the implementation of IFRS for financial instruments improves market discipline in the Indonesian banking sector. Consistent with this, the result of the implementation of IFRS for financial instruments with the ex post approach

shows an increase in market discipline after the implementation of IFRS for financial instruments, especially for insolvency and liquidity risk.

The quality of accounting information as measured by the quality of loan loss provisions information, and the disclosure of financial instruments are proven to affect the ability of market discipline of Indonesian banks. Tests with the ex ante approach indicate that the quality of loan loss provision information and the disclosure of financial instruments have a positive effect on a bank's capital buffer. Tests with the ex post approach show that the disclosure of financial instruments enhances market discipline for insolvency and the liquidity risk of banks while the quality of loan loss provision information improves market discipline for credit and liquidity risk. Overall, the result using ex ante and ex post approach shows transparency increases market discipline in Indonesian banking.

This study is subject to several limitations. First, the sample size is too small due to data unavailability and additionally, firms are limited to the banking industry in Indonesia. Future research may use a larger sample over a longer period to examine selected developing countries. Second, the index for financial instrument disclosures in this study is based on IFRS 7 and the bank regulation of SE No.14 / 35 / DPNP, which was mandatory in 2012. This study observation period covers 2007-2013; thus, it does not distinguish between voluntary or mandatory disclosure and their respective motivation may differ. Subsequent research may consider the difference in mandatory disclosure and voluntary disclosure of financial instruments in examining the relationship between the disclosures of financial instruments with market discipline.

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Investment Strategy in the Islamic Capital Market: Study on the Indonesia Stock Exchange

Zaenal Arifin

Universitas Islam Indonesia, Condong Catur, Sleman, Yogyakarta 55283, Indonesia

ABSTRACT

The Islamic capital market is a capital market selling Islamic stocks, and is traded based on Islamic principles. Currently, there are many capital markets providing Islamic stock. Islamic capital market concepts have been developed by a number of experts, such as Metwally (1992), Chapra (1992), and Taj-El-Din (2002). This study aims to create a model of investing in Islamic capital markets. It tests whether existing Islamic capital market models are adequate. The results of these tests show that Metwally's model is quite attractive in terms of return and risk, but is constrained by technical problems relating to capital markets that do not allow trade restrictions, as required by Metwally. In contrast, the Chapra model has no constraints in implementation, but its appeal does not consistently outperform or match existing capital market models. Therefore, the study will also examine Islamic capital market models that are both attractive to investors and can be effectively implemented. Findings of this research show the Islamic capital market model using a long-term investment strategy is an attractive option, and proves that investments over longer periods will generally yield higher annualised returns. The annual investment yields the greatest returns, followed by the period of a semester, and then quarterly. Investors who do not have large amounts of cash will generally only invest in certain stocks to serve as their portfolio. The strategy of selecting stocks based on price-to-book ratio (PBR) is quite successful in generating higher return/risk.

Keywords: Islamic capital market models, long-term investment strategy, price to book ratio, stock return

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E-mail address:
zaenalarifin.fe@uii.ac.id

INTRODUCTION

Developing an Islamic capital market involves screening for shares deemed to meet the requirements of Syariah-compliant stocks. These are listed in an index of Islamic shares. Shanmugan and Zahari

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(2009) assumed the first Islamic stock index to be established was the Dow Jones Islamic Market Index, in 1999. However, Mannan (2008) argued that Islamic stock has been acknowledged in Malaysia since 1983 when Bank Islam Malaysia Bhd issued 'Islamic stock' for the first time. Since then, various Islamic stock index has begun to emerge, including the Jakarta Islamic Index (JII) which began operating in 2000. The screening process for Islamic stock includes assessing the issuing business and its ascertaining its financial ratios. Unfortunately, the criteria used for such screening among different stock indexes are not standardised, which, according to Mahfooz and Ahmed (2014), affects the credibility of the Islamic stock index.

The performance of shares in the Islamic index is broadly similar to that of the the conventional one. Sadeghi (2008) used event study method to reveal the positive responses from investors during the launch of the Sharia index in the Malaysian capital market. Meanwhile, Siskawati (2011) highlighted the existence of co-integration between the Islamic index, either in Indonesia or Malaysia, and the DJIM global index. Still, when it is correlated to risk of investment, stock listed on the Islamic index carries a lower risk. Yusof and Majid (2007), for example, found that stock volatility in the Islamic index is not affected by interest rate fluctuation like in the conventional index. Nevertheless, the ratio of stock volatility in the Islamic index is still high, as reported by Kurniawan (2008).

The principal issue with conventional capital markets in violation with Islamic law is its speculative practice. Khan (1992) identified many trading mechanisms of the capital market that are in conflict with Islamic law, such as an assumption that shares can be sold several times before the actual stock is transferred, and an option instrument that enables the investors to buy stock at the current price while the stock will actually be transferred at a later point. In addition, Khan (1992) highlights the issue of non-genuine investors, or speculators; speculators seek to make a profit by utilising the fluctuation in stock price. Such actions were a trigger of the crises in the capital market that occurred in the United States in 1930 and 1987.

One factor driving speculative practices is an investor's intention to generate profit in a short period by pursuing undervalued stock and then selling it when it becomes overvalued stock. This investment strategy is frequently referred to as the 'active portfolio' strategy. Alternatively, an investor may choose to follow the passive portfolio strategy. According to Bodie, Kane and Marcus (2009), the passive strategy is preferred by smaller investors. The active strategy will only succeed with a large investment, and the technique used must be different with that employed by other investors. The passive strategy, which does not look for mispriced stock and rarely involves stock trading, limits speculative action.

Some scholars studying the Islamic capital market have attempted to create a

capital market model that has the ability to reduce or even eliminate speculative practices. For example, Metwally (1992) suggests restricting the trading period and implementing price limitation in order to prevent speculation. Chapra (1992) suggests directly prohibiting speculative practices such as short selling and margin trading, while Taj El- Din (2002) recommends the establishment of an institution to assess stock pricing in order to provide a guideline for uninformed investors. These ideas proposed by experts to protect the capital market from speculative practice, however, must be examined since it affects the attractiveness and technical feasibility and applicability of the capital market model. An Islamic capital market with the ability to yield the same returns as the conventional capital market will be appealing to the investor. If a model is appealing and technically feasible in terms of its application, such a model could serve as a reference point for the global Islamic capital market model.

This present study has two objectives. The first is to examine the suitability of the Metwally and Chapra models for the Islamic capital market. The second is to create an Islamic capital market model that is not only applicable but also attractive, and present a strategy for investing in that market. The establishment of an Islamic capital market model is crucial for the realisation of Islamic corporate governance in financial institutions. As suggested by Kasim, NuHtay and Salman (2013), an established Islamic capital market is required in order to realise a corporate governance framework, since the other two financial institutions, namely banks and insurance companies, already have established systems.

METHOD

The sample of this study consisted of companies listed on the Indonesia Stock Exchange. In examining the Metwally model, the samples used were the companies listed on the Jakarta Islamic Index (JII) between 2007 and 2013. On the other hand, for the examination of the Chapra model, the samples were drawn from the period three years prior to and three years following the enforcement of Dewan Syariah Nasional-Majelis Ulama Indonesia (DSN- MUI) on the conformity of stock trading on IDX in 2011. In order to evaluate the performance of Islamic capital market model using the passive portfolio management approach (long-term investment), samples of stock listed on JII in the period 2007 to 2014 were used.

The Metwally model (1992) offers a trading model for an Islamic capital market that requires the establishment of a Management Committee that determines the Maximum Share Price (MSP) of each share within the period of no later than three months. The MSP is the total equity divided by the total shares issued by the company. The Management Committee functions to ensure that all companies listed on the stock exchange adopt an acceptable accounting standard, and that stock trading only occurs in the week after the determination of MSP. An evaluation of the attractiveness of the Metwally model was conducted

by simulating it using a trading model that only conducts trading activities four times per year and the maximum price is equivalent to the equity book value. The stock performance achieved through this simulation was later compared with the real stock performance, in terms of both returns and risks. The statistical tool used to test the comparison was a simple t-test model. When the performance of the Metwally model is equal to or above the actual performance of the Indonesia capital market, it can be concluded that the Metwally model is attractive.

The Chapra model (1992) seeks to prevent speculative activities by limiting speculation, and only allowing cash shares purchase (prohibiting margin trading), and avoiding management malpractices. Based on the fatwa DSN-MUI No.80 of 2011, the Indonesia Stock Exchange is considered a capital market with trade mechanisms that satisfy Sharia. This is because speculative practices prohibited by Chapra are also forbidden on the Indonesian Stock Exchange. Therefore, since 2011, the Indonesian Stock Exchange has been a stock exchange that implements the Islamic market model initiated by Chapra.

The Chapra model was examined by comparing the performance of companies listed on JII prior to and upon the enforcement of DSN-MUI fatwa in 2011. Again, the statistical tool used to test the comparison was a simple t-test model. When the performance of the Indonesian Capital Market after the enforcement of DSN-MUI fatwa is higher than before the enforcement, then it can be concluded that the Chapra model is attractive. In this research, the performances were measured according to expected return, risk (standard deviation, and beta), Sharpe Index, Traynor Index, and Jensen Index.

Sharpe index = $(r_i - r_f)/\sigma_i$

Treynor index = $(r_i - r_f)/\beta_i$

Jensen index = $\alpha_i = r_i - [r_f - \beta_i (r_m - r_i)]$

Where, r_i = stock return, r_f = risk free rate, σ_i = standard deviation of stock return, β_i = beta of stock return, and r_m = market return.

The Islamic capital market model with a long-term investment approach was examined by comparing its quarterly investment, semi-annual investment, and yearly investment performance. To test the strategy of investing in the Islamic capital market, Price to Book Value (PBV) Ratio was used. The use of this ratio was inspired by Metwally's, model which uses the ratio to set the maximum price of stock. The performance of low PBV and high PBV stocks were compared to identify the best strategy for investing in Islamic stock.

RESULTS

Results of the Attractiveness Testing of the Metwally Model and Chapra Model

To test whether the Metwally model is attractive enough, the stock return/risk based on its model simulation was compared with the actual stock return/risk on the stock market. The results of this test are shown in Table 1.

Table 1
Comparison of the returns and risk among the Metwally Model – based returns and real returns

Year	Average Returns of Metwally model	Average Real Returns	Prob. Value	Standard Deviation of Returns under Metwally Model	Standard Deviation of Real Return	Siegel-Tukey Prob. Value
2007	0.241992	0.088100	0.2414	0.616995	0.074170	0.1071
2008	0.442291	-0.110499	0.1772	1.648056	0.110289	0.4886
2009	-0.383381	0.054914	0.2163	1.598671	0.029686	0.0001
2010	0.239186	-0.008555	0.0219	0.496341	0.059516	0.0212
2011	0.008205	-0.002926	0.8253	0.228640	0.020308	0.0000
2012	0.184488	0.006816	0.1864	0.662232	0.025774	0.0413
2013	0.132972	-0.010899	0.0000	0.090549	0.016990	0.8241
2007-2013	0.119408	0.007239	0.1547	0.943463	0.078442	0.0000

Table 1 shows the Metwally's model generated equal or higher returns compared with the real returns of stock during the period 2007 to 2013. The absolute average returns produced by the Metwally model were higher than the real returns, excluding the returns yielded in 2009. In addition, the average returns generated by Metwally model were significantly higher than the real return in 2010 and in 2013. Even though the Metwally's model has the potential to yield higher returns, the risks of stock embedded in this model are also high.

The attractiveness of the Chapra model was tested to whether the stocks listed on JII were able to perform better after the enforcement of DSN-MUI fatwa No. 80 of 2011. The performance of stocks listed on JII for the years 2007, 2009, and 2010 were compared to the performance of stock listed on JII for the years 2011, 2012, and 2013. Table 2 compares the performance of stocks listed in JII prior to and upon the issuance of DSN-MUI fatwa No. 80, based on real returns.

Table 1 shows the real returns of stock listed on JII prior to the enforcement of DSN-MUI fatwa No. 80 (ERI1) were higher. The total risks (standard deviations) decreased significantly, and systematic risks (beta) showed a non-significant difference. The Sharpe, Traynor and Jensen indices were used to calculate the return, along with the risk embedded within it. The test results for these indices in relation to the stock listed on JII prior to and upon the enforcement of DSN Fatwa are as follows (refer Table 3).

Table 3 shows using Sharpe measure of the stock listed on JII indicated a significant decrease upon the enforcement of the fatwa. There was no significant variance in the Traynor ratio, and the Jensen ratio showed a significant decrease. Thus, it can be concluded that the Islamic capital market based on the Chapra model, is less attractive because of its tendency towards lower stock return/risk.

Table 2
Comparison of real returns, standards deviation, and beta prior to and upon the enforcement of DSN-MUI Fatwa No.80

Method		**df**	**Value**	**Probability**
t-test: Return		356	4.624245	0.0000
t-test: STD		356	6.155552	0.0000
t-test: BETA		356	1.517053	0.1301
Category Statistics				
Variable	**Count**	**Mean**	**Std. Dev.**	**Std. Err. of Mean**
ERI1	179	0.035935	0.103933	0.007768
ERI2	179	-0.002355	0.038352	0.002867
STD1	179	0.176026	0.173510	0.012969
STD2	179	0.093424	0.046117	0.003447
BETA1	179	0.834426	2.527061	0.188881
BETA2	179	1.182332	1.740112	0.130062

Table 3
Comparing Sharpe, Treynor, and Jensen Measure prior and after of DSN-MUI Fatwa

Method		**df**	**Value**	**Probability**
t-test: Sharp		356	6.658640	0.0000
t-test: Traynor		356	1.418282	0.1570
t-test: Jensen		356	5.540117	0.0000
Category Statistics				
Variable	**Count**	**Mean**	**Std. Dev.**	**Std. Err. of Mean**
SHAR1	179	-0.028837	0.449071	0.033565
SHAR2	179	-0.367479	0.511192	0.038208
TREY1	179	0.005344	0.191463	0.014311
TREY2	179	-0.019238	0.130817	0.009778
JEN1	179	0.005437	0.123603	0.009238
JEN2	179	-0.059274	0.095622	0.007147

Model of Islamic Capital Market Using a Long-Term Investment Strategy

This paper examined the performance of Islamic stocks when a long-term investment strategy is used. The performance measures used were the returns and risks, and the long-term period categorised into quarterly, semi-annual, and annual. The first category, the quarterly period, refers to the Metwally model (1992), which uses quarterly reports (interim reports). The results are discussed below.

The first finding relates to the return of stock. Table 4 shows the comparison between the annualised total return using annual returns, semi-annual returns, and

quarterly returns. It further shows that the average annual return was higher than the average semi-annual returns, and semi-annual returns were higher than the average quarterly returns.

There is a tendency that the longer the selected time horizon, the higher the returns. This value will differ significantly if the transaction cost is also taken into account. In the last three columns of Table 4, the differences between the average annual returns and the average semi-annual returns, annual and quarterly returns, and semi-annual and quarterly returns are shown. The differences between the three columns are positive (0.0079; 0.0183; and, 0.015); this further supports the findings, which indicate annual returns are higher than the semi-annual returns and quarterly returns, that and semi-annual returns are higher than the quarterly returns.

The second finding is in relation to the stock risks. Table 5 compares stock risks between the annual, semi-annual, and quarterly periods.

Table 5 shows that, in general, the lowest risk occurred when the investor selected the quarterly time horizon, and the highest risk occurred with the semi-annual period. Therefore, it cannot be concluded a longer investment period will lead to lesser or greater risks. In general, the risk rules suggest that the longer the investment period, the greater the risk. The risk pattern and time horizon, however, are not fully applicable to Islamic share investment. It has been proven that the risk of investment in the annual period is lower than the risk of investment in the semi-annual period.

Another interesting finding is that such risks are classified according to the period in which the capital market operates under normal conditions, and in which the capital market operates under decreasing returns (such as in 2008 and 2011). During the normal period (2007, 2009, 2010, 2013,

Table 4
Comparison between the annualized total return using the annually, semi-annually, and quarterly returns

Year	Annualized total return			Differences of Annualized Total Returns		
	Annually	Semi-annually	Quarterly	Annually– Semi Annnuallly	Annuallly – Qaarterly	Semi-annually – Quarterly
2007	0.359057	0.32682703	0.3887639	0.032230347	-0.0297065	-0.0619368
2008	-1.02625	-1.04367717	-1.0332647	0.017424903	0.007012477	-0.0104124
2009	0.754216	0.70230689	0.6768777	0.051909356	0.077338529	0.02542917
2010	0.445649	0.45813105	0.4229463	-0.01248175	0.022702964	0.03518471
2011	-0.00253	-0.03201142	-0.0354135	0.029477665	0.032879746	0.00340208
2012	0.058604	0.00376085	-0.001922	0.054842769	0.060525619	0.00568285
2013	0.221399	0.254241	0.2588696	-0.03284205	-0.03747068	-0.0046286
2014	0.249578	0.32663523	0.2363041	-0.07705753	0.013273624	0.09033116
AVERAGE	0.132465	0.12452668	0.1141452	0.007937964	0.018319473	0.01038151

Table 5
Comparison of the stock risks among the annual period, semi-annual period, and quarterly period

Year	The average risk of term investment			Risk Differences		
	Annual	Semi-annually	Quarterly	T – S	T – K	S – K
2007	0.627314	0.64391418	0.6692367	-0.01659994	-0.04192246	-0.0253225
2008	1.128703	1.11259024	1.0992265	0.016112898	0.029476665	0.01336377
2009	0.531686	0.52868244	0.5216459	0.00300384	0.010040355	0.00703651
2010	1.057551	1.05705568	1.1003714	0.000494896	-0.04282086	-0.0433158
2011	0.410237	0.39912556	0.3056392	0.011111722	0.104598061	0.09348634
2012	0.333519	0.34333974	0.3181696	-0.00982089	0.015349245	0.02517014
2013	1.403948	1.4079951	1.3985035	-0.00404712	0.00544449	0.00949161
2014	0.320785	0.38045834	0.3293847	-0.05967288	-0.00859924	0.05107364
AVERAGE	0.726718	0.73414516	0.7177722	-0.00742718	0.008945782	0.01637297

2014), the risk of annual investment was the lowest, followed by quarterly investment whereas, the risk of semi-annual investment was the highest (annual rate risk was 0.712, quarterly rate risk was 0.722, and semi-annual rate risk was 0.726). On the other hand, during the period of decreasing return (where the annual returns were negative), the annual investment resulted in the highest rate risk, followed by semi-annual, and the lowest rate risk was presented by quarterly investment. This requires the investor to prudently estimate the capital market condition when calculating investment risks.

When investing in a fund, the investor will have to consider both its returns and risks. If the returns and risks are considered, the results will be as shown in Table 6.

From Table 6, it can be seen that the annual investment had the best ratio, followed by the semi-annual period, and finally, the quarterly period. When the investment performance was classified according to capital market condition, the results did not change. During normal conditions, the best investment performance was seen in the annual period, while the semiannual and quarterly term investments were not as strong. The lowest negative ratio was in the annual period, followed by the semi-annual, and then the quarterly period. Accordingly, it can be concluded that the longer the investment period, the better its performance.

Table 6
Rate of return and risk ratio: Annually, semi- annually and quarterly

	Annual	Semi-annual	Quarterly
Average ratio for all periods	0.182278	0.16962134	0.159027
Average during the bullish period	0.488561	0.4750494	0.4569281
Average during the bearish period	-0.6685	-0.711568	-0.7606978

DISCUSSION

The Attractiveness of the Metwally and Chapra Models

The Metwally model of the Islamic capital market is attractive. The model generates returns that are at least equal to those of conventional stocks, and this model is able to yield an outperforming return against the interest rate. In 2008 when the capital market encountered a crisis, the Metwally model was able to yield considerably higher returns, exceeding 44%. The results of the comparison of the returns generated by the Metwally model and the real capital market were not statistically significant. However, the returns generated by the Metwally model were much higher in absolute terms (11.9% compared to 0.7%). The insignificant result in statistical terms might be due to the high standards error, which resulted in a lower t-value. When it was analysed annually, it was found the Metwally model yielded significantly higher returns in 2013 and in 2010. In the other years, there were no statistically significant differences.

The results in Table 2 also show that during the period of 2007 to 2013, the returns of stock based on the Metwally model only encountered a one-time negative average in 2009, whereas the real return of stock experienced negative averages on four occasions, in 2008, 2010, 2011, and 2013. These results show that the capital market based on the Metwally model had a lower risk, which increases the attractiveness of the capital market. According to the objective of the Islamic capital market, which is to suppress speculative practices, this decreased risk confirms the Islamic capital market based on the Metwally model meets this objective of reducing speculative action. However, the Islamic capital market requires investors to be more aware of and careful in investing their money in the form of stocks. The information presented in Table 2 shows the Metwally model had a higher standard deviation of returns compared with the current capital market model.

The results of the attractiveness test described above thus show the Islamic capital market model based onn the Chapra model is less attractive in terms of yields (capital gain). The average returns of stock within the three years prior to the enforcement of the DSN fatwa (which is similar to Chapra's ideas) were much higher than after enforcement of the fatwa. However, this cannot avoid the possible existence of bias due to the decreasing market performance during the period of enforcement of fatwa. When t comparison was made between 2010 and 2011, it resulted in a statistically insignificant difference. These different results show that the differences between JII performance prior to and upon the enforcement of the DSN fatwa were not solely affected by the fatwa.

When portfolio performances, which include the returns and risks, were simultaneously compared, the results were not conclusive. When the Sharpe index was used, a decreased performance post-fatwa was found. Using the Treynor index, there was no difference between the performance

prior to and upon the enforcement of the fatwa. The use of the Jensen index produced the same result as the Sharpe index.

Islamic Capital Market and Investment Strategy

The long-term investment strategy is a passive strategy, which involves diversifying the investment into all stocks listed in the stock index. This strategy might be used by investors who have large funds, or by mutual fund companies. For investors with small funds, they need to select stocks that are listed on the stock index. For example, in the case of investment in JII, they need to select from 30 stocks. To make this selection, Metwally (1992) suggests taking the Book Value of Equity per Share (BVPS) as the reasonable price. The best stocks to select are those where the price is not higher than their BVPS. Thus, the selection must be based on the ratio between stock price and BVPS, known as the Price to Book Ratio (PBR).

This research has examined the advantages offered by the strategy of selecting stock based on PBR. This was achieved by sorting the stock listed on JII in every year based on PBR, and then classifying these stocks into two groups. The first group consisted of 10 stocks with small PBR values while the second consisted of 10 stocks with high PBR values. The results showed that the group of stocks with low PBR values offered more advantageous compared with those low PBR values (see Appendix for detailed results). This finding is not surprising. Indeed, the expectation model developed by Fama and French (1992), known as the 3 Factors Model, includes PBR as one of its factors. A newer model developed by Fama and French (2015) also uses PBR as one of five factors to estimate stock return. An additional advantage offered by low PBR relates to the common phenomenon of small effect, as suggested by Banz (1981).

CONCLUSION

This study has shown the Islamic capital market model suggested by Metwally (1992) will in fact result in attractive returns if it is implemented. However, this model requires both price and trading period limitations. Therefore, technically, it is not applicable. On the other hand, Chapra's model is technically unconstrained in terms of trading, but its performance is not as attractive. The Islamic capital market based on Chapra's model, in fact, results in relatively low risk, but also yields low returns. If the return and risk factors are considered simultaneously, the performance of this Islamic capital market model is unfavourable compared with the conventional one. Therefore, the study developed an Islamic capital market model based on long-term investment strategy, which has been shown to be an attractive option. This study has proven that investments made over a longer period of time, in general, will yield higher annualised returns. Additionally, groups of stocks that have low PBRs perform better. This knowledge can be used as a strategy to invest in Islamic capital markets.

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APPENDIX

The Comparison of the Return of Islamic Stock According to the Price to Book Ratio

Year	Investment period	Average Return		P Value	Conclusion of the most advantagous Investment
		10 lowest PBR	10 highest PBR		
2007	Quarterly	0.440611	0.092696	0.3262	SMALL NOT SIGNIFICANT
	Semi-annually	0.360669	0.06173	0.3914	SMALL NOT SIGNIFICANT
	Annually	0.395722	0.086784	0.3529	SMALL NOT SIGNIFICANT
2008	Quarterly	-0.683183	-1.220081	0.3305	SMALL NOT SIGNIFICANT
	Semi-annually	-0.689053	-1.240654	0.3182	SMALL NOT SIGNIFICANT
	Annually	-0.752569	-1.301498	0.2738	SMALL NOT SIGNIFICANT
2009	Quarterly	0.891376	0.309305	0.023	SMALL SIGNIFICANT
	Semi-annually	0.904155	0.376736	0.0463	SMALL SIGNIFICANT
	Annually	0.964045	0.426584	0.0448	SMALL SIGNIFICANT
2010	Quarterly	0.941261	0.146952	0.0958	SMALL SIGNIFICANT
	Semi-annually	0.514495	0.235634	0.1607	SMALL NOT SIGNIFICANT
	Annually	0.499466	0.242791	0.2006	SMALL NOT SIGNIFICANT
2011	Quarterly	0.101409	-0.149055	0.036	SMALL SIGNIFICANT
	Semi-annually	0.186575	-0.207476	0.0165	SMALL SIGNIFICANT
	Annually	0.233137	-0.172973	0.02	SMALL SIGNIFICANT
2012	Quarterly	-0.236973	0.168337	0.0098	BIG SIGNIFICANT
	Semi-annually	-0.24309	0.187783	0.0102	BIG SIGNIFICANT
	Annually	-0.18788	0.220043	0.012	BIG SIGNIFICANT
2013	Quarterly	0.589637	-0.057004	0.3048	SMALL NOT SIGNIFICANT
	Semi-annually	0.572405	-0.080251	0.3027	SMALL NOT SIGNIFICANT
	Annually	0.517883	-0.151524	0.2896	SMALL NOT SIGNIFICANT
2014	Quarterly	0.163264	0.158567	0.9558	SMALL NOT SIGNIFICANT
	Semi-annually	0.214414	0.215744	0.9903	BIG NOT SIGNIFICANT
	Annually	0.147747	0.175423	0.7484	BIG NOT SIGNIFICANT
TOTAL		0.243563458	-0.061475292	0.0387	SMALL SIGNIFICANT

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Dynamic Relationship between Sovereign Bond and Sukuk Market Developments in Indonesia

Reifa Qisthi Mitsaliyandito and Tika Arundina*

Department of Economics, Faculty of Economics and Business, University of Indonesia, Depok, West Java, Indonesia

ABSTRACT

This study assesses the impact of sovereign bond and sukuk market (Islamic bond market) development, as one of Indonesia's financing instruments, on the growth of its economy and vice versa. It uses the 2009-2016 quarterly longitudinal data of outstanding bond and sukuk as a proxy of the size of the bond and sukuk markets, as well as the GDP of Indonesia as a proxy of the size of its economy. The VAR model and granger causality test were used to determine the direction of causality while Impulse Response Function and Variance Decomposition analysis measured the impact of shock on each variable of the economy. The results show that only sovereign sukuk has a positive impact on the Indonesian economy which means it is more productive compared with the conventional sovereign bond.

Keywords: Bond, Indonesian economy, sukuk, VAR

INTRODUCTION

The Indonesian economy was badly hit in the 1998 global financial crisis due to the size of its foreign loans both from private and government sector. Large amounts of foreign debt have a high exchange rate fluctuations risk and will be a burden if the debt is not effectively allocated. As the rupiah appreciates, it becomes less competitive in the international market. Given the large amount of debt held by Bank Indonesia, but not supported by good fiscal and monetary policies, and the country's unhealthy banking system, the rupiah began to depreciate (Nasution, 1998). At the time, Bank Indonesia did not have sufficient US dollar to maintain the value of the rupiah value, and the government finally decided to change the floating exchange rate regime into a free-floating one on August 14, 1997.

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E-mail addresses:
reifaqim@gmail.com (Reifa Qisthi Mitsaliyandito)
tikarundina@gmail.com (Tika Arundina)
* Corresponding author

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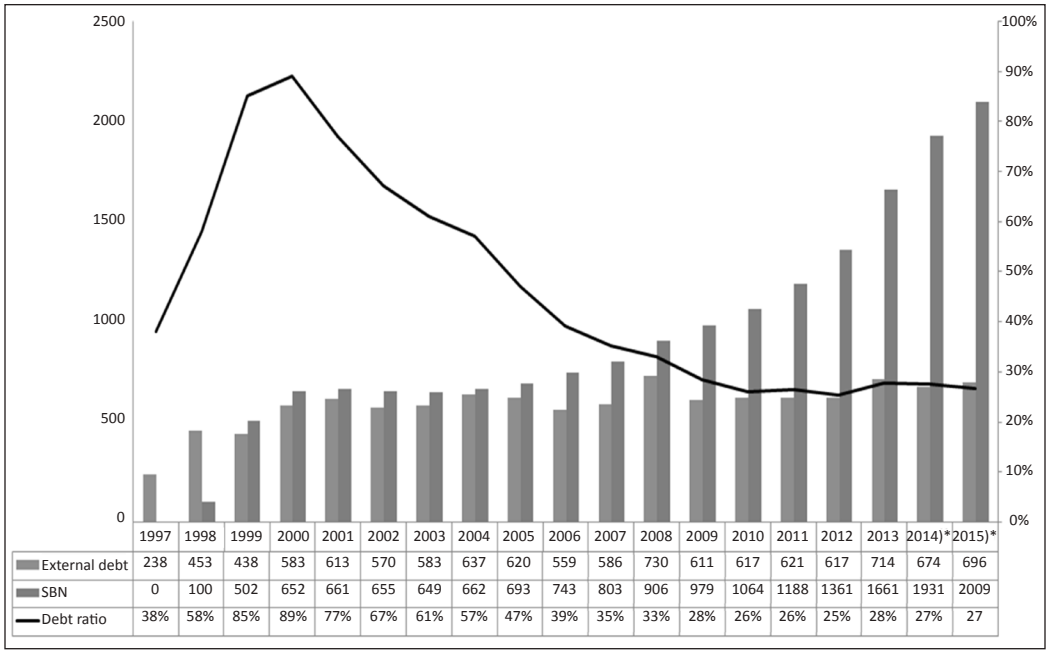
However, the rupiah began to depreciate sharply which led to very high interest rates, and free-falling value of Indonesia's Stock Exchange. Many banks and finance companies declared themselves bankrupt which consequently led to a sharp decline in Indonesia's GDP growth rates, increased inflation and unemployment (Nasution, 1998).



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014)*	2015)*
External debt	238	453	438	583	613	570	583	637	620	559	586	730	611	617	621	617	714	674	696
SBN	0	100	502	652	661	655	649	662	693	743	803	906	979	1064	1188	1361	1661	1931	2009
Debt ratio	38%	58%	85%	89%	77%	67%	61%	57%	47%	39%	35%	33%	28%	26%	26%	25%	28%	27%	27

Figure 1. Graph of proportion of government debt (IDR Trillion)
Source: Directorate General of Financing and Risk Management (DJPPR), Ministry of Finance, 2017

Exchange rate fluctuations caused debt-based financial instruments to be vulnerable to swelling when the creditor currency exchange rate sharply depreciates, as was the case in 1998. Therefore, the Indonesian government transferred its sources of funds into the domestic financial market which was relatively more resistant to exchange rate fluctuations. Figure 1 shows that the Indonesian government has carried out foreign debt transfers since 1998. In 1997, the proportion of government foreign debt amounted to 100% of the total government debt. However, post 1998, government debt was been transferred into SBN (Surat Berharga Negara – sovereign bonds) which are primarily held by domestic investors (Ministry of Finance, 2017). It only took two years until they were able to dominate the proportion of government debt instruments. By 2015, the issuance of SBN had doubled the government's foreign debt. The SBN as seen in Figure 1 does not only comprise bond financial instruments. In 2008, the government began to issue a new type of bond to comply with the Islamic custom

of not charging interest. This financial instrument is called sukuk or the sovereign Islamic bond (SBSN). Indeed, the issuance of sovereign sukuk in 2008 enriched the options in respect of government-owned financing management.

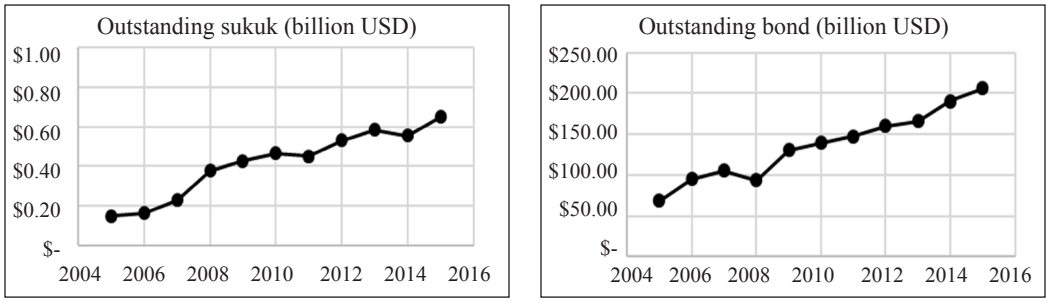


Figure 2. Graph showing the the development of: (a) sukuk; and (b) bond market
Source: The Financial Services Authority, 2017

Figure 2 shows bond and sukuk markets in Indonesia are showing a positive trend. In terms of outstanding value, the development of the sukuk market is still far below the conventional bond market but the former has a larger growth rate than the latter. Although on aggregate, the size of the bond market is much greater than the sukuk market, the growth rate of sukuk (14.3%) is bigger than the growth rate of bonds (9.87%). This research will attempt to find out whether the development of the sukuk market impacts positively on the country's GDP growth rate.

Only a few studies have discussed the relationship between sukuk and the economy. Furthermore, there is no specific research that examined the relationship between sukuk market development and the Indonesian economy which this study intends to do. It will also discuss the relationship between bond market development and the Indonesian economy with a specific focus on the sovereign sukuk and bonds traded within the internal market.

LITERATURE REVIEW

The negative impact of foreign loans in developing countries has been widely researched. Reinhart and Rogoff (2010) found that when a country's foreign loans, both from the government and private sectors, reached 60% of its GDP, it will have 2% negative impact on its growth. Even if the level of loans is above 60%, the perceived negative impact may equate to 50% of GDP growth (Pattillo, Poirson, & Ricci, 2011). When different levels of debt are involved, Schclarek (2004) found that the negative impact of foreign loans will begin to decline at a level of 35–40% debt to GDP. This negative impact is caused by government loans. In Indonesia, the ratio of foreign debt to GDP is still relatively small compared with the Eurozone, which is still below 40%, but this ratio has experienced a positive trend amounting to 25% since 2011 (Ministry of Finance, 2017).

Domestic bond and sukuk markets are considered as alternative sources of

funds for the government. Theoretically, according to the IS-LM model, increased bond or sukuk issuance can affect the growth of a country's GDP (Mankiw, 2008). For example, the Ministry of Finance issues sukuk to finance government projects. Decreases in money supply result in a shift in the LM curve to the left. If there is an increase in spending by the finance ministry the IS curve will shift to the right that is automatically accompanied by an increase in GDP. The level of government spending will determine whether the GDP will be increased from the starting point or not.

In determining which assets are going to be held or owned by the public, there are a few factors that need to be considered, and each assumed ceteris paribus. The first is wealth, which is the total resources owned by society, including the assets, for example, income. The second is expected return (estimated return rate), which is an estimate of changes in asset value in the future. The third is risk, namely how big the risk of losses borne by society in holding an asset. The last is liquidity level, namely how fast the asset can be exchanged into more liquid assets (Mishkin, 2010).

Many studies have explored the relationship between the development of the bond market and the economy. Using a VAR model, the domestic sovereign bond market development has proven to granger cause economic growth (Pradhan et al., 2015). Earlier, Fink, Haiss and Hristoforova (2003) reported similar findings, that bond market is proved to have causality with the economy. Using a different model, Thumrongvit, Kim and Pyun (2013) found that bond market is positively correlated to the economy.

In the reverse direction, Godlewski, Turk and Weill (2011) discovered that the market has positive or neutral responses to the issuance of bonds, while negative on the issuance of sukuk. Using simple OLS and GLS methods, Bhattacharyay (2013) found that economy promotes bond market development. In an earlier research, using VAR model, Pradhan, Arvin, Bennett, Nair and Hall (2016) also found that economic growth granger cause bond market development.

In contrast to the plethora of previous studies which had analysed the impact of bonds issuance with economic growth, there is limited research focusing on the relationship between sukuk market development and the economy growth. Ahmad, Daud and Kefeli (2012) examined the relationship between sukuk and Malaysia's economic growth. Using a VAR model, she reported that sukuk issuance had a positive impact on the Malaysian economy. As this topic has not been previously discussed with reference to Indonesia, this research is expected to break new grounds.

MATERIALS AND METHODS

This study analyses the influence of bond and sukuk market developments on the Indonesian economy, and vice versa (i.e. the influence of the Indonesian economy on bond and sukuk market developments). Therefore, the most appropriate model to be used in this study is vector autoregression

(VAR) as a base model in order to measure the causality and impact of each variable on the other. The Granger causality test was used to determine the causality among the variables. The impulse response function (IRF) traces the responsiveness of the dependent variables in the VAR to shocks to each of the variables. Meanwhile, variance decomposition (VD) provides the proportion of the movements in the dependent variables that are due to their 'own' shocks compared to shocks with the other variables (Brooks, 2014).

Variables used in this study are *odgov, sdgov, and GDP*. Longitudinal data from Q1 of 2009 to Q4 of 2016 in logarithmic form are used. Odgov is sovereign bond market development, sdgov is sovereign sukuk market development, and GDP is Indonesian real GDP. Market development referred to in this study is proxied by the number of outstanding domestic sovereign bonds and sukuk. The selection of proxy for the variables in this study follows Fink et al. (2003) while the ordering of variables follows Pradhan et al. (2015).

VAR model used in this research:

$$Y_t = A_0 + AY_{t-1} + \varepsilon_t \quad (1)$$

Where:

$$Y_t = \begin{bmatrix} PDB_t \\ Odgov_t \\ Sdgov_t \end{bmatrix};$$

$$A_0 = \begin{bmatrix} \alpha_{11} \\ \alpha_{21} \\ \alpha_{31} \end{bmatrix};$$

$$A = \begin{bmatrix} \alpha_{12} & \alpha_{13} & \alpha_{14} \\ \alpha_{22} & \alpha_{23} & \alpha_{24} \\ \alpha_{32} & \alpha_{33} & \alpha_{34} \end{bmatrix};$$

$$v = \begin{bmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \end{bmatrix} \quad (2)$$

RESULTS

The interpretation of VAR model is not the focus of this research which will look at the results of Impulse Response Function (IRF) and Variance Decomposition (VD). However, VAR model estimation results are important in estimating IRF and VD models.

The variables in the equation are stationary at different levels. The GDP and aggregate sukuk are stationary at level whereas the other variables are stationary at the first difference. So, the model to be used is a VAR in difference because a VECM model can only be used if the variables in the equation have the same stationarity level. Optimal lag determination takes into consideration some key criteria as well as additional criteria. The first smallest value obtained by using the AIC criterion is found in lag 1. Unlike the AIC, the SC value indicates that the optimum lag value lies in lag 0. However, other criteria show the optimum lag value lies in lag 1. Therefore, the decision was made to use lag 1. A stability test also shows that this model is stable.

After passing the stability test stage, a Granger causality test is conducted to determine the direction of causality between the variables. Table 2 depicts the relationship

between domestic sovereign bonds and sukuk and Indonesian GDP. Hypothesis 0 in the Granger causality test states that there is no Granger causality between the two variables. The criteria for rejection is shown by *F-statistics* value which is greater than the critical value of 10%, or we can use Prob> F smaller than 0.1 confidence level. Referring to the result, there is supply leading the relationship between Sdgov and GDP.

Table 1
Stationarity test, results of data processing with EVIEWS

Variable (in log)	*Test Statistics*	*Mc Kinon critical value*			Information
		1%	**5%**	**10%**	
PDB	-3.139210	-3.711457	-2.981038	-2.629906	Stationary
Odgov	2.628810	-3.661661	-2.960411	-2.619160	Not stationary
Sdgov	-0.979859	-3.699871	-2.976263	-2.627420	Not stationary

Table 2
Granger causality test, results of data processing with EVIEWS

H_0	F statistics	Prob> F	Information
Odgov does not G*ranger cause* GDP	2.59735	0.1183	H0 accepted
Sdgov does not *Granger cause* GDP	5.68414	0.0241	H0 rejected
GDP does not Granger cause Odgov	2.22468	0.1470	H0 accepted
GDP does not Granger cause Sdgov	0.03825	0.8463	H0 accepted

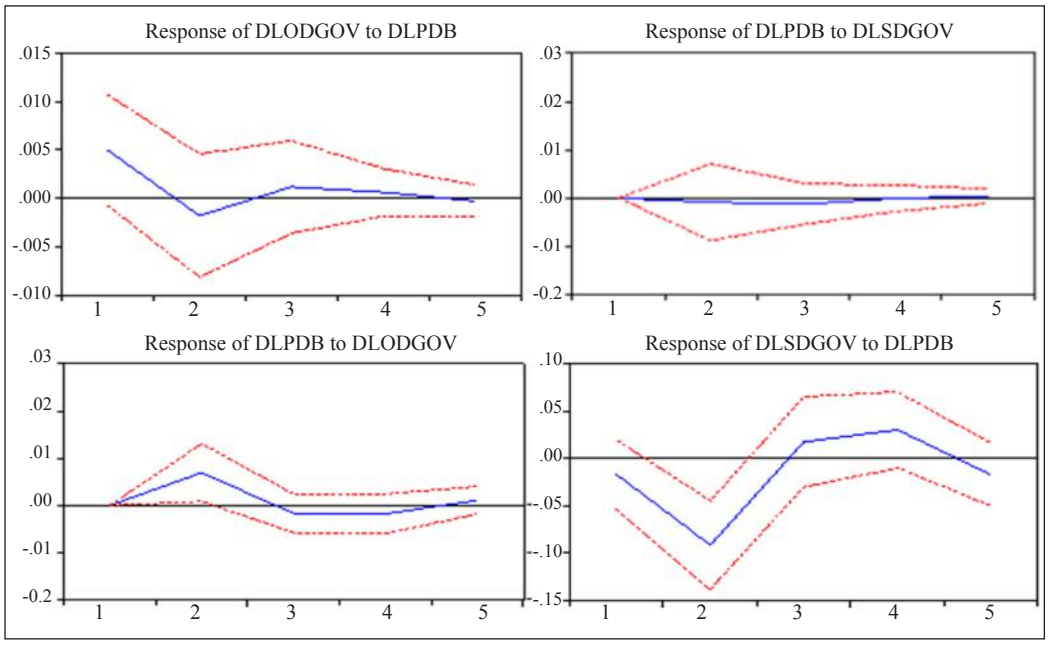


Figure 3. Graph of IRF results, results of data processing with EVIEWS

According to IRF results shown in Figure 3, since the beginning of the period, ceteris paribus, GDP negatively responds to the shock of *outstanding* domestic sovereign bonds, reaching a peak in the fourth period: -0.000112 or -0.01%. In the next period, the effect of *shock* of bond to GDP begins to disappear or can be interpreted as taking approximately five quarters for GDP to return to its long-term equilibrium. On the other hand, GDP positively responds to the shock of outstanding domestic sovereign sukuk, reaching a peak in the second period: 0.006957 or 0.70%. In the next period, the effect of shock on domestic sovereign bond to GDP begins to disappear or can be interpreted as taking approximately three quarters for GDP to return to its long-term equilibrium. Meanwhile, in the opposite direction, the response given by the domestic sovereign bond to shocks that occur in GDP by one standard deviation has a positive influence only in the first period: 0.004981 or 0.50%. The response begins to disappear in the second period. In contrast to bonds, the response given by the domestic sovereign sukuk to shocks that occur in GDP by one standard deviation has a negative effect until it reaches a peak in the second period: -0.010974 or -1.10%. The response lasts until the second period and only begins to disappear in the third period.

The result of variance decomposition result (see appendix) show that, in the first period, shock to GDP is only affected by itself. Only in subsequent periods does the proportion of GDP shock to GDP begin to decline because there is an increase in the effect coming from the shock of the bond and sukuk market to GDP. In the second period, 11.13% of GDP shock is attributed to the shock of sukuk, while bonds account for 5.7% of GDP. The increased shock effect between bonds and sukuk is consistently dominated by sukuk for up to five periods. However, in the opposite direction, shock on domestic sovereign bonds and sukuk is affected by the shock on GDP. Nevertheless, the effect is greater in the sukuk market. The influence of a given GDP shock on domestic sovereign sukuk quite drastically increased in the second period with a value of 42.94%, which initially only affected 2.96%. It affected domestic sovereign bond only around 9% since the second period and continues to increase.

DISCUSSION

Based on the Granger causality test, it is clear domestic sovereign sukuk has a significant positive influence on GDP. The estimation results are in line with those of two previous studies by Ahmad et al. (2012) and Echchabi et al. (2016).

Sovereign bond funds can be used for various purposes. They are used primarily to finance APBN (Government Budget) deficit, closing short-term cash shortages due to inconsistencies between the cash flow of revenues and expenditures from the state treasury account (Rekening Kas Negara) within a budget year, as well as managing debt portfolio (Law of the Republic of Indonesia Number 24 Year 2002 on Sovereign Debt Securities Article 4 points a, b, c). According to Suminto

(personal communication, June 18, 2017), the negative impact of sovereign bonds to GDP caused using bond proceeds prior to 2014 is relatively large, earmarked for unproductive subsidies rather than for capital expenditure. Meanwhile, majority of the funds generated by sukuk are consistently allocated to capital expenditure. Figure 4 compares the expenditure on subsidies and capital which proves that domestic sovereign sukuk has potentially higher yields and boosts economic growth in Indonesia.

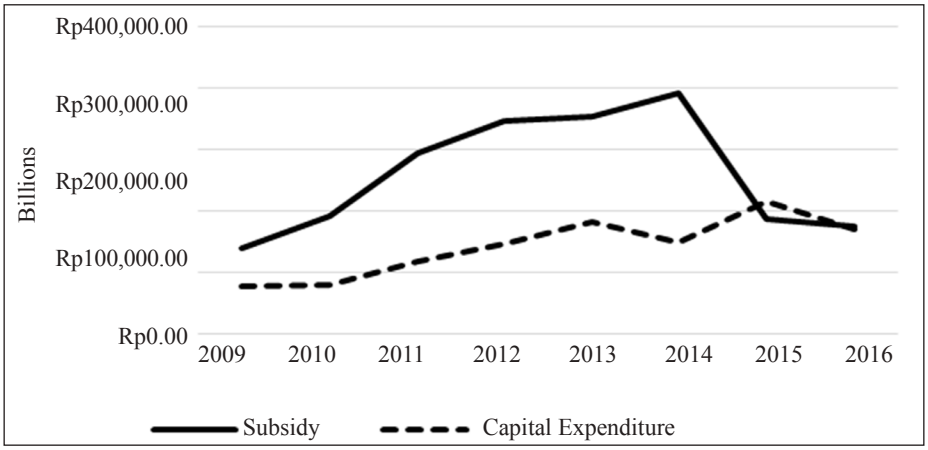


Figure 4. Graph of comparison of subsidies and capital expenditure in local currency, government financial statements
Source: Ministry of Finance, 2017

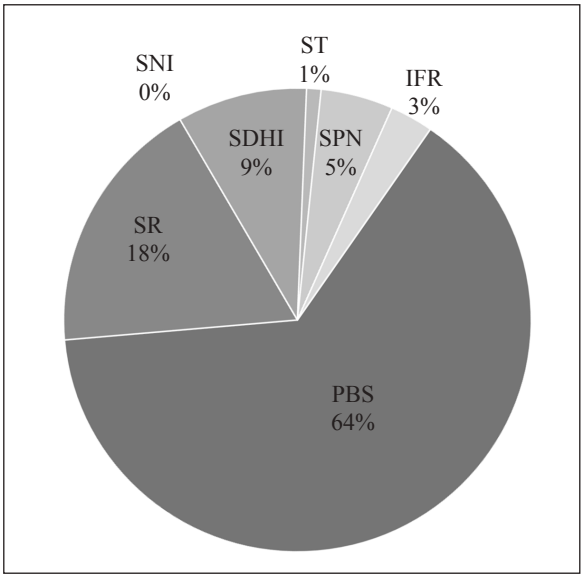


Figure 5. Pie chart of outstanding sovereign sukuk Indonesia as of December 2017
Source: Ministry of Finance, 2017

Figure 5 shows sukuk instruments traded in Indonesia are dominated by Retail (SR) and Project-Based Sukuk (PBS). This sukuk is predominantly used to raise funds for government projects, such as infrastructure development programmes (energy, telecommunications, transportation, agriculture, manufacture, and property), provision of public services, empowerment of local industries, and other development programmes in accordance with the government's strategic plan. The SDHI (Pilgrimage Fund Sukuk) and ST (Saving Sukuk) are not classified as tradable securities.

In the reverse direction, both relationships do not have any significant causality. Neglecting granger causality test result, it appears that only domestic sovereign bond has positive responses to GDP increases. While domestic sovereign sukuk has negative responses to the increase in GDP. This finding was corroborated by Godlewski et al. (2011) that the market has positive or neutral responses to the issuance of bonds, while negative on the issuance of sukuk. The positive influence that GDP has on these bonds proves the theory of bond demand. Therefore, an increase in GDP or public purchasing power in general also increases the number of outstanding bonds. One possible reason is a high level of bond liquidity which means active bonds are traded on the exchange and provide greater opportunities for investors to get capital gains from bond trading.

As with bonds, the negative effect that GDP has on sukuk means that an increase in GDP decreases the number of outstanding sukuk. The results of this study indicate that sukuk is a financial instrument that has relatively fewer enthusiasts compared with bonds. It means that when public purchasing power increases, they switch to other financial instruments that is more profitable or just increase their consumption. One reason could be public investment trends that are still relatively lower than the tendency for consumption. Members of the Board of Commissioners of OJK Kusumaningtuti S. Soetiono stated that the trend of MPS decline has occurred since 2011, and in 2013 the end of the ratio is below marginal propensity to consume (MPC), which means that people tend to consume higher than the tendency to save or invest. Another reason is that the characteristics of the sukuk market in Indonesia tend to be less liquid than other financial instruments, which means that the sukuk is not actively traded in the stock exchange, and minimises the opportunity for investors to obtain capital gain from trading sukuk. This finding is supported by Said and Grassa (2013) stating that the market share of sukuk is dominated by investors who tend to be passive and hold on to it until the end of the maturity. The majority of investors in the financial market however, tend to increase their demand for other financial instruments when their income increases.

CONCLUSION

Theoretically, the effects of bond and sukuk market developments on GDP depend on the productivity as a result of using the funds. The positive influence of sukuk is almost certainly due to the characteristics of the securities that would require underlying assets to be executed by the investor when default occurs. Therefore, at least sukuk issuance will have an impact as much as the underlying assets. It could also leverage on GDP more than the underlying assets.

The government is urged to provide greater incentives to encourage the development of the sukuk market which has proven to have a positive impact on the economy. As the current government is heavily committed to building infrastructure, it should increase its sukuk issuance, especially for its infrastructure development. It is recommended future research examines other variables, such as the international sovereign bond and sukuk market, which should be incorporated into the model to explore whether the risk of exchange rate fluctuation could be minimised using sukuk.

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APPENDICES

IRF Results Decomposition Results

Response of DLPDB			
Period	DLPDB	DLODGOV	DLSDGOV
1	0.019933	0.000000	0.000000
	(0.00257)	(0.00000)	(0.00000)
2	-0.003502	-0.000872	0.006944
	(0.00406)	(0.00398)	(0.00306)
3	-0.006953	-0.001247	-0.001737
	(0.00354)	(0.00211)	(0.00204)
4	0.003451	-0.000112	-0.001810
	(0.00310)	(0.00136)	(0.00211)
5	0.001231	0.000389	0.001115
	(0.00257)	(0.00075)	(0.00144)

Response of DLODGOV			
Period	DLPDB	DLODGOV	DLSDGOV
1	0.004981	0.015322	0.000000
	(0.00287)	(0.00198)	(0.00000)
2	-0.001815	0.004774	-0.000667
	(0.00318)	(0.00306)	(0.00231)
3	0.001162	0.001154	-0.000774
	(0.00240)	(0.00195)	(0.00139)
4	0.000598	0.000602	0.000119
	(0.00123)	(0.00087)	(0.00069)
5	-0.000300	8.21E-05	0.000188
	(0.00083)	(0.00042)	(0.00041)

Response of DLSDGOV			
Period	DLPDB	DLODGOV	DLSDGOV
1	-0.017234	-0.019488	0.096795
	(0.01816)	(0.01785)	(0.01250)
2	-0.091405	-0.036487	0.002104
	(0.02324)	(0.01916)	(0.01421)
3	0.017199	-0.004012	-0.031391
	(0.02380)	(0.02187)	(0.01636)
4	0.029835	0.002699	0.010422
	(0.02001)	(0.00908)	(0.01232)
5	-0.017455	-0.000638	0.007522
	(0.01648)	(0.00603)	(0.01020)

Variance Decomposition Results

Variance Decomposition of DLPDB:				
Period	S.E.	DLPDB	DLODGOV	DLSDGOV
1	0.019933	100.0000	0.000000	0.000000
2	0.022192	83.16790	5.700605	11.13149
3	0.023564	82.46897	6.677949	12.938921
4	0.023886	82.35252	6.502102	12.596174
5	0.023968	82.05497	6.563881	12.696212

Variance Decomposition of DLODGOV:				
Period	S.E.	DLPDB	DLODGOV	DLSDGOV
1	0.016111	9.557691	90.44231	0.000000
2	0.017306	9.383828	89.613102	1.003065
3	0.017411	9.716442	88.978754	1.304807
4	0.017435	9.807428	88.862994	1.329575
5	0.017439	9.831935	88.822312	1.345754

Variance Decomposition of DLSDGOV:				
Period	S.E.	DLPDB	DLODGOV	DLSDGOV
1	0.100230	2.956580	3.780226	93.26319
2	0.141939	42.94454	9.964266	47.091199
3	0.148213	40.73189	11.580115	47.687999
4	0.152336	42.39259	11.882138	45.725267
5	0.153528	43.02953	11.700126	45.27035

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Entrepreneurial Marketing and Marketing Strategies of SMEs on Marketing Performance: An Empirical Analysis of Fit

Rifelly Dewi Astuti*, Adi Zakaria Afiff and Tengku Ezni Balqiah

Management Department, Faculty of Economics and Business, Kampus UI Depok 16424, Universitas Indonesia

ABSTRACT

In Indonesia, SMEs contribute to approximately 60% of its GDP. The SMEs strengths and limitations however, differ from that of established companies. The primary aim of this study is to find out how to maximise SME marketing performance by examining its entrepreneurial marketing dimensions and marketing strategy clusters. Based on data from 130 SME in Indonesia, the study identified seven entrepreneurial marketing and five marketing strategy clusters. Using the profile deviation of the concept of fit, it is indicated that traditional marketers cluster which combined proactive orientation, will result in maximum market growth while the mass marketers cluster (i.e., customer-focus orientation) will result in maximising profitability.

Keywords: Entrepreneurial marketing, marketing performance, profile deviation fit, SMEs marketing strategy

INTRODUCTION

SMEs contribute significantly to economic growth. In Indonesia alone, SMEs have contributed to 60%, or IDR6108 trillion, of Indonesia's GDP, up 12.28% from the previous year (Ministry of Cooperatives & SME, 2014). SMEs have also contributed to increasing the employment rate to 6.97% or 112 million Indonesians and hence, it is important for SMEs to maximise their performance.

The SMEs are different from large established companies. This is because they have many limitations (Gilmore, Carson, & Rocks, 2006) such as financial, time, market information, marketing skills and knowledge, which means SME owners usually rely on a simple, unorganised or unsystematic decision-making process. Additionally, SMEs strategy in terms of responding to their competitor's marketing is usually reactive (Carson et al., 2001 as cited in Gilmore et al., 2006).

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E-mail address:
rifelly.dewi@ui.ac.id (Rifelly Dewi Astuti)
adi.zakaria@ui.ac.id (Adi Zakaria Afiff)
tengku.ezni@ui.ac.id (Tengku Ezni Balqiah)
* Corresponding author

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The SMEs' limitations do not prevent them from conducting strategic activities. Their decision-making process related to market and entrepreneurial issues are called strategic decisions (Venkatraman, 1989) and these are heavily influenced by the characteristics of their owners (Becherer et al., 2005). In this way, their decisions are more informal and creative, in terms of anticipating their limitations.

Collinson and Shaw (2001) stated that the entrepreneurial marketing concept is the most appropriate for smaller organisations with limited resources which focuses on combining entrepreneurial concepts and marketing science. This interface is known as entrepreneurial marketing (EM) and its effect has been studied on many new or small companies (Morris & Lewis, 1995). The EM is a strategic orientation that can be applied by SME owners to create a competitive advantage (Bhuian, Menguc, & Bell, 2005).

Gruber (2004) said that a marketing strategy is a key success factor for new and small companies. An SME marketing strategy is based on the owner's decisions or activities in terms of adapting basic marketing principles. This includes using networks and developing innovative marketing techniques (Gilmore, 2010). A marketing strategy for an SME is different from that of a big company. Carson and Gilmore (2000) proposed a marketing strategy for SMEs that combined four elements: adapting to marketing textbooks, network marketing, competency marketing, and innovative marketing. More quantitative research in this area is still needed (Jamal, 2005).

A marketing strategy is the way a company achieves marketing objectives. These objectives are especially related to the fulfilment of target marketing needs (Varadarajan & Clark, 1994). Marketing strategies focus on segmentation, targeting consumers, product positioning and a marketing mix (i.e., product, price, distribution, and promotion) (Kotler, 1994). However, the study of marketing strategies only focusses on products, prices, promotions and distributions. The overall marketing strategy study, especially in the form of a typology or classification, is still limited (Slater & Olson, 2001). That being said, there is a need to study overall marketing strategies (Kustin, 2004). Hence, it is important to develop a marketing typology that suits a SME.

Slater and Olson (2001) have already proven that a good combination of business and marketing strategies can lead to a firm maximising their marketing performance. This research used concept fit method to determine the best combination. The concept fit method is based on configuration theory that defines fit as a statistical interaction between two variables (Schoonhoven, 1981 as cited in Malhotra et al., 2013). In other words, the concept fit is a strategic decision-making process that will provide a company with a competitive advantage (Porter, 1996). Due to the strategic nature of the concept fit, this method is usually discussed in

strategic management topics. Marketing scholars have also used this method, but not extensively.

Venkatraman (1989) classified the concept fit into 6 types: moderation, mediation, matching, gestalts, profile deviation, and covariant. This study focuses on profile deviation as the variables (i.e., EM, marketing strategy, performance) have an insignificant functional relationship according to the theory, the performance of the criterion variables, and the variables that had many dimensions and measurements. The profile deviation method has already been used in the field of strategic management. However, only a few marketing researchers have used it (Malhotra, Mavondo, Mukherjee, & Hooley, 2013). Hence, the aim of this study is to identify the profile of Indonesian SMEs, as a fit between EM dimensions and the marketing strategy typology that maximises their marketing performance by using profile deviation techniques.

Entrepreneurial Marketing (EM) is an activity in implementing a strategy. It is an interface between Market Orientation (MO) and Entrepreneurial Orientation (EO). According to Baker and Sinkula (2009), MO and EO are correlated though each of them is a different construct. The MO reflects the degree of market strategy planning based on the study of customers and competitors study, whereas EO reflects the degree of company's growth based on identification and exploitation of market opportunities. Although they represent two different constructs, they complement each other in improving the profitability of small businesses (Baker & Sinkula, 2009). The ultimate goal of EM is to maximise the marketing performance (Hills & Hultman, 2011).

The EM is based on the following theories: Resources Based Theory, Transaction Cost Theory, and Strategic Adaptation Theory. The most appropriate theory is the Resource Advantage (RA) Theory, developed by Hunt in 1995 (Morris, Schindehutte, & LaForge, 2002). The RA Theory is consistent with entrepreneurial marketing principles. First, using leverage, the company could enhance their available resources or create new resources that could provide a competitive advantage in achieving superior company performance. Second, the ideal combination of resources can be achieved through innovation. Innovation is the core of competition in RA Theory.

Morris, Schindehutte and LaForge (2002) explained that EM has seven dimensions. Proactiveness, calculated risk taking, innovativeness, and opportunity focus are derived from entrepreneurial orientation. The resource leveraging dimension is the only element that insists on developing marketing perspectives (e.g., guerrilla marketing). Moreover, customer intensity and value creation are the core elements derived from the market orientation. The seven dimensions do not stand alone, because they could affect each other. In addition, the companies don't need to use all of the dimensions. They can emphasise a specific dimension based on company needs and stages of development.

Carson and Gilmore's (2000) SME marketing concept was strengthened by Gilmore (2011) and reshaped into an entrepreneurial marketing strategy for SMEs. It consists of four concepts. First, the basic principles of marketing should be adapted by modifying and combining the marketing mix: product or service, pricing, distribution, promoting and selling, customer service, reputation and recommendations, and using e-marketing. Second, networking marketing is important. This includes when an SME owner discusses his or her business with another owner, by talking informally or following a trade event, to collect marketing information for decision making (Gilmore et al., 2006). Third, marketing competency is the SME owner's effort to enhance their knowledge and skills in marketing. Fourth is innovative marketing which involves improving, creating, or modifying a new product, service or process. The focus is on fulfilling the customers' needs and having a unique proposition (O'Dwyer, Gilmore, & Carson, 2009).

Besides customer satisfaction, the perception of market growth and profitability are important to measure the effectiveness of a marketing strategy (Clark, 2000 as cited in Vorhies & Morgan, 2003; Qureshi & Kratzer, 2010). Market growth is reflected by an increasing sales or market share percentage. Profitability is reflected by the current company's performance (Venkatraman, 1989). The perceptual measurement for market growth and profitability are reliable and valid, so it is already used widely in empirical research (Dess & Robinson, 1984).

Slater and Olson (2001) developed a typology based on the company's marketing strategy that includes aggressive marketers, mass marketers, minimizer marketers, and value marketers. Few studies have investigated marketing typology. However, typology is very important in scientific research, due to its ability to make things simpler and more understandable (Ginsberg, 1984 as cited in Slater & Olson, 2001).

As explained previously, the profile deviation technique identifies the sample SMEs' profile. This profile is a combination of EM dimensions and marketing strategy typologies. The purpose of the profile is to maximise performance. The conceptual fit in the profile deviation is a degree of similarity of one profile to the ideal profile (Venkatraman, 1989). The important steps to follow in a profile deviation analysis include: (1) forming an ideal profile by calibrating 10% - 15% of the sample that has an ideal performance value; (2) weigh the dimensions used; and (3) test the strength of the model by computing a weighted Euclidean distance on the sampling profile (Venkatraman, 1989).

METHOD

Three constructs are used in this study: (1) the seven dimensions of EM; (2) the SME marketing strategy; and (3) the marketing performance. Using the concept of fit, the relationship among these three variables are described in the research model (Figure 1).

The relationship between the marketing strategy and performance have been proven. Cavusgil and Zou (1994) proved that a marketing strategy is an important factor that affects the performance of the exporting companies. In the SME context, Knight (2000) proved that entrepreneurial orientation is the basis of an SME marketing strategy that influences SME performance. The greater the SME's entrepreneurial orientation, the better their marketing strategy will be in terms of marketing leadership, quality leadership, and product specialization. As a result, the SMEs performance will be better.

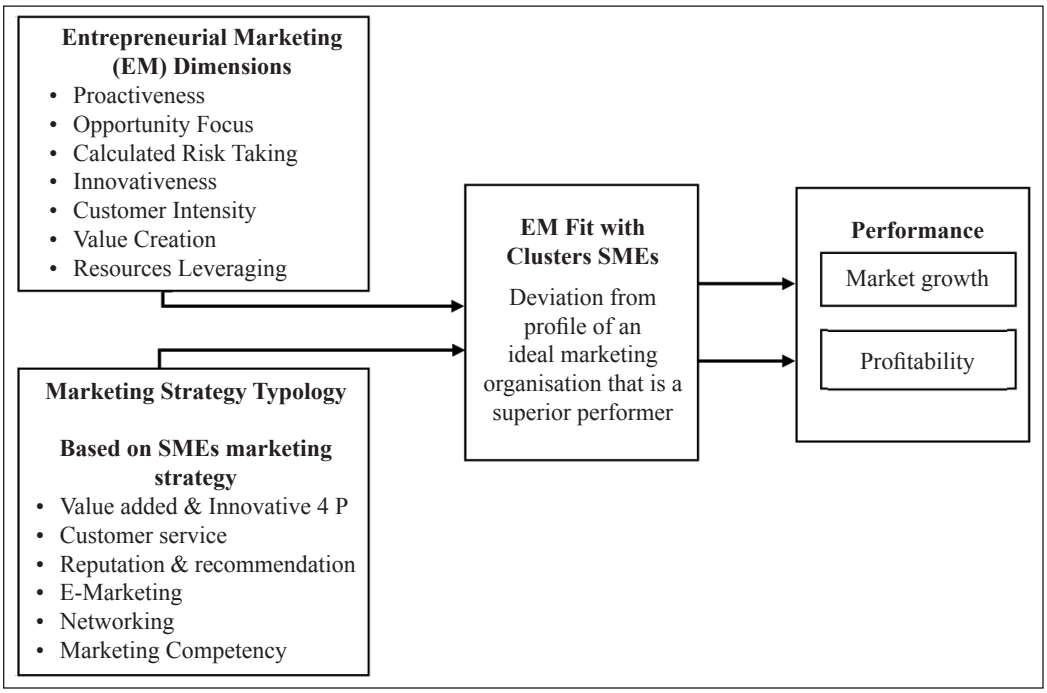

Figure 1. Research model

In this study, the ideal profile is achieved when the combination of EM dimensions and the SME marketing typology is optimal, resulting in high-growth performance. The SMEs that are most similar to the ideal profile are SMEs with high growth (Desphande et al., 1993; Narver & Slater, 1990). Thus, the first hypothesis (H1) is: the better the fit between the EM dimensions and the marketing strategy typology, the better the growth performance.

In addition to market growth, Naver and Slater (1990), and Deshpande, Farley and Webster (1993) stated that marketing performance could be measured by the perception of the SME's own level of profitability, compared with that of their competitors. The ideal profile can be achieved when the combination of EM dimensions and SMEs marketing strategy typologies are optimal, resulting in high profitability. The SME that is most similar

to the ideal profile is an SME with high profitability. This leads to the second hypothesis (H2): the greater the fit between the EM dimensions and marketing strategy typology, the higher the profitability performance.

This is a quantitative research. The entrepreneurial marketing variable has 58 indicators and seven dimensions. The seven dimensions are: (1) proactiveness (Bateman & Grant, 1993; Becherer, Haynes, & Helms, 2008); (2) opportunity focus; (3) calculated risk taking; (4) innovativeness (Becherer et al., 2008; Morris et al., 2002); (5) customer intensity; (6) resource leveraging (Becherer et al., 2008); and (7) value creation (Becherer et al., 2008). The SME marketing strategy variable has 76 indicators and 9 dimensions: (1) an adaptive marketing mix; (2) a modified marketing mix; (3) customer service; (4) reputation; (5) positive recommendations (Gilmore, 2011; Gilmore, Carson, O'Donnel, & Cummins, 1999; O'Dwyer et al., 2009); (6) networking (Gilmore, 2011; Gilmore, Carson, & Grant, 2000; Gilmore et al., 2006); (7) e-marketing (Gilmore, 2011); and (8) marketing competency for SMEs (Carson & Gilmore, 2000; Gilmore, 2011). The marketing performance variable has seven indicators and two dimensions: perceptions of market growth and profitability (Babakus, Cravens, Grant, Ingram, & Laforge, 1996; Slater & Olson, 2001). All variables were measured on a 5-point (1 = least importance; 5 = great importance) Likert scale.

The first step in analysing the data was grouping all of the indicators in an EM variable by using an exploratory factor analysis to form a valid and reliable new dimension. The New EM dimensions that being used by Indonesian SMEs were formed. Second, a hierarchical cluster analysis was conducted to form typology or clusters based on SME marketing strategy. A hierarchical cluster analysis was used because it was simple and measures the similarity between objects. It can be used for a limited number of samples (Hair, Black, Babin, & Anderson, 2010). In addition, the clusters that are obtained are better than when a k-means cluster analysis is used (Steinbach, Karypis, & Kumar, 2000). Third, the profile deviation is analysed by calculating the ideal score and profile deviation score (Vorhies & Morgan, 2003). Fourth, the hypothesis is tested using a simple regression. Finally, the SMEs were profiled.

The profile deviation score is calculated by counting the Euclidean distance score (Vorhies & Morgan, 2003):

$$Dist = \sqrt{\sum_{j}^{N} (Xsj - \bar{X}ij)^2} \qquad (l)$$

where:

Xsj = the score for a firm in the study sample on the jth dimension

$\bar{X}ij$ = the mean for the ideal profile along the jth dimension

j = the number of profile dimensions (1, 2, ..., 7).

The respondents for this research were SME owners. Those owners engaged in marketing activities such as creating,

distributing and delivering the product, setting the price and promoting their business. Questionnaires were sent to SME owners who were finalists in the two most credible young entrepreneurs' competition in Indonesia, which are Wirausaha Muda Mandiri (WMM) and Shell LiveWire from 2012 to 2014. Those competitions were selected because they were the pioneers in young entrepreneur competition in Indonesia, and attracted thousands of participants. From 400 questionnaires sent, 130 entrepreneurs returned completed questionnaires, resulting in a 32.5% response rate. 80% of respondents were aged between 20 and 30 years old, 63.1% were male, 62.3% had completed an undergraduate degree, and 57.7% started their own business to implement their business ideas. About 83% of the SMEs were established within the last five years and had fewer than 10 employees (93%). They were mostly in the textile and footwear industry (29.2%) and the food and beverages industry (23.3%). All variables were reliable and all 141 items of the questionnaires were valid, so it could be used for further analysis.

RESULTS

An exploratory factor analysis was conducted to form the new dimensions of entrepreneurial marketing. Based on the eigenvalue score and significant factor loading values for each factor (Hair et al., 2010), it can be concluded seven dimensions accounted for 54.2% of the total variance. The new EM dimensions are: customer focus, innovativeness, value creation, opportunity focus, proactiveness, calculated risk taking, and resource leveraging. These dimensions are the same as the existing EM dimensions.

A hierarchical cluster analysis was conducted using the complete linkage agglomerative method to construct the typology of SME marketing strategy. Based on the Analysis of Variance (ANOVA) and the Scheffe multiple comparison (Slater & Olson, 2001), there are five significantly different clusters. These clusters are aggressive marketers (n = 24) that had the highest mean score for all marketing strategy variables. Hence, they used their marketing strategy widely and aggressively. There were 22 mass marketers (n = 22) with no innovative strategy nor unique marketing strategy. Value marketers (n = 28) focused more on customer satisfaction via providing high quality products and the best customer service. Traditional marketers (n = 11) had the lowest mean score for an e-marketing strategy. Finally, the minimiser marketers (n = 45) had the lowest mean score for the marketing strategy variable; hence, they only made a very minimal effort in their marketing strategy.

After that, a profile deviation analysis was conducted by counting the profile deviation scores. Finally, the hypothesis was tested by regressing the profile deviation score with the performance value of each cluster. To support the hypothesis empirically, the deviation from the ideal profile of each cluster should be negatively and significantly related to the growth and profitability performance (Vorhies & Morgan, 2003). The results of the hypotheses

are presented in Table 1.

As shown in Table 1, in terms of H1 growth performance, the coefficient t-test value is negative for all EM dimensions. The value creation variable (-1.909; sig 0.062) and the opportunity focus variable (-1.771; sig 0.083) have a significant value at the 90% confidence level. This means that for all the clusters, H1 is proven. In other words, the greater the fit between the EM dimensions (i.e., value creation, opportunity focus) and the marketing strategy, the higher the growth performance. Value creation and opportunity focus have become the most important EM dimensions in enhancing the growth performance perceptions of SME owners. Hence, the SME owners in Indonesia who want to enhance their growth marketing performance should increase the unique value added to customers (value creation) and focus on chasing the opportunity (opportunity focus).

Table 1 also shows that for H2 (profitable performance), the coefficient t-test value is negative in two EM dimensions. Moreover, opportunity focus (-1.910; sig 0.063) has a significant value at the 90% confidence level. This means that for all of the clusters, H2 is proven. Hence, the greater the fit between the EM dimensions (opportunity focus) and marketing strategy, the higher the profitability performance. Opportunity focus becomes the most important EM dimension in enhancing the profitability performance perceptions of SME owners. As such, SME owners in Indonesia who want to enhance their profitability performance should focus on chasing and implementing all opportunities (opportunity focus).

Table 1
Results of the hypotheses test

Entrepreneurial Marketing Dimension	Growth	Profitability
Customer Focus	-0.006 (-0.041)	0.040 (-0.269)
Innovativeness	-0.222 (-1,579)	0.035 (0.233)
Value Creation	-0,266 (**-1,909**) *	0.017 (0.113)
Opportunity Focus	-0.248 (**-1.771**) *	-0.274 (**-1.910**) *
Proactiveness	-0.175 (-1,231)	-0.074 (-0.498)
Calculated Risk Taking	-0.065 (-0.452)	0.144 (0.975)
Resource Leveraging	-0.181 (-1.277)	0.064 (0.432)

β *score (t value) * sig=5%*

After all the hypotheses were proven, we profiled the SMEs, based on the fit between the EM dimensions and the marketing strategy typology towards growth and profitability performance. The regression results for each marketing cluster are shown in Table 2.

As shown in Table 2, the negative and significant t-test coefficients were mass marketers with a customer focus dimension on profit performance. It also included traditional marketers with proactiveness dimension for growth performance. This implies that the customer focus is the most

Table 2
Regression results for each marketing cluster

EM Dimensions	Aggressive Marketers		Mass Marketers		Value Marketers		Traditional Marketers		Minimizer Marketers	
	Growth	Profit	Growth	Profit	Growth	Profit	Growth	Profit	Growth	Profit
Customer Focus										
β score	-0.272	0.614	0.917	-0.801	-0.405	0.125	0.778	0.500	0.245	-0.118
t-test	-0.748	1.905	**5.14*** **	**-2.99** **	-1.401	0.379	1.748	0.577	1.012	-0.476
Sig	0.479	0.105	0.004	0.003	0.191	0.713	0.222	0.667	0.327	0.641
Innovativeness										
score	-0.274	0.646	0.203	0.041	0.085	-0.08	-0.585	0.962	-0.259	0.045
t-test	-0.755	**2.074***	0.464	0.092	0.27	-0.02	-1.02	3.528	-1.073	0.180
Sig	0.475	0.083	0.662	0.930	0.793	0.982	0.415	0.176	0.299	0.895
Value Creation										
score	-0.049	0.081	-0.133	0.198	-0.019	0.340	-0.275	-0.94	-0.319	-0.103
t-test	-0.129	0.199	-0.300	0.452	-0.061	1.084	-0.405	-2.88	-1.347	-0.414
Sig	0.901	0.849	0.776	0.670	0.953	0.307	0.725	0.212	0.197	0.684
Opportunity Focus										
β score	-0.239	0.449	0.225	-0.395	-0.462	-0.15	-0.732	-0.08	-0.177	-0.275
t-test	-0.652	1.229	0.516	-0.952	-1.648	-0.49	-1.521	-0.08	-0.718	-1.146
Sig	0.535	0.265	0.628	0.385	0.130	0.657	0.268	0.948	0.483	0.269
Proactiveness										
β score	-0.356	-0.432	-0.401	-0.455	0.297	0.291	-0.907	0	0.015	-0.12
t-test	-1,007	-1.174	-0.978	-1.144	0.982	0.911	**-3.04***	0	0.058	-0.482
Sig	0.348	0.285	0.373	0.304	0.349	0.386	0.093	1	0.954	0.636
Calculated risk taking										
β score	-0.045	0.716	0.571	0.24	-0.245	0.097	-0.081	0.225	-0.379	0.069
t-test	-0.118	**2.51** **	1.554	0.553	-0.8	0.293	-0.115	0.231	-1.637	0.27
Sig	0.909	0.046	0.181	0.604	0.443	0.776	0.919	0.856	0.121	0.787
Resource Leveraging										
β score	0.083	-0.144	0.349	-0.645	-0.309	0.154	-0.234	0.692	0.117	0.095
t-test	0.219	-0.357	0.833	-1.89	-1.027	0.467	-0.341	0.958	0.471	0.382
Sig	0.833	0.733	0.443	0.117	0.329	0.651	0.766	0.514	0.643	0.708

*Significant at the 90% level; **Significant at the 95% level; ***Significant at the 99% level

important EM dimension for increasing the perception of growth performance, while proactiveness is the most common EM dimension for increasing the perception of profitability performance. The positive and significant coefficient t-test found in an aggressive marketer's cluster with a customer focus dimension for growth performance, also calculated a risk-taking dimension for a profitable performance. This means that the customer focus is on the EM dimension that would decrease the growth performance. In addition, the calculated risk-taking dimension is the EM dimension that would decrease profitability performance.

DISCUSSION AND CONCLUSION

Based on the SME marketing concepts in Gilmore (2011), a marketing typology for Indonesian SMEs can be constructed. The SME marketing typology is aggressive marketers, mass marketers, value marketers, traditional marketers, and minimiser marketers. Morris et al. (2002) found seven new EM dimensions that were appropriate for Indonesian SMEs. Those dimensions include: customer focus, innovativeness, value creation, opportunity focus, proactiveness, calculated risk taking, and resource leveraging. Finally, the profile deviation analysis significantly proved that the more fit the EM dimension and marketing strategy, the higher its growth performance (H1) and profitability (H2).

The hypotheses were also supported by Kasim and Altinay (2016) who found that Entrepreneurial Orientation (EO) does not directly affect the growth of the company, unless moderated by company strategy. Moreover, Vega-Vázques, Cossío-Silva and Revilla-Camacho (2016) showed EO has not been able to generate positive business performance, unless mediated by Market Orientation (MO). Hence, the integration of EO and MO to become Entrepreneurial Marketing (EM) can improve SMEs' business performance. The results are consistent with that of Baker and Sinkula (2009).

Based on Table 2, the results can be summarised into a SME profile (Table 3).

Table 3
SMEs profile fit among entrepreneurial marketing dimensions, marketing strategy typologies, and performance

EM Dimensions	Aggressive Marketers		Mass Marketers		Value Marketers		Traditional Marketers		Minimiser Marketers	
	Growth	Profit	Growth	Profit	Growth	Profit	Growth	Profit	Growth	Profit
Customer focus	Yes	No	**No***	**Yes***	Yes	No	No	No	No	Yes
Innovative-ness	Yes	**No***	No	No	No	Yes	Yes	Yes	Yes	Yes
Value creation	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Opportunity focus	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 3 *(continue)*

EM Dimensions	Aggressive Marketers		Mass Marketers		Value Marketers		Traditional Marketers		Minimiser Marketers	
	Growth	Profit	Growth	Profit	Growth	Profit	Growth	Profit	Growth	Profit
Proactiveness	Yes	Yes	Yes	Yes	No	No	**Yes***	No	No	Yes
Calculated risk taking	Yes	**No***	No	No	Yes	No	Yes	No	Yes	No
Resource leveraging	No	Yes	No	Yes	Yes	No	Yes	No	No	No

*Significance proven

Aggressive Marketers Type

- SME owners should provide the best service to customers (customer focus), create innovative products or processes (innovativeness), focus on chasing the opportunities (opportunity focus), and be more proactive in seeking out opportunities (proactiveness) to achieve maximum growth performance.
- SME owners should not always create innovative products (innovativeness), due to high costs that will decrease profitability. Do not take into account the risk of the decision (calculated risk taking), because it will cause SME owners to be too cautious in making the decision. As a result, the opportunity could be snapped up by competitors.

Mass Marketers Type

- SME owners should be more proactive in seeking out opportunities (proactiveness) and avoid focusing on particular customers (customer focus), as it will narrow the market reach and the target market will not be achieved.
- SME owners should be customer-oriented. They should provide and serve customers with the best (customer focus) customer service. These customers may become loyal and generate profits for the company. In addition, SME owners are more proactive in finding opportunities (proactiveness) and working together with other SME owners (resource leveraging) to increase profitability.

Value Marketers Type

- SME owners should focus on delivering things the customer wants (customer focus), focusing on seeking opportunities (opportunity focus), and working together with other SME owners (resource leveraging) to achieve maximum growth performance.
- SME owners should focus more on pursuing and achieving all

opportunities (opportunity focus) to achieve a maximum profitability performance.

Traditional Marketers Type

- SME owners should be more proactive in seeking out opportunities (proactiveness) in order to increase their market share. Moreover, the SME owners should be innovative and focus on pursuing opportunities to achieve maximum growth performance.
- SME owners should create and deliver a unique value that differs from that of their competitors (value creation), to achieve maximum profitability.

Minimiser Marketers Type

- SME owners should be more innovative (innovativeness), create unique value added (value creation), and focus on pursuing opportunities (opportunity focus), while still taking into account all the risks to be faced (calculated risk taking), to achieve their maximum growth performance.
- SME owners should focus more on pursuing and achieving all opportunities (opportunity focus). They should also be more proactive on opportunities (proactiveness), to achieve maximum profitability.

The results of this study proved that SME owners who had certain dimensions of EM orientation, combined with the right marketing strategy, will perform better than their competitors. The EM orientation becomes an important resource to SMEs, because it will help in their decision-making process in terms of boosting their performance. This study contributes to the Resource-Advantage Theory (Hunt, 1995), in that, intangible resources are more powerful and important in achieving superior performance for SMEs.

A profile deviation analysis was used to empirically support all the hypotheses. Hence, the profile deviation technique could be used in profiling the SME owners as a fit among the EM dimensions, marketing strategy typology, and marketing performance. This study adds to research on profile deviation analysis which have been successfully used by some marketing science studies (Malhotra et al., 2013).

Managerially, SME owners who want to achieve better performance than competitors should combine EM dimensions with marketing strategy. The two most important entrepreneurial marketing dimensions for SME owners are value creation (creating value added for customer) and opportunity focus (focus pursuing opportunities). The aggressive marketers are those with SME profile showing best growth and profitable performance. The aggressive marketers are SMEs owners who use most of marketing strategy aggressively and the EM dimensions. In other words, the aggressive marketers' type is the ideal profile for SMEs.

Therefore, SME owners should implement the marketing activities aggressively in their daily lives. Those marketing strategies include developing the unique or different product with strong brand and unique packaging that differ from than their competitors (product mix), setting the price in accordance with target market and offering attractive prices to attract new customers periodically (pricing), choosing the right location near target market and delivering the products as promised (placement). Additionally, SME owners should optimise their nonmonetary sales promotion such providing bonus or gifts to make the customer feel special. Additionally, digital promotion by using social media or website and can generate positive Word of Mouth from their social media activities.

Besides those mix strategies, SME owners also should provide personalised customer service. This will help to build its good reputation and develop trust not only with its customer but its suppliers, vendors, investors, and other stakeholders in their network (reputation and networking). SME owners also should enhance their knowledge and skills, both in entrepreneurial marketing and marketing strategies (competency). They could be a member of a business community or learn from the training and mentoring process.

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Capital Buffer for Stronger Bank Stability: Empirical Evidence from Indonesia's Commercial Banks

Dwi Nastiti Danarsari*, Viverita and Rofikoh Rokhim

Department of Management, Faculty of Economics and Business Universitas Indonesia, Depok Campus, 16424 Depok, Indonesia

ABSTRACT

This study investigates the relationships between capital buffer and bank stability among commercial banks in Indonesia during the period 2001 to 2015. The scope of this study is before and after the 2007-2008 financial crisis and the implementation of Basel II and Basel III in Indonesia's banking sector. By using dynamic panel regression, the estimation indicates that improvement of the capital buffer will enhance bank stability. Furthermore, bank market power, revenue diversification, and size have a positive impact on boosting bank stability. Hence, this study offers insights into the role of capital buffer in supporting bank stability.

Keywords: Bank capital buffer, bank capital, bank stability

INTRODUCTION

Indonesia's economy and banking sector took a battering during the 1997 Asian crisis. After struggling to recover from the meltdown, again in 2007, Indonesia was not spared when the subprime mortgage crisis hit the United States which affected the global economy. However, Indonesia's economy was relatively strong during the 2007-2008 crisis, despite the general slowdown in the global economy (Bank Indonesia, 2008).

Bank capital plays an important role in promoting bank stability and hence, it is strictly regulated and supervised. However, there are arguments whether bank capital supports bank stability. According to the moral hazard theory, capital reduces agency costs due to conflict of interest between stockholders and creditors (Jensen & Meckling, 1976). A highly capitalised bank will reduce the incentive of moral hazard and tend to adopt good management practices

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E-mail addresses:
dwi.nastiti@ui.ac.id/winnie.dwinastiti@gmail.com (Dwi Nastiti Danarsari)
viverita.d@ui.ac.id (Viverita)
rofikoh.rokhim@ui.ac.id (Rofikoh Rokhim)
* Corresponding author

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because the shareholders are actively involved in controlling and monitoring the management of costs and capital allocation (Fiordelisi, Marques-Ibanez, & Molyneux, 2011). Moreover, capital absorbs the loss potential during a crisis (Van den Heuvel, 2002). However, signalling perspectives suggest that large amounts of capital indicate that a bank holds risky assets (Berger, Herring, & Szego, 1995). Another side of the moral hazard view states that capital can be counterproductive, since it drives excessive risk-taking (Berger & Bouwman, 2013). As the capital increases to fulfil the requirement, it leads bank managers to adjust the bank's asset risk (Van Hoose, 2007). Therefore, even though the regulator enacts capital regulations for good purposes, such regulations have an unforeseen favourable effect.

Some empirical studies show that capital regulations can either have a positive significant impact or no impact at all on bank stability. Chalermchatvichien, Jumreornvong and Jiraporn (2014) found that an increase in capital decreases the bank's risk-taking behaviour. However, Barth, Caprio and Levine (2004), and Demirguc-Kunt and Detragiache (2011) did not find a significant impact of capital regulations on bank stability.

A capital buffer is usually defined as excess capital above the minimum requirements (Garcia-Suaza, Gómes-Gonzáles, Pabón, & Tenjo-Galarza, 2012; Shim, 2013). Under the capital buffer theory, banks tend to hold a capital buffer to maintain the capital level above the minimum requirements, because they face explicit and implicit costs when their capital is below the requirements (Jokipii & Milne, 2011). The authors suggested that explicit costs relate to penalties and/or restrictions imposed by regulations are triggered by regulatory breaches, while the implicit costs may be due to regulatory interference designed to control excess demands for insurance. Jokipii and Milne (2011) examined the relationship between bank capital buffer and risk adjustment and found that changes in capital buffer affect the risk of high and low capitalised banks differently.

Many previous studies have focused on the impact of capital regulations on bank stability (Barth et al., 2004; Chalermchatvichien et al. 2014; Demirguc-Kunt & Detragiache, 2011). However, as noted previously, holding a capital buffer has explicit and implicit costs (Jokipii & Milne, 2011). The literature related to capital buffers examines their procyclical and countercyclical characteristics (Shim, 2013). To the best of our knowledge, there is a dearth of research on the impact of capital buffers on stability. Therefore, this study aims to fill the gap in the literature by examining the relationship between capital buffers and bank stability, rather than assessing the relationship between capital regulation and bank stability.

A capital buffer refers to excess capital over the requirement. This study examines the impact of capital buffers on bank stability, specifically, the incremental effect of buffer on enhances bank stability. The

focus is on Indonesia's banking sector for the following reasons. First, Indonesia is a bank-based country. Considering the domination of the banking sector in Indonesia's financial system, bank stability is an important factor for financial stability. Second, Indonesia's banking sector is concentrated. After financial deregulation in 1988, the number of banks in Indonesia increased significantly, but the competition was concentrated. In 2014, that competition structure was still concentrated. Out of the nation's 119 commercial banks, 62% of the banks' total assets were held by the 10 largest banks. A bail-out by the government to banks that experienced failure shows the phenomenon of "too big to fail". Third, besides the "too big to fail" phenomenon, Brown and Dinç (2011) illustrated the phenomenon of "too many to fail" in some emerging markets, including Indonesia. Lastly, Indonesia has adopted the Basel I, II, and III principles as the international standards for its banking regulations.

This study contributes to providing insight about the role of additional capital buffers in strengthening bank stability The result of this study will provide an indication about the implementation of Basel III, which is still on-going. Capital buffers will be a crucial issue since bank bail-in is considered to be included in Indonesia's Banking Law. Moreover, as we include bank specific variables, our findings will emphasise the importance of strengthening individual banks to support bank stability. As argued by Vallascas and Keasey (2012), even though the macroprudential perspective, which focuses on the whole financial system, is important, a micro-prudential approach is still the main concern of regulations.

The dynamic panel regression with a two-step system GMM approach was used to analyse the sample consisting of 70 commercial banks. The empirical result indicates that the incremental capital buffer has a positive impact on changes in bank stability. As such, increases in capital buffer will enhance bank stability.

The remainder of this paper is organised as follows. Section 2 is a brief review of the impact of Basel in Indonesia's banking sector. Section 3 describes the research methodology, which includes the empirical model and description of the variables. Section 4 discusses the regression results while Section 5 concludes the paper.

The Implementation of Basel in Indonesia's Banking Sector

Basel I was published by the Basel Committee on Banking Supervision (BCBS) in 1988, and Indonesia's banking sector adopted Basel 1 in 1993. Under Basel I, banks are recommended to maintain a minimum capital ratio of 8%. Indonesia's Central Bank, through Bank Indonesia Regulation ("Peraturan Bank Indonesia" or "PBI") PBI No. 3/21/PBI/2001, has an 8% minimum capital requirement for risk-weighted assets. Furthermore, in 2004, the BCBS issued a new capital framework, known as Basel II, which was further refined in 2006 (Bank Indonesia, 2012). Indonesia's banking sector adopted Basel II in 2007. The objective of Basel II is to ensure the stability financial

system through three pillars: minimum capital requirements, a supervisory review process, and market discipline (Bank Indonesia, 2006). Indonesia's Central Bank adopted Basel II through several regulations in relation to the components of the three pillars. Regarding the capital regulation, one of the regulations issued by Indonesia's Central Bank was PBI No. 10/15/PBI/2008, which regulates more detailed components of the Tier I, Tier II, and Tier III capital. As a response to the 2007-2008 financial crisis, the BCBS renewed the guidance of capital regulations for the banking sector under Basel III. Basel III was published by the BCBS in 2010 (Bank Indonesia, 2012).

Basel III suggests standards about capital, liquidity, and leverage to strengthen regulations, supervision, and risk management in the banking sector. The capital standards require banks to hold a larger amount of capital than the requirement under Basel II. Basel III aims to achieve a minimum capital requirement of 8% by January of 2019 (Vallascas & Keasey, 2012) and other stricter capital requirements.

Indonesia's banking sector implemented Basel III gradually from January 2013, and Basel III is expected to be fully implemented in January 2019 (Bank Indonesia, 2012). Regarding the capital regulation, Indonesia's Central Bank issued a PBI that requires banks to gradually hold a capital conservation buffer, countercyclical buffer, and/or capital surcharge. Based on this regulation, since January 1, 2016, all banks were required to hold a countercyclical buffer ranging from 0% to 2.5% of the bank's risk-weighted assets. The capital buffer is expected to promote bank stability. However, to fulfil the requirements of the capital buffer, there is a possibility that a bank's excessive risk-taking behaviour will eventually affect its stability.

METHODS

Sample and Data

This study analysed data obtained from Indonesian commercial banks data. Data from sharia banks, rural banks, and local development banks were excluded, since they have different regulations and market structures from commercial banks. The banks included in the sample have a minimum of 14 years of financial statement, complete ratio components, and a positive total equity and profit before tax. The total sample consists of 70 banks, which covers 1,003 observations from 2001 to 2015. Data used for calculating bank specific variables were obtained from annual financial statements published by Indonesia's Central Bank and the Financial Services Authority of Indonesia.

Empirical Model

As stated previously, this study uses a dynamic panel regression with a two-step system GMM, introduced by Arellano and Bover (1995), and Blundell and Bond (1998), to examine the impact of bank capital buffers on bank stability. The system estimator serves a more flexible variance-covariance structure under the moment

conditions, and the GMM approach is better than the traditional OLS in assessing financial variable movements (Lee & Hsieh, 2013). The following equation is used:

$$\begin{aligned}\Delta STAB_{i,t} = {} & \alpha_0 + \beta_1 \Delta STAB_{i,t-1} + \beta_2 \Delta BUFF_{i,t} \\ & + \beta_3 MKTPWR_{i,t} + \beta_4 REVDIV_{i,t} \\ & + \beta_5 SIZE_{i,t} + \beta_6 SOB_{i,t} + \beta_7 FOB_{i,t} \\ & + \beta_8 ROA_{i,t} + \beta_9 DUMMYCRISIS_t \\ & + \beta_{10} DUMMYCAPREG1_t \\ & + \beta_{11} DUMMYCAPREG2_t \beta_{12} GDPGR_t \\ & + \varepsilon_{i,t}\end{aligned} \quad (1)$$

Description of Variables

Bank stability (STAB) is the dependent variable, and Z-score as the measure. Following Lepetit and Strobel (2013), the Z-score is computed as the return on assets (ROA) plus the capital-adequacy ratio divided by the standard deviation of assets return, which is calculated over the full sample. The Z-score measures distance from insolvency, and it increases as profitability and solvency increase, and decreases as the standard deviation of return increases. A higher Z-score indicates a lower probability of insolvency, which is a direct measurement of the bank's stability (Kasman & Carvallo, 2014).

Capital buffer (BUFF) is the independent variable. It is measured as the difference between the ratio of total capital to the risk-weighted assets and the minimum capital ratio requirement. This study uses 8% as the capital requirement for 2001 to 2014, based on PBI No. 3/21/PBI/2001, dated 13 December 2001, and PBI No. 9/13/PBI/2007, dated 1 November 2007. Furthermore, in 2012, Bank Indonesia renewed the capital requirement through PBI No. 14/18/PBI/2012, dated 28 November 2012. This requirement obliged banks to hold a certain ratio as a minimum amount of capital based on the bank's risk profile. Capital requirement data based on a bank's risk profile only became available in 2015; it is still not available for all banks. Considering these limitations, this study uses the 8% capital requirement for period 2012 to 2014 and for banks whose 2015 data of risk-based capital ratio are not available.

Several control variables are incorporated which covered bank market power (MKTPWR); bank specific variables, namely bank revenue diversification (REVDIV), size (SIZE), profitability (ROA); bank ownership (FOB and SOB); dummy of crisis; dummy of capital regulations; and a macroeconomic variable.

Following Iveta (2012), this study uses the Lerner Index to measure bank market power. It also measures the inefficiency that comes from the difference between the price and the marginal cost. The Lerner index is written as follows:

$$Lerner_{i.t} = \frac{(P_{i,t-} MC_{i.t})}{P_{i,t}} \quad (3)$$

where price (P) is the price of the total assets of bank i at time t, proxied by the total revenue (interest and non-interest income) divided by the total assets. Marginal cost (MC) is derived from the following translog cost function, following the study conducted by Iveta (2012):

$$lnTC_{i,t} = \beta_0 + \beta_1 lnQ_{it} + \frac{1}{2}\beta_2 lnQ_{i,t}^2 + \sum_{k=1}^{3} \gamma_{kt} W_{k,it} + \sum_{k=1}^{3} \emptyset_k \; lnQ_{i,t} lnW_{k,it} + \frac{1}{2}\sum_{k=1}^{3}\sum_{j=1}^{3} \ln W_{k,it} \, lnW_{j,it} + \varepsilon_{it} \quad (4)$$

where TC_{it} is the total operating cost, Q_{it} represents the bank's output or total assets of bank i at time t. $W_{k,it}$ is the three input prices, which are the input price of labour (ratio of personnel expenses to total assets), the price of funds (interest expenses to total deposits), and the price of fixed capital (other operating and administration expenses to fixed assets), respectively. The marginal cost is calculated as follows:

$$MC_{i.t} = \frac{TC_{it}}{Q_{it}} \left[\beta_1 + \beta_2 lnQ_{it} + \sum_{k=1}^{3} \emptyset_k lnW_{k,it} \right] \quad (5)$$

The adjusted Herfindahl Hirschman Index (HHI) is also used following Elsas, Hackethal and Holzhäuser (2010), as a proxy of revenue diversification. It is measured as:

$$REVDIV_{i,t} = \left[1 - \left[\left(\frac{INT^2}{REV} \right) + \left(\frac{COM^2}{REV} \right) + \left(\frac{TRAD^2}{REV} \right) + \left(\frac{OTHER^2}{REV} \right) \right] \times 100 \right] \quad (6)$$

where INT represents the interest revenue; COM, TRAD, and OTHER represent the revenue from commissions, trading activities, and other revenues respectively and REV is the total revenue.

Based on Pessarossi and Weill (2015), size is computed by the natural logarithm of the bank's total assets. Dummy variables were used for SOB (State-Owned Bank) and the FOB (Foreign-Owned Bank) to represent government-owned and foreign-owned banks respectively. Dummy variable SOB will be 1 if the bank is state-owned bank; it is 0 for other banks. Dummy variable FOB will be 1 for a foreign and joint venture bank and 0 for other banks. Furthermore, profitability is proxied by ROA, which are computed as the net income divided by the total assets.

The dummy variable crisis is used to accommodate the effects of the 2007-2008 financial crisis. The dummy variable crisis will be 1 for the years of 2007 and 2008, and 0 for all other years. To accommodate the effect of changes in regulations during the research period, this study included two dummy variables of capital regulation. The first dummy variable, Dummy Capreg1, represents PBI No. 10/15/PBI/2008, which regulates stricter components of bank capital. This regulation was officially enacted on January 1, 2009, and therefore, the dummy variable of Capreg1 will be 1 for 2009 to 2011, and 0 otherwise. The second dummy variable, Dummy Capreg2, represents PBI No. 14/18/PBI/2012, which regulates the risk-based capital ratio. This regulation was officially enacted on November 28, 2012; hence, the dummy variable of Capreg2 will be 1 for 2012 through to 2015 and 0 otherwise.

The GDP growth (GDPGR) is employed to capture the effect of the business cycle

and use the lag of GDP growth in the regression model, considering that the effect of the business cycle occurs in later years.

RESULTS AND DISCUSSION

Table 1 is the descriptive statistics of the variables examined in the empirical model. The dependent variable ΔZ-score (Z-score of bank i in year t minus year t-1) has a mean value of -0.2749. The mean of ΔBuffer is -0.0029. The Lerner Index, the proxy of bank market power, has an average value of 0.2900. The mean value of revenue diversification is 0.2861. Bank profitability is measured by the ratio of the ROA. The average value of the ROA is 0.0193.

Table 1
Descriptive statistics

Variable	Obs	Mean	S.D.	Min	Max
Z-score	1003	37.849	34.029	0.693	264.847
ΔZ-score	913	(0.275)	20.650	(147.462)	233.121
Buffer	1003	0.173	0.201	(0.00005)	2.213
Δ Buffer	913	(0.003)	0.162	(2.122)	2.113
MktPwr	1003	0.290	0.122	(0.329)	0.744
RevDiv	1003	0.286	0.151	0.008	0.704
Total assets (in million Rupiah)	1003	35,747,973	91,322,736	58,012	845,998,379
Size	1003	15.470	2.068	10.968	20.556
ROA	1003	0.019	0.042	(0.008)	0.854
SOB	1003	0.059	0.236	0.0	1.0
FOB	1003	0.359	0.480	0.0	1.0
DummyCrisis	1003	0.137	0.344	0.0	1.0
DummyCapreg1	1003	1.349	1.243	0.0	1.0
DummyCapreg2	1003	0.267	0.443	0.0	1.0
GDP growth	1003	0.051	0.007	0.035	0.060

Table 2 presents the correlation matrix between the variables in this study. In the correlation matrix, the dependent variable ΔZ-score is expected to be positively correlated with ΔBuffer.

The two-step system GMM regression results are presented in Table 3. There is the possibility of an endogeneity problem between bank stability and capital buffer. The endogeneity might occur due to the reverse causality, where bank stability influences to the levels of its capital buffers. Moreover, there might be endogeneity due to the reverse causality between bank stability and bank market power, as well as bank stability and bank revenue diversification. This study address this potential problem by using the lag of endogenous variables as instruments and utilising several instrumental variables. Besides using the dummy variable of SOB, the dummy variable of FOB, the dummy variable of crisis, and the lag of

Table 2
Correlation matrix

	ΔZ-Score	l.ΔZ-Score	ΔBuffer	MktPwr	RevDiv	Size	ROA	SOB	FOB	Dummy CapReg1	DummyCapReg2	Dummy Crisis	l.GDP Growth
ΔZ-Score	1												
l.ΔZ-Score	-0.140	1											
ΔBuffer	0.781	-0.183	1										
MktPwr	0.003	0.077	0.002	1									
RevDiv	-0.008	0.007	-0.011	0.292	1								
Size	-0.007	0.033	0.002	0.390	0.506	1							
ROA	0.017	0.026	0.005	0.191	0.059	0.107	1						
SOB	0.002	0.020	0.002	0.122	0.039	0.433	-0.006	1					
FOB	0.005	0.011	0.008	0.288	0.591	0.325	0.069	-0.198	1				
DummyCapReg1	-0.028	-0.055	-0.020	-0.051	0.013	0.038	0.146	-0.001	0.335	1			
DummyCapReg2	0.010	0.008	0.001	0.101	0.245	0.267	-0.101	-0.001	0.067	-0.377	1		
DummyCrisis	0.064	0.117	0.039	-0.049	-0.071	-0.046	-0.048	0.002	0.008	-0.238	-0.290	1	
l. GDP Growth	0.069	-0.039	0.088	-0.095	0.112	0.131	-0.069	-0.003	0.069	0.141	0.192	0.263	1

GDP growth, the dummy variable of listed banks, changes in inflation, and changes in exchange rate as instrumental variables were also employed. Sargan and Hansen's test results indicate that the instruments as a group are exogenous. The Arellano-Bond tests for AR (1) and AR (2) also meet the requirement for no autocorrelation.

Table 3
Regression results

Regression results	Coeff	Prob
Dependent variable: ΔZ-score		
l.ΔZ-Score	0.033*	0.000
ΔBuffer	104.972*	0.000
MktPwr	3.868*	0.000
RevDiv	10.726*	0.000
Size	0.605*	0.000
ROA	-7.108	0.332
SOB	-4.088*	0.000
FOB	-2.541*	0.000
DummyCapreg1	0.080	0.652
DummyCapreg2	-0.458*	0.007
DummyCrisis	2.019*	0.000
l. GDP Growth	-76.791*	0.000
Sargan test		$\chi2$ (89) = 106.44
p-value		(0.1000)
Hansen test		$\chi2$ (89) = 62.47
p-value		(0.9850)
Arellano-Bond test for AR (1)		N(0,1) = -2.22
p-value		(0.0030)
Arellano-Bond test for AR (2)		N(0,1) = 2.03
p-value		(0.0420)

* Significant at 1%

The regression results indicate that ΔBuffer has a positive significant effect on ΔZ-Score, which means that a higher increment in the capital buffer improves bank stability. This finding supports the perspective of moral hazard theory, in that, a higher capitalised bank will reduce the incentive of moral hazard. It also supports the argument which states that capital absorbs losses in the event of a crisis (Van den Heuvel, 2002). This finding is in line with other studies from developed and emerging countries. For instance, Duran and Lozano-Vivas (2014) found that risk-shifting behaviour weakens banks that hold a larger capital buffer in the European Union. In addition, Chalermchatvichien et al. (2014) found that higher capital will lower bank risk-taking in Asia. However, the results were in contrast to those of Barth et al. (2004), and Demirguc-Kunt and Detragiache (2011), who found that compliance to Basel, in the form of stricter capital, does not have a correlation with bank stability.

The estimation results for the control variables show a positive significant impact of bank market power on changes in bank stability, which indicates that a higher bank market power will improve bank stability. This finding is consistent with the results of Berger, Klapper and Ariss (2009), who use a sample of banks from developed countries. It is also consistent with the findings in Ariss (2010), who focused on developing countries using a traditional "competition fragility" view, which states that banks with a higher degree of market power have less exposure to risk, indicating stronger stability. Studies that support the competition fragility view argue that banks with higher market power are capable

of reducing information asymmetry and building sustainable relationships (Petersen & Rajan, 1995). They are also able to screen and distinguish between good and bad prospective debtors (Cetorelli & Peretto, 2000). This advantage will enhance the credit quality, and thus, support bank stability.

For the control variables related to bank specific characteristics, revenue diversification significantly and positively affects changes in bank stability. This result is in line with the finding of Shim (2013), who showed evidence of the benefits of diversification to bank stability in US bank holding companies. This finding is possible, considering that revenue diversification appears to provide effective hedges against the risk (Shim, 2013), and hence, more diversified revenue will enhance bank stability. This result is also consistent with that of Nguyen, Skully and Perera (2012), who study emerging countries in South Asia. They found that revenue diversification and market power jointly affect bank stability, where banks with high market power become more stable when they diversify their income.

Moreover, this study observed that bank size has a positive impact on changes in bank stability. This result is consistent with that of Berger et al. (2009). It is likely is that larger banks have better monitoring technologies and hedging techniques to immunise their portfolios (Berger et al., 2009). Bank profitability seems to have a positive but insignificant impact on bank stability. However, this result is not consistent with that of Duttagupta and Cashin (2011), who showed that bank profitability supported bank stability.

In terms of ownership, the coefficient of the dummy variable of SOB shows a negative and significant sign. The result suggests that SOBs tend to have a lower incremental effect on bank stability. This finding indicate that government ownership may be associated with bank fragility and is possibly due to the "too big to fail" argument, which leads to excessive risk-taking behaviour. Moreover, the dummy variable of FOB also exhibits a negative and significant sign. The result indicates that foreign banks are also associated with lower incremental in bank stability. This finding was supported by Berger et al. (2009), who found a negative relationship between foreign ownership and bank stability. This result might be explained by the nature of foreign banks, which must comply with regulations, both in their home and host countries, which leads to more volatile earnings.

Two capital regulations in the regression model were incorporated through the dummy variable of Capreg1 and the dummy variable of Capreg2. The regression result shows the coefficient of dummy Capreg1 to be positive and insignificant and of dummy Capreg2 to be negative and significant. The possible explanation might be that capital regulation does not have an immediate strengthening effect on bank stability. In 2013, average Z-Score and average Buffer, as well as average ΔZ-Score, and average ΔBuffer exhibited higher figures than those

in 2012. However, in 2014, bank stability and capital buffer, both on average and average incremental, were shown to be relatively weaker than those in 2013. Then, in 2015, the Z-score and capital buffer increased and became higher than those in 2014. These yearly different conditions might imply that banks need time to adjust their capital to comply with the regulations, and the impact of capital buffer on bank stability also takes time.

The coefficient of the dummy variable of the crisis shows a positive and significant sign. The result indicates that the crisis condition is associated with stronger bank stability. Meanwhile, the lag of GDP growth has a significant negative impact on changes in bank stability. This result is in line with that of Saadaoui (2014), whose study of 50 emerging countries across the world shows the negative effect of GDP growth on changes in bank stability is possibly due to the existence of capital adjustment costs, cognitive biases, or risk measurement biases.

For the robustness check, the study employs changes in the ratio of non-performing loan to total loan (NPL) as a measure of bank stability and use the change in NPL (ΔNPL) as the dependent variable replacing ΔZ-Score. The result is consistent with the finding using ΔZ-Score. ΔBuffer has a negative significant effect on ΔNPL, which indicates that the additional capital buffer leads to reduced changes in non-performing loans, which means enhanced bank stability. Moreover, we also run the dynamic panel regression using the GMM difference panel estimator. The result is consistent with that obtained using the system panel model estimator when we use ΔZ-Score as the dependent variable. The result indicates that ΔBuffer has a positive and significant impact on ΔZ-Score. However, when we replace the dependent variable with ΔNPL, the result exhibits a negative but insignificant effect.

CONCLUSION

This study has examined the effect of capital buffers on bank stability. After employing a two-step system GMM estimator in a dynamic panel regression, the overall regression results imply the important role of the capital buffer to promote bank stability. Furthermore, the degree of concentration in the banking sector also becomes an important burden, as higher bank market power will enhance bank stability. For bank-specific variables, bank revenue diversification and bank size have a positive impact on changes in bank stability, whereas SOBs and FOBs have a negative impact on changes in bank stability. The negative impact of a dummy variable for capital regulation on changes in bank stability implies that banks might take time to adjust to capital regulation. Lastly, the regression results reveal that bank stability is affected by a financial crisis and a business cycle. Therefore, this study provides signals regarding the importance of capital buffers in improving bank stability.

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Antecedents of Muslim Attitudes and Online Purchase Intentions: The Effects of Website Design

Salma Amelia Dina[1], Sri Rahayu Hijrah Hati[2]* and Sri Daryanti[2]

[1]*Islamic Business Undergraduate Program Management Department, Faculty of Economics and Business, Universitas Indonesia, 16424 Depok, Indonesia*

[2]*Management Department, Faculty of Economics and Business, Universitas Indonesia, 16424 Depok, Indonesia*

ABSTRACT

This paper examines the effects of website quality and navigation experience on the atttitude and online purchase intention of Muslims women. Website service quality consists of transaction-related services and pre-purchase services. Data was obtained from 318 respondents aged at least 17 years and analysed via descriptive analysis and partial least-squares. The results indicate that transaction-related services and pre-purchase services significantly influence navigation experience, which, in turn, influences customer attitudes and online purchase intentions.

Keywords: e-commerce, fashion, Islamic purchase intention, pre-purchase, transaction

INTRODUCTION

Muslim women or Muslimas statistically have become one of the fastest-growing customer segments in the world. This study is based on a report developed by global marketing communications agency J. Walter Thompson, which shows that young Muslimas, especially those in Malaysia and Indonesia, are influencing many industries, especially the halal fashion industry (Johnson, 2017). The estimated revenue from this segment was $44 billion in 2015 (Reuters, 2016).

In general, fashion can be considered as part of consumer culture that defines one's identity (Barthes, 1983). Fashion is used to communicate social identity as a code and a form of self-expression (Cardoso, Costa, & Novais, 2010). The spread of Islam around the world has helped the development of Muslim lifestyles globally, including in the field of Islamic fashion. One of the products typical of Islamic fashion is the

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E-mail addresses:
salmaadina@gmail.com (Salma Amelia Dina)
sri.rahayu72@ui.ac.id (Sri Rahayu Hijrah Hati)
sri.daryanti@ui.ac.id (Sri Daryanti)
* Corresponding author

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hijab, which can be defined as an instrument of empowerment, a fashion statement, or a form of personal expression. In the Islamic context, wearing a hijab is more than just covering a person's hair; it symbolises modesty, morality, and a harmonious interaction between a Muslim woman and society (Blakeman & Blakeman, 2014). The hijab is a symbol of Islamic belief that differentiates the roles of women and men (Hassan & Harun, 2016).

The marketing of Islamic fashion products itself is diverse, ranging from offline sales via boutiques or at online stores. The sales of fashion products using online stores are rapidly growing to target a broader market segment. Consumers have higher preferences to shop online because online shopping provides the convenience of shopping at home (Jiang, Yang, & Jun, 2013). Based on the research report, modest fashion has become one of the most active Islamic economic sectors that has attracted Muslim millennials. More than 101,000 Muslims in Indonesia, Malaysia, and Pakistan use the online platform to conduct activities related to modest fashion (Reuters, 2016).

Despite its strong growth, the online fashion sector face stiff competition, as the Internet has turned people into savvy online shoppers, which leads them to discard brand loyalty if a product is available at a lower price elsewhere (Degeratu, Rangaswamy, & Wu, 2000). The stiff competition among existing fashion retailers forces entrepreneurs to differentiate retail stores through unique or distinctive market positioning, which combines price and product differentiation to provide competitive advantages (Day & Wensley, 1988). Therefore, many online fashion retailers who sell a product targeted at the Muslimas have used Islamic principles as a unique market positioning.

The constant growth of business-to-consumer (B2C) e-business has shifted B2C focus from the internal management tools to more customer-directed applications, as the power of e-commerce has also shifted from business to the consumer (Cenfetelli, Benbasat, & Al-Natour, 2008). Thus, online vendors try to provide an increasing array of services that support and increase their core products or services to increase purchase intention (Cenfetelli et al., 2008). One of the important factors that influence consumers before they decide to purchase a product in an online store is navigation experience (Küster, Vila, & Canales, 2016). Navigation experience is influenced by website service quality which consists of two main factors - transaction-related services and pre-purchase services (Küster et al., 2016).

Navigation plays an essential role in creating great user experience, as the restricted navigation reduces the probability of the consumer flow experience, which leads to negative attitudes and site avoidance behaviour (Dailey, 2004). In contrast, good navigation experience positively influences consumer attitude and purchase intention (Küster et al., 2016).

To date, only a few studies have examined the effect of website service quality and navigation experience on customer attitude and purchase intention (Küster et al., 2016).

Scholars who specifically examined the effect of website service quality on online shopping behaviour have called for more research on website service quality and navigation experience in different customer segments (Küster et al., 2016). In addition, most of the literature discusses Islamic positioning in the context of Islamic banking (Muhamad, Melewar, & Alwi, 2012). Only a few studies, to the best of our knowledge, discuss Islamic positioning in the Islamic fashion industry (Gökariksel & Secor, 2009). Thus, the current study examines the effect of website service quality on navigation experiences, attitudes, and online purchase intention of Muslimas at Islamic fashion stores.

LITERATURE REVIEW

Islamic Positioning

Positioning refers to the act of designing the company's offering and image to occupy a distinctive place in the target market's mind (Kotler, Wong, Saunders, & Armstrong, 2013). In positioning activity, the marketer selects the target segment by offering a competitive advantage, which defines how it will compete with its competitor (Brooksbank, 1994). There are seven types of positioning approaches, one of which is the cultural symbol. To date, a great majority of studies discusses the positioning in Islamic banks and Islamic financial institutions (Awan & Bukhari, 2011; Muhamad et al., 2012).

Female empowerment within the Muslim community drives demand on modest but fashionable Islamic fashion (Mellery-Pratt, 2014). The social movement raises the question among Muslimas on "How do I dress myself for the modern world?" (Mellery-Pratt, 2014). According to Reina Lewis, professor of cultural studies at The London College of Fashion, the Internet has allowed the proliferation of online Islamic fashion stores, as it requires lower overhead and with a wider reach compared with the offline store (as cited in Mellery-Pratt, 2014). As a consequence, the growing market for Muslim fashion has also led many Muslim entrepreneurs to attach Islamic identity and position their companies, stores, products, and websites using Islamic cultural symbols (Gökariksel & Secor, 2009).

Transaction-Related Services and Pre-purchase Services

A firm's website nowadays has become an integral part of its customer service systems (Piccoli, Brohman, Watson, & Parasuraman, 2004). Therefore, website quality becomes an important factor that influences customer transaction. Website quality is a multidimensional construct comprising transaction-related service and pre-purchase services (Hoekstra, Huizingh, Bijmolt, & Krawczyk, 2015; Küster et al., 2016; Szymanski & Hise, 2000). According to Küster et al. (2016), transaction-related services comprise three indicators: billing and paying mechanisms, delivery arrangements, and security privacy, while pre-purchase services consist of product pricing, support and product search evaluation, and website appearance.

The first dimensions of transaction-related services are billing and paying mechanisms. Billing and paying mechanisms refer to additional services that integrate the act of billing and collecting payment (Piccoli et al., 2004). Refund and billing disputes are frequent in online shopping activities (Liu, He, Gao, & Xie, 2008). High-quality billing and paying mechanisms would help the entrepreneur to attract more consumers, facilitate faster payment, and ensure a secure environment for both the buyer and seller during every transaction (Relander, 2016).

The second dimension of transaction-related services is the delivery arrangement. Delivery arrangement refers to a variety of delivery options provided to the customers in terms of speed and courier service provider (Otim & Grover, 2006). Regardless of delivery arrangement options provided, on-time delivery is invaluable to the customer (Yang, Peterson, & Cai, 2003). In addition, delivery cost is an important criterion in delivery arrangement (Li & Ou, 2007).

Security and privacy is the third dimension of transaction-related services (Küster et al., 2016). Maintaining positive security and privacy perceptions are crucial to sustaining electronic commerce activity (Shneiderman, 2000). Among several indices that influence consumer trust on e-commerce such as privacy statements, third-party privacy seals, third-party security seals, and security features, security issues rank top (Tariq & Eddaoudi, 2009).

According to Otim and Grover (2006), all the above-mentioned transaction-related services, such as delivery arrangements, privacy/security policy and billing and payment mechanism simultaneously influence navigation experiences. The consumers' navigation experience can be developed through the availability of convenient delivery arrangement, billing and paying mechanism, and secure website (Küster et al., 2016). Thus, the following hypothesis is developed:

H_1: Transaction-related services have a positive and significant influence on navigation experiences.

As previously mentioned, pre-purchase services consist of three dimensions: product pricing, support and product search evaluation, and web appearance (Küster et al., 2016). Consumers frequently use the Internet to learn more about a product. Websites that provide product and pricing information undoubtedly will result in a more satisfying online experience (Burke, 2002).

To provide a positive online experience for potential buyers, vendors try to provide rich and easy to access content (Cyr, 2013). However, as consumers currently have more limited time to shop and are exposed to a significant amount of information, they need support from so-called product search and evaluation (Koufaris, Kambil, & LaBarbera, 2001; Lucian, 2014). Product search and evaluation describe the website mechanisms that allow customers to rapidly search and evaluate products and features that make it significantly easier for them to find information or content (Otim &

Grover, 2006). An excellent support for product search and evaluation will reduce the customers' time and effort spent in researching the product (Jarvenpaa & Toad, 1996). Precise, broad, comprehensive, and logically presented and organised product information is important for consumers (Cyr, 2013).

Web appearance reflects an aesthetic dimension of the website. It shows an attractiveness or overall look and design of the website (Otim & Grover, 2006). Buyer's perception about a website is largely influenced by the site's visual appeal (Peng, Peak, Prybutok, & Xu, 2017). Website aesthetics helps online shoppers assess service quality and stimulates affective experiences of using the website, and these organismic responses positively affect transaction-related behaviors (Wang, Minor, & Wei, 2011).

Product pricing, support of product search and evaluation, and web appearance form the pre-purchase services experience which in turn influences customers navigation experiences (Küster et al., 2016). Based on that, the following hypothesis is proposed:

H_2: Pre-purchase services have a positive and significant influence on navigation experiences.

According to Hoekstra et al. (2015), information and transaction-related functions of a website have a significant positive impact on the success of a site regarding consumer attitudes. Companies can improve site performance through the provision of relevant site functions during the consumer purchase process, i.e., transactional and pre-purchase levels. Küster et al. (2016) found that transaction-related services have a positive impact on attitude towards e-retailers. Thus, the following hypothesis is developed:

H_3: Transaction-related services have a positive and significant influence on attitude towards a website.

A website that provides greater product and pricing would lead to better consumer attitudes (Koufaris, 2002). Support of product search and evaluation is also an important factor that influences customer attitudes toward e-retailers (Kolesar & Galbraith, 2003). In addition to product pricing, a good web appearance would also induce positive feelings in consumers (Koufaris, 2002; Liu et al., 2008). All three variables make up the foundation of the pre-purchase services. Thus, the following hypothesis is proposed:

H_4: Pre-purchase services have a positive and significant influence on attitude to a website.

In addition to the services offered, the navigation experience is also predicted to have a positive attitude toward the website determinant. Consumers who experience good Web navigation are more apt to become involved in online activities as they find the interaction gratifying (Novak, Hoffman, & Yung, 2000). A good website navigation experience would erase the customer's self-consciousness and sense of

time and creates a positive attitude toward the website (Novak et al., 2000). Thus, the following hypothesis is proposed:

H_5: Navigation experiences have a positive and significant influence on attitude toward a website.

In the context of when a transaction is not yet completed, the entrepreneur wants to know whether, after the consumer has a navigation experience, he or she will make a purchase on the relevant site in the future. Attitude towards a website is one of the factors affecting purchase intention (Floh & Treiblmaier, 2006). The same finding was reported by Otim and Grover (2006), and Küster et al. (2016), which show that attitude toward a website has a positive effect on purchase intention. Thus, the hypothesis proposed in this study is:

H_6: Attitude toward a website has a positive and significant impact on purchase intention.

Based on the above discussion, the following research framework is developed:

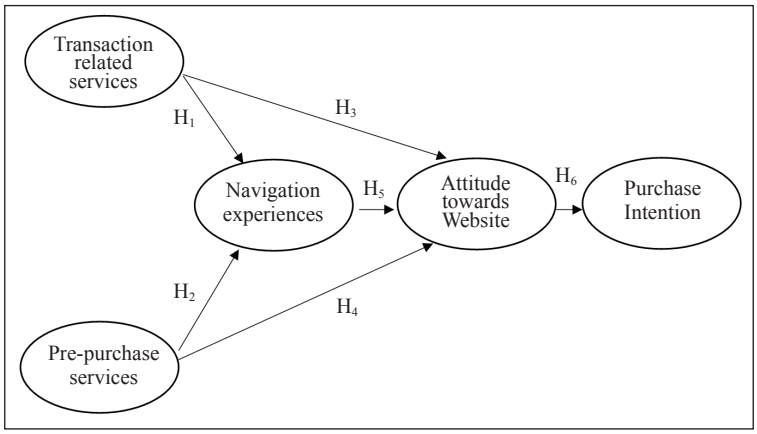

Figure 1. Research framework
Adapted from Küster, Vila and Canales (2016)

METHOD

The target sample of this study is Muslimas, aged over 17 years, who are users of Islamic fashion products and have had an online shopping experience. The Hijup site is chosen as representing an online store with Islamic positioning specialising only in selling fashion products suitable for hijab donning Muslimas. In addition, Hijup is the first Islamic fashion e-store in Indonesia. The reason for choosing this target group is that women of this age are the most important consumers of Islamic fashion products and target market of Islamic fashion products.

The method used in this study is nonprobability sampling, in which each member of the population does not have an equal opportunity to be included in a sample. The nonprobability sampling technique used is judgmental sampling by the required characteristics.

The sample size in the study follows the guideline of the sampling size in which it should have a minimum number of five times of items (Hair, Black, Babin, & Anderson, 2010). Therefore, the number of respondents used in this study is a minimum of 160 (obtained from 32 question items multiplied by five).

The researchers contacted 500 potential respondents via e-mail, but only 318 of them had agreed to participate in the online survey which consisted of 32 items. Thus, this study had a response rate of 63.6%. Before the respondents answered the questions, they were required to conduct the online purchase at the Hijup website.

Delivery arrangements dimension scale, e.g., "the delivery arrangements are clear and detailed" (four items), security scale (three items), e.g., "I found secure to buy on this web"; and billing and payment scale (two items), e.g., "I found easy to buy in this web," were used to measure the transaction-related variable (Küster et al., 2016; Liang & Lai, 2002; Otim & Grover, 2006; Torkzadeh & Dhillon, 2002).

The pre-purchase services variable was measured by the support product search and evaluation scale (eight items), e.g., "I found the website fast and dynamic"; web appearance scale (four items), e.g., this website offers a global and complete information about all the products sold"; and product pricing scale (four items), e.g., price information is clear (Küster et al., 2016; Lee & Lin, 2005; Otim & Grover, 2006). Navigation experience was measured using a five-items scale, e.g., "I think I have taken the correct decision to use this website" (Flavián, Guinalíu, & Gurrea, 2006; Küster et al., 2016). The attitude toward website scale, which consists of five items, e.g., "This website connects with me" (Chen & Wells, 1999; Ko, Cho, & Roberts, 2005; Küster et al., 2016). Purchase intention was measured using a three-item scale, e.g., "I would buy from this online store with Islamic positioning" (Belanger, Hiller, & Smith, 2002; Küster et al., 2016; Lee & Lin, 2005).

Data was analysed using partial least-squares (PLS), as it was not normally distributed, and no further transformation was needed.

RESULTS

Based on its demographic characteristics, the majority of the sample of the study was higher education students (79.56%), single (93.08%), and spent around IDR100,000 – s/d IDR300,000 (49.96%) on clothing.

Validity and reliability analysis on the measurement shown in Table 2 shows that all the variable validity and reliability can be seen from the average variance extracted (AVE> 0.5) and composite reliability (CR> 0.7).

Based on the value of R^2 in Table 3, the value of goodness of fit is equal to 0.7849, which is considered as a high model fit.

Based on Table 4, delivery arrangements (DA) is the stronger variable affecting transaction-related services with β = 0.4298. The result indicates that delivery arrangement has a higher impact than the billing and payment mechanism (BP), which

has a β-value of 0.3244 or security and privacy (SEC) with a value of β = 0.3181.

The PLS analysis shows that for pre-purchase services, support of product search and evaluation is found to have a stronger influence on pre-purchase service. Furthermore, of the three variables that affect attitude towards a website, navigation experiences have the strongest impact. Last, the highest value is related to attitude toward the website on purchase intention.

Table 1
Demographic characteristics

Variable		Frequency	Percentage
Occupation	Students	253	79.56%
	Employee	29	9.12%
	Homemaker	11	3.46%
	Entrepreneur	9	2.83%
	Others	16	5.03%
	Total	**318**	**100%**
Marital Status	Single	296	93.08%
	Married with children	18	5.66%
	Married without children	4	1.26%
	Total	**318**	**100%**
Monthly fashion expenditure	< IDR100,000, -	54	16.98%
	IDR100,000, - s/d IDR300,000, -	158	49.69%
	IDR300,001, - s/d IDR600,000, -	73	22.96%
	IDR600.001, - s/d IDR900.000, -	20	6.29%
	IDR900.001, - s/d RIDR1.200.000, -	5	1.57%
	>IDR1.200.000, -	8	2.52%
	Total	**318**	**100%**

Table 2
Validity and reliability analysis

Variable	Average Variance Extracted	Composite Reliability
Transaction-related services	0.6910	0.9571
Billing and paying mechanism	0.7972	0.9218
Delivery arrangement	0.7921	0.9384
Security privacy	0.7965	0.9215
Pre-purchase services	0.6335	0.9499
Product pricing	0.7321	0.8912
Support and product search evaluation	0.7645	0.9285
Website appearance	0.7377	0.9183
Navigation experience	0.8386	0.9397
Attitude toward website	0.7703	0.9303
Purchase intention	0.7300	0.9150

Table 3
Goodness of fit

Variable	R^2	Communality
Transaction-related services	1.0000	0.6910
Billing and paying mechanism	-	0.7972
Delivery arrangement	-	0.7921
Security privacy	-	0.7645
Pre-purchase services	1.0000	0.6335
Support and product search evaluation	-	0.7645
Website appearance	-	0.7377
Product pricing	-	0.7321
Navigation experience	0.7349	0.8386
Attitude toward website	0.6635	0.7703
Purchase intention	0.6921	0.7300
Average	**0.8181**	**0.7530**

Gof = $\sqrt{0.8181\ x\ 0.7530}$ = 0.7849

Table 4
Hypotheses testing result

Hypothesis	Variable	Dimension	β	B	*t*-Statistics	Results
H_1	Transaction related services navigation experiences		0.4707		6.8853	Significant
		Billing and paying mechanism → transaction-related services		0.3244	45.3788	Significant
		Delivery arrangement → transaction related services		0.4298	54.1073	Significant
		Security privacy → transaction-related services		0.3181	38.7106	Significant
H_2	Pre-purchase services → navigation experiences		0.4160		5.9557	Significant
		Product pricing → pre-purchase services		0.2904	39.4504	Significant
		Support and product search evaluation → pre-purchase services		0.4106	38.2734	Significant
		Website appearance → pre-purchase services		0.3837	48.0198	Significant

Table 4 *(continue)*

Hypothesis	Variable	Dimension	β	B	*t*-Statistics	Results
H_3	Transaction-related services → attitude toward the website		0.3217		4.4090	Significant
H_4	Pre-purchase services → attitude toward the website		0.2019		2.3821	Significant
H_5	Navigation experiences → attitude toward the website		0.3371		4.2086	Significant
H_6	Attitude toward the website → Purchase intention		0.8319		38.8174	Significant

The result of the hypothesis testing analysis in Table 4 also shows that the transaction-related services have a positive and statistically significant influence on navigation experience (NAV) because the *t*-value (*t*-value = 6.8853) is larger than 1.64. Hence, hypothesis H_1, which proposes that transaction-related services have a positive and significant influence on navigation experiences (NAV***),*** is accepted.

Based on its β-value, the delivery arrangement is the strongest dimension that has an influence on the transaction-related services (β = 0.4298), followed by billing and paying mechanism (β = 0.3244) and security privacy (β = 0.3181).

Similar to the first hypothesis, a significant relationship is also found between pre-purchase services with navigation experience (NAV) because the *t*-value is larger than 1.64. Based on its β-value, support and product search evaluation is the strongest dimension that has an influence on the pre-purchase services (β = 0.4106), followed by website appearance (β = 0.3837) and product pricing (β = 0.2904).

A positive and significant figure of *t*-value (4.4090) in the relationship between transaction-related services and attitude toward website indicates that hypothesis H_3 is also accepted.

Pre-purchase services is also positively influenced by attitude towards a website as the *t*-value (2.3821) is larger than 1.64. Hence, H_4 hypothesis, which claims that pre-purchases service has a positive and significant influence on attitude toward a website, is accepted.

The H_5 hypothesis testing shows a positive and statistically significant navigation experiences (NAV) on attitude toward a website with *t*-value (4.2086).

A similar result was also found on the relationship between attitude toward the website with purchase intention (INT). The *t*-value (38.8174) is larger than 1.64 and thus, hypothesis H_6 is accepted.

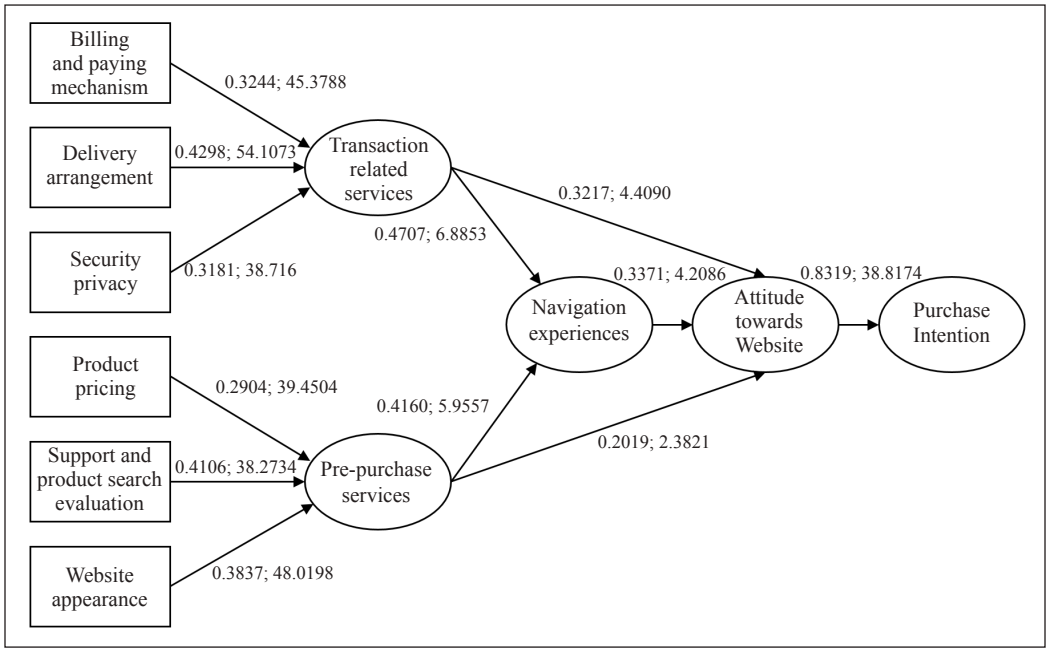

Figure 2. Measurement model

Figure 2 shows the relationship between the researched variables and their dimensions. The results show that transaction-related and pre-purchase services have a positive and statistically significant influence on the navigation experience. However, based on the β-value of each factor, transaction-related services (β = 0.4707) have a stronger influence on navigation experience compared with pre-purchase services (β = 0.4160).

A similar pattern also was found in the relationship between transaction-related services and pre-purchase services on attitude toward a website. Transaction-related services (β = 0.3217) have a stronger influence on attitude toward a website compared with the pre-purchase services (β = 0.2019). However, the attitude a toward website was affected more by the navigation experience (β = 0.3371) compared with the transaction-related services and pre-purchase services on attitude toward a website. In other words, the indirect effect of transaction related services and pre-purchase services on attitude toward a website via navigation experience is higher compared with its direct effect. The result also shows that the attitude toward a website has a strong influence on purchase intention (β = 0.8319)

DISCUSSION

The future of an Islamic fashion online store depends on what drives Muslimas to make an online purchase. The current study adapted the research model proposed by Küster et al. (2016), which examined the impact of the navigation experiences on attitudes and online purchase intention

of Muslimas from stores with an Islamic positioning. Küster et al. (2016) conducted his study using a fictitious website while the current study used a real website. In addition, this study targeted only Muslim women or Muslimas, as the website is specically targeted toward Muslim women. This research contributes toward filling a gap in the Islamic marketing discipline on the importance of Islamic positioning to Islamic business; but our understanding of this phenomenon in Internet settings is limited. The current study also provides empirical evidence on the importance of website quality on navigation experience, attitudes, and online purchase intention of Muslimas.

The current study has crucial differences compared with Küster et al. (2016), namely the effect of delivery arrangement on transaction-related services. While Küster et al. (2016) found the influence of delivery arrangement on transaction-related services was statistically insignificant, the current study found the contrary where the former was the stronger variable that influenced transaction-related services. This is consistent with previous studies, which show the importance of speed and cost of delivery as a component of delivery arrangement in an e-commerce setting (Otim & Grover, 2006; Yang et al., 2003).

According to Küster et al. (2016), transaction-related services have a lower influence on navigation experience compared with pre-purchase services. In contrast, the current study found that transaction-related services have a higher impact on navigation experience compared with pre-purchase services. The study indicates the significant effects of billing and payment mechanism, delivery arrangements and security and privacy variables on female only customers. It is likely female buyers are concerned over security and privacy, the risks related to online purchase (Garbarino & Strahilevitz, 2004). Therefore, the current study which examines female-only sample found a higher impact on the security and privacy as the component of transaction-related services.

The third differences lie in the relationship between transaction-related services, pre-purchase services, and navigation experience on attitude toward a website. Küster et al. (2016) found no significant influence of pre-purchase services on attitude toward a website. In other words, their study found that attitude toward a website is only directly influenced by two variables: transaction-related services and pre-purchase services. The effect of pre-purchase service on purchase intention is indirect via the navigation experience. In contrast, the current study found that all three variables —transaction-related services, pre-purchase services, and navigation experience — significantly influence attitude towards a website. Therefore, the current study confirms the findings of previous studies that investigated those aforementioned variables (Hoekstra et al., 2015; Kolesar & Galbraith, 2003; Koufaris, 2002; Liu et al., 2008; Novak et al., 2000).

Similar to Küster et al. (2016), the current study found that the attitude toward a website is strongly influenced by the consumer's purchase intention. Findings of previous studies that pointed to the robust relationship between attitude toward a website and online purchase intention are also supported in the current study (Floh & Treiblmaier, 2006; Otim & Grover, 2006).

CONCLUSION

The result of the study shows that attitude toward a website has a powerful influence on Muslimas' online purchase intentions from fashion stores that have an Islamic positioning. The attitude towards a website is directly influenced by the transaction-related services and pre-purchase services and indirectly via navigation experience. The direct effect of navigation experience is higher compared with the transaction-related services and pre-purchase services, which shows the importance of navigation experience as the integration between the transaction-related services and pre-purchase services.

Based on the above discussion, the following managerial implications can be identified. First, the online store with Islamic positioning should consider both transaction-related services and pre-purchase services to induce a positive navigating experience. In terms of transaction-related services, the e-retailer with Islamic positioning should provide fast, timely, details and clear refund policy, as those delivery arrangement aspects are the most significant factors that influence transaction-related services. An online store with Islamic positioning should also consider the billing and paying mechanism and security aspects as both dimensions positively influence the Muslimas' navigation experience.

The results also imply that fashion e-retailers with an Islamic positioning should ensure that their websites have an attractive appearance by using a variety of colours and attractive images as Muslimas typically place a high importance on this dimension compared with product pricing and support and product search evaluation.

The research contributes to knowledge in three main ways. First, the study provides a strong evidence on the robustness of the effects of both transaction related services and pre-purchase services on the overall navigation experience despite the use of one gender only. Second, the study applies the model to a different type of store, namely that with an Islamic positioning.

This study has some limitations. First, given that the findings in this study pertain to online fashion stores with Islamic positioning, future research should examine other types of online stores. Second, an online store with an Islamic positioning and a conventional one without a religious component can be compared. The suggested study might provide some interesting insights about the robustness of the relationship between website service quality, navigation experience, attitudes, and purchase intention. Last, the current study indicates that navigation experience has a strong influence on consumer attitudes and purchase intention despite different

samples and contexts of the study. However, the degree of influence of the factors on the transaction-related services and pre-purchase services might be contingent upon the study sample or settings. Therefore, it is recommended for the future researchers to test the model in different samples and context.

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The Relationship between Government Policies and Projects: A Strategic Management Perspective in Renewable Energy Industry

Fitria Astuti Firman[1]*, Ine Minara Ruky[2], Ratih Dyah Kusumastuti[1] and Harris Turino Kurniawan[1]

[1]Department of Management, Faculty of Economics & Business, Universitas Indonesia, Kota Depok, Jawa Barat 16424, Indonesia
[2]Department of Economics, Faculty of Economics & Business, Universitas Indonesia, Kota Depok, Jawa Barat 16424, Indonesia

ABSTRACT

This paper aims to identify the internal attributes of a firm that act as mediators by integrating research on Entrepreneurship, Strategic Management, and Project Management. Previous research shows that entrepreneurial orientation and capabilities are important attributes that mediate the relationship between institutional context and project level. Project in this paper refers to a strategic project — a bundle of activities that are intended to achieve a business goal of a firm. Thus, project performance has a broader definition in this case. Six hypotheses of the research model were analysed using Structural Equation Modelling (SEM). The specific context of the renewable energy power generation industry is chosen to confirm the research model. This industry is highly regulated; the government has a critical role in creating and shaping the market. In this industry, the return of capital is regulated, and there is only one buyer. The units of analysis are Independent Power Producers (IPPs), which are project-based companies dedicated to building, operating and maintaining power generation projects. Structural model analysis shows that only four hypotheses are supported by data. Findings indicate the relationship between government policies and project performance is mediated by two firm attributes: entrepreneurial orientation and network capability. Further study is needed for an indepth understanding of the relationship between project management capability and project performance.

Keywords: Entrepreneurial orientation, government policies, project performance, resource orchestration

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E-mail addresses:
hj.fitria@ui.ac.id/fitria.fahlefi@gmail.com (Fitria Astuti Firman)
ineminara@yahoo.com (Ine Minara Ruky)
ratih.dyah@ui.ac.id (Ratih Dyah Kusumastuti)
harristk@gmail.com (Harris Turino Kurniawan)
* Corresponding author

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INTRODUCTION

There is an urgency to investigate the relationship between government policies and projects from a theoretical perspective and as a current phenomenon in business. From the theoretical perspective, the relationship between government policies and projects still remains an unexplored (Pinto & Winch, 2016). It has been argued that strategic management theories can explain the relationship between government policies and projects. Literature on strategic management pointed to the influence of environment in corporations in providing competitive advantage (Lazzarini, 2013; Peng, Sun, Pinkham, & Chen, 2009). For example, government policies, as external institutions, are institutional capital that must be managed by firms as keys to maintaining sustainable competitive advantage (Bresser & Millonig, 2003; Oliver, 1997). This occurs because governments have the ability to create and shape the market for firms through their actions, laws, and regulations (Eckhardt & Shane, 2003; Razeghi, Shaffer, & Samuelsen, 2017).

A very clear example of the roles that government policies play can be seen in the electricity power generation industry. Some governments have deregulated their electricity sectors to invite the business sector to participate in power generation industries which were previously monopolised by state-owned companies. The power generation industry is the most highly regulated industry, and the government regulates the capital return of the company through their pricing regulations (Eckhardt & Shane, 2003). In this regard, the government policies not only encourage entrepreneurship, but they simultaneously strengthen and weaken the entrepreneurial behaviour of firms. Corporations or holdings can participate in the industry by forming specific-purpose companies, namely Independent Power Producers (IPPs). An IPP is a company that has a responsibility to build, maintain, and operate power generation projects and sign power purchase agreements with the electricity buyer (Perusahaan Listrik Negara [PLN], 2013). In Indonesia, the laws on energy and electricity give opportunity to business sectors to participate in renewable energy power generation industry. This industry is very unique, however, since it has only one buyer: the stated-owned company, PT PLN (Persero). The electricity selling price and mechanism are specifically regulated. Meanwhile, the government also expects the business sector will grow and contribute to both electricity provision and renewable energy target achievement.

The power plant project in this case is seen as a company's strategic effort to achieve their corporation and business aims. Literature on the strategic management school of thought in the project management field have shown that projects are a group of activities that are started from the initiation phase until the project is completed (Jugdev & Müller, 2005). Consequently, this paper defines project as a group of activities from the initiation phase of power plant development until the end of the power purchase agreement between the IPP and

PLN. The project is a strategic project focused on achieving business goals and winning over the competition (Shenhar, Poli, & Lechlar, 2001 as cited in Shenhar, Dvir, Ofer, & Maltz, 2001). Project performance, in this situation, should not be measured by referring to the schedule and budget aims only, but it should also consider, for example, the sustainability of the project, customer satisfaction, and the overall success of the business (Shenhar et al., 2001). It is then argued that overall business success is influenced not only by firm resources, but also external factors. In highly regulated industries it is argued that government policies are the most crucial external factors that can influence firm resources and, further, influence a project's performance.

In light of this, the paper empirically examines the relationship between government policies and projects through a strategic management perspective in the renewable energy-based power generation industry. Firm resources that are influenced by government policies are identified before examining how those resources influence the project performance to open the 'black box' on the relationship between the government and the project. In doing so, this research reviews three major research streams of management: Entrepreneurship, Strategic Management, and Project Management (Strategic Management School of Thought). In addition, a review of literature on energy policy is also conducted. Based on the review, this paper employs a strategic entrepreneurship framework as the basis of its research model development. The framework is called an "input-process-output framework" and suggests a comprehensive approach to how external factors can impact on firm performance (see Hitt, Ireland, Sirmon, & Trahms, 2011). The framework suggests environments and resources, both organizational and individual as inputs. The process is called the resource orchestration process, while creating value or gaining competitive advantage is defined as the output (Hitt et al., 2011). Further, this study uses five measurable variables that are expected to contribute to the research model as follows: government policies (GP), entrepreneurial orientation (EO), network capability (NC), project management capability (PMC), and project performance (PP). The relationships among those variables are discussed under the section on Methods.

The remainder of the paper is organised as follows. The following section describes the methods used in this study, including model development, sampling and its procedures, and measures. This is followed by presentation and discussion of results of the study. The conclusion summarises and highlights main findings of the paper.

METHODS

The Model Development

The model used in this study was developed based on literature review. A discussion with industry experts was also conducted during the model development. Referring to the strategic entrepreneurship framework, Government Policies (GP) are external

resources or institutional capital that act as the input. This research defines GP as laws and regulations that were enacted by the government of Indonesia to support the renewable energy-based power generation industry. Following the framework, Entrepreneurial Orientation (EO) is suggested as the input that influences the entrepreneurial nature of corporations. The EO is an internal resource of firms that shows the firm's orientation to take risks, act innovatively, or to be proactive in pursuing opportunities (Covin & Slevin, 1991; Miller, 1983). Under the resource orchestration process, the internal resources are translated into specific capabilities to achieve optimal performance (Sirmon, Hitt, Ireland, & Gilbert, 2011), which in the case of this study would require that EO be translated into specific capabilities of IPP to achieve the project performance. Literature and field findings indicate that there are two main capabilities that are owned by IPP as follows: Network Capability (NC) and Project Management Capability (PMC). The NC is a firm's capability to develop and maintain the network that supports its business and it is the ability to utilise that network to gain external resources (Parida, Patel, Wincent, & Kohtamäki, 2016; Walter, Auer, & Ritter, 2006). The PMC is defined as a firm's ability to utilise corporation resources at the project level and to translate corporation strategy into project strategy (Morris & Jamieson, 2004).

Finally, Project Performance (PP) is defined as output. PP describes not only the project success, but also reflects the business success of the IPP. Since the power plant project is seen as a long-term project, and its sustainability in producing electricity is important to the business life of the firm, a multidimensional measurement is used, as suggested in some studies (e.g., Joslin & Müller, 2015; Shenhar et al., 2001). The conceptual model is shown in Figure 1 below, and the relationships among variables are described in the following sub-sections.

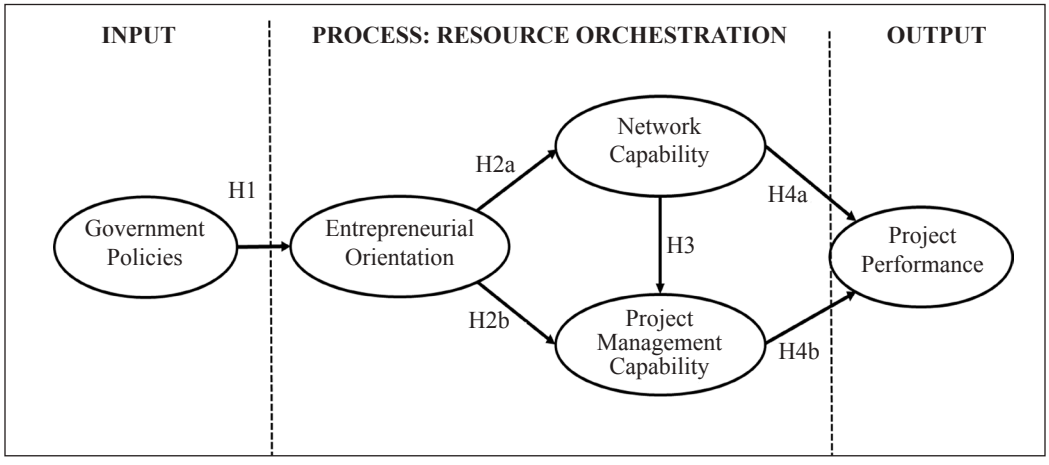

Figure 1. The conceptual model

The Relationship between Government Policies and Entrepreneurial Orientation

Studies have shown GP can stimulate entrepreneurial behaviour (e.g., Eckhardt & Shane, 2003; Wustenhagen & Menichetti, 2012). Such policies often provide opportunities and reduce risks and market uncertainties (Tracey & Phillips, 2011), while at the same time also have an unproductive and destructive influence on entrepreneurial behaviour (Minniti, 2008). Other empirical studies have indicated government policies encourage entrepreneurial activity (Krichevskiy & Synder, 2015). Shirokova and Sokolova (2013) showed that in an emerging market, GP as institutional capital has an impact on EO, and different policies have different impacts on the latter. It must be emphasised that not all policies have positive relationships with EO, and their impact also depends on the context. For example, the protection of contract law has a negative impact on EO, while a policy of protection of property rights has a positive impact on EO (Shirokova & Sokolova, 2013).

However, even though some policies may inhibit entrepreneurship, it is believed that the concern of the government in each regulation and policy enactment is aimed to support entrepreneurial behaviour. Public policies also influence renewable energy investment (Polzin, Migendt, Täube, & Flotow, 2015) and play an important role. For example, through policies, public authorities can intervene in a contract to reduce market risk in energy investment (D'Aertrycke, Ehrenmann, & Smeers, 2017), which will lead to an increase of EO. Thus, the following hypothesis is developed:

Hypothesis 1: Government policies will positively affect entrepreneurial orientation.

The Relationship between Entrepreneurial Orientation and Network Capability

The EO is argued to be a company's intangible resource that accumulates in the organisation (Lee, Lee, & Pennings, 2001). It also can be seen as the process of identifying and pursuing opportunities (Stevenson & Jarillo, 1990). According to resource orchestration, resources owned by a company should be translated into specific capabilities through the process of resource bundling and leveraging (Sirmon et al., 2011). In this regard, NC is argued to be one of the capabilities that has a relationship with the entrepreneurial process as the process of finding and gaining resources in a network (Mitrega, Forkmann, Ramos, & Henneberg, 2012; Walter et al., 2006). The study shows that companies with high EO tend to have high networking behaviour to seek the critical resources needed to exploit their opportunities (Ramachandran & Ramnarayan, 1993). Thus, it is argued that EO has a critical role in encouraging a company to find and gain resources. Thus, it can be stated:

Hypothesis 2a: Entrepreneurial orientation will positively affect network capability.

The Relationship between Entrepreneurial Orientation and Project Management Capability

It is also argued that EO has an impact on PMC. EO, as an intangible resource, must be translated into a specific capability at the implementation level if a firm wants to achieve high performance on their project investment. This capability is actually rarely discussed at the business level, while on the other hand, it is argued that this capability is connected to firm performance (Ethiraj, Kale, Krishnan, & Singh, 2005; Hadaya, Cassivi, & Chalabi, 2012), and the performance itself is connected to the business process (Jurisch & Palka, 2014). Thus, it can be stated:

Hypothesis 2b: Entrepreneurial orientation will positively affect project management capability.

The Relationship between Network Capability and Project Management Capability

This paper argues that there are two critical capabilities for companies that conduct strategic projects in emerging markets: NC and PMC. The NC is seen a business-level capability (Kale, Singh, & Perlmutter, 2000) developed to gain trust and access external resources (Uzzi, 1997; Uzzi & Lancaster, 2003). It is the ability to build, use and exploit the network to gain external resources (Walter et al., 2006). Often, implementation at the project level is delayed when resources are not owned by the company or are even temporarily absent. It is argued that by having NC, the time and cost spent in gaining external resources will decrease, since NC is able to reduce asymmetry information (Uzzi & Lancaster, 2003). Thus, it can be stated:

Hypothesis 3: Network capability will positively affect project management capability.

The Relationship between Network Capability and Project Performance

Previous literature has shown the relationship between NC and performance in various ways. In particular, the studies discussed that NC directly affects performance, for example buyer and supplier performances (Henseler, 2009), financial performance (Human & Naudé, 2009), and innovation performance (Zeng, Xie, & Tam, 2010). Another study showed that NC acts as a moderator in the relationship between EO and spin-off performance of universities (Walter et al., 2006). However, this study argues that referring to the resource orchestration framework, NC has an influence on PP. Thus, it can be stated:

Hypothesis 4a: Network capability will positively affect project performance.

The Relationship between Project Management Capability and Project Performance

In project management literature, PMC is emphasised as a critical factor in project success. It can be seen in some prior studies that this capability has a positive relationship with PP (e.g., Jugdev & Thomas, 2002; Jurisch & Palka, 2014).

This capability is also discussed in a strategic management paper that showed the significant contribution of PMC on PP (Ethiraj et al., 2005). Thus, it can be stated that:

Hypothesis 4b: Project management capability will positively affect project performance.

Sampling and Procedures

The six hypotheses that were identified above were empirically tested in the renewable energy-based electricity industry in Indonesia. Therefore, a questionnaire, as the research tool, was developed in the Indonesian language. The questionnaire development was based on the literature review. However, to eliminate problems on common method biases in the research, some steps were adopted. First, a pre-test was conducted. Before the pre-test, a face validity test was conducted through discussions with a few experts to ensure that the indicators in the questionnaire accurately reflected the industry situation. The pre-test was conducted twice to 10 and 20 respondents from IPPs. The results were used to produce simple questions and avoid ambiguity to ensure that the respondents would understand the questions (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). This process reduces common biases in research. The questionnaire was a self-administered type. In this study, the construct of corporations' EO was perceived by their IPP. An appropriate guideline was prepared.

The samples were taken from a population of renewable energy-based IPPs registered with the Ministry of Energy and Mineral Resources. For administrative purposes, IPPs usually only have one power generation project at a time. Currently, there are more than 300 registered IPPs (Ministry of Energy and Mineral Resources [MEMR], 2017). To fit within this sample, this study used probability sampling to ensure that each registered IPP had an equal chance to participate in the research. The questionnaires were distributed and collected via many channels, namely workshop events, a distribution through IPP associations, post mail delivery, e-mail, and face-to-face meetings since March 2017. By mid-July 2017, there were 90 useful questionnaires collected for this research. Most participants came from hydro-based IPPs (68.89%). Others came from bioenergy IPPs (8.89%), geothermal IPPs (13.33%), and wind & solar IPPs (remaining participants). Those IPPs have various capacities for power plants as follows: less than 1 MW (5.56%), 1–10 MW (63.33%), and more than 10 MW (36.675).

The respondents were directors (46.67%), project managers (17.78%), and the remaining were project coordinators. Most participants were male (95.56%). The education levels of the participants were senior high/diploma (6.67%), bachelor's degree (47.78%), and master's degree (45.56%). It should be noted that since IPPs are project-based companies that focus on power plant development and operation, directors are usually fully involved in both

business and project activities. Often, the directors of small-scale IPPs will go into the field and ensure that the relationships between the project team and other stakeholders are working as intended. They usually have a technical background that can also evaluate the renewable energy potential along with their consultants.

Measures

A six-point Likert scale was used in this research. An even number of options was used to avoid neutral opinions from respondents (such as "neither agree nor disagree") (Wakita, Ueshima, & Noguchi, 2012). The scale was used to measure each indicator as a measurable variable of five latent variables of the model. The GP were measured through three dimensions as follows: general design policy (GDP), financial support (FS), and non-financial support (NF). The dimensions were developed based on the concept of Jager and Rathmann (2008). The dimension development was then enriched by knowledge gained through unstructured interviews with experts. It is emphasised that a stable and long-term design of policies, price regulation on electricity, and permit procedures are some critical factors considered by inventors and entrepreneurs in developing renewable energy projects. All those factors can incur risks and increase the cost of a project, which can be managed by the GP (Abdmouleh, Alammari, & Gastli, 2015; Jager & Rathmann, 2008; Klessmann et al., 2013).

The EO variable was measured using the dimensions' proactiveness (PRO), risk-taking (RT), and innovativeness (INN) (Covin & Slevin, 1991; Hughes & Morgan, 2007), which are treated as second-order dimensions (Anderson, Kreiser, Kuratko, Hornsby, & Eshima, 2014). The NC dimensions were developed based on Walter et al. (2009). The NC dimensions included coordination skills (CS), relational skills (RS), partner knowledge (PK), and internal communication (IC). The RS dimension was connected to the concept of managerial ties (Peng & Luo, 2000) and social relation and network (Uzzi, 1997; Uzzi & Lancaster, 2003). The PMC dimension was measured based on the previous work of Erickson and Ranganathan (2006), and the dimensions were further developed based on other literature (i.e., Grant & Pennypacker, 2006; Jugdev & Thomas, 2002). The PMC dimensions included project planning and control capability (PPCC), project governance capability (PGC), and team capability (TC).

Finally, PP was measured using a multidimensional approach on a measurement of project success introduced by Shenhar et al. (2001). This multidimensional concept was also proposed in other studies (e.g., Joslin & Muller, 2015; Williams, 2016). The dimensions include project efficiency (PE), impact on consumer (IOC), business success (BS), and preparing the future (PF). The PF dimension was enriched by the concept of sustainability in project management (Silvius, Schipper, Planko, van den Brink, & Kohler, 2012), and it is also strengthened by input from experts interviewed.

RESULTS

The research model includes five variables or constructs. Each construct was measured by several dimensions, and each dimension consists of specific indicators. The description on each construct is presented in Table 1. In total, the model was measured using 107 indicators. There were 28 indicators to measure GP, 14 to measure EO, and 25 to measure NC. The remaining indicators were used to measure PMC and PP, with each dimension consisting of 17 and 23 indicators respectively. The model was measured using a multivariate statistical technique, Structural Equation Modeling (SEM), which gives the possibility to conduct a series of regressions for variables that act as both dependent and independent variables (Hair Jr., William, Babin, & Anderson, 2014). That technique combines the structural and measurement models into one statistical test (Garver & Mentzer, 1999). To simplify the research model, a second order measurement was deployed using the Latent Variable Score (LVS) technique. The LVS is a combined value of all measurement indicators of one dimension. It can also be a composite of all dimensions of one latent variable or construct (Wijanto, 2005). In this regard, all variables in the model are considered as second order variables, and all variables have several dimensions. Those dimensions consist of some measurable indicators. The LVS technique is a solution that solves the limitation with the number of samples. Bentler and Chou (1987) emphasised that the minimum sample size for SEM should be five times the observed/measurable variables. By using the LVS, the minimum sample size in this research iwas17 dimensions multiplied by 5, resulting in 85 samples.

The descriptive data analysis was conducted using IBM SPSS Statistics 21. Based on the data descriptive values, the results show that GP has the highest standard deviation (SD) and the lowest mean (mean = 3.38; SD = 0.84). It seems that the IPPs have a wider range of values on their perception of the GP compared with other constructs (see Table 1). Further, the multivariate analysis was conducted using the SEM LISREL 8.70. The measurement model analysis for each dimension was conducted and is presented in Table 1. The analysis was conducted by identifying values of Construct Reliability (CR) and Variance Extracted (VE). A dimension is defined as being good if that dimension has a CR value ≥ 0.70 and VE value ≥ 0.50 (Hair Jr. et al., 2014). The analysis shows that all dimensions are valid and reliable.

The model was measured, and the fit indices of the Goodness of Fit Index (GoFI) show that the measurement model overall has a good fit. The measurement model has a NCS value of 1.26 and RMSEA of 0.054. Other incremental fit indices are more than 90 (Hooper, Coughlan, & Mullen, 2008). The structural model analysis was then conducted by developing the LVS of each construct in the model, as can be seen in Figure 2. The model analysis was conducted by considering several fit indices of the GoFI. The model has a GoFI value of 0.82 and a p-value of 0.03, showing that the

model has a marginal fit (Wijanto, 2015, p. 71–72). However, other fit indices (IFI, RFI, NFI, NNFI, and CFI) have values of more than 90, the NCS value is less than 2, and the RMSEA value is 0.067. Those values show that the model has a good fit (Hooper et al., 2008). Overall, it can be concluded that the model has a good fit.

Further, structural data analysis shows that there are only four hypotheses supported by data, as can be seen in Figure 2. The solid line shows that there is a significant influence between the two constructs ($t \geq 1.96$), while the dashed lines show that the relationships between the two constructs are not significant ($t \leq 1.96$). The GP positively influences corporations' EO (Hypothesis 1). The EO is also shown to influence the NC of the IPP (Hypothesis 2a). However, this EO has no impact on PMC (Hypothesis 2b). Interestingly, NC has a significant impact on PMC (Hypothesis 3). Further, NC has a significant impact on PP (Hypothesis 4a). The study shows, surprisingly, that while IPPs are project-based companies, their PMC has no impact on the PP. It was found that corporations perceive government support in terms of general design of the policies (standardised factor loading, sfl = 0.89). Also, the financial support (sfl = 0.89) and non-financial support policies (sfl = 0.91) are very important in increasing the corporations' tendency to take risk (sfl = 0.84) and being proactive (sfl = 0.83) in doing business. The high EO of corporations strengthens the NC of IPPs,

Table 1
Summary of variables and their dimensions analysis

Variable	Dimension	Mean	Standard Deviation (SD)	Construct Reliability (CR)	Variance Extracted (VE)	Conclusion
GP (mean=3.38; SD=0.84) (independent variable)	- GDP (9 indicators) - FS (10 indicators) - NF (9 indicators)	3.56 3.29 3.30	1.08 0.95 0.84	0.93 0.89 0.88	0.60 0.50 0.50	Valid & Reliable
EO (mean=4.79; SD=0.40) (dependent variable)	- PRO (5 indicators) - RT (3 indicators) - INN (6 indicators)	5.07 4.47 4.85	0.48 0.54 0.55	0.81 0.85 0.83	0.50 0.65 0.50	Valid & Reliable
NC (mean=4.73; SD=0.51) (dependent variable)	- CS (6 indicators) - RS (9 indicators) - IC (5 indicators) - PK (5 indicators)	4.92 4.81 4.41 4.79	0.57 0.64 0.72 0.63	0.88 0.89 0.85 0.86	0.55 0.50 0.54 0.58	Valid & Reliable
PMC (mean=4.97; SD=0.53) (dependent variable)	- PPCC (6 indicators) - PGC (5 indicators) - TC (6 indicators)	4.87 5.03 5.01	0.62 0.56 0.61	0.91 0.81 0.89	0.63 0.50 0.59	Valid & Reliable
PP (mean=4.73; SD=0.51) (dependent variable)	- PE (4 indicators) - IOC (8 indicators) - BS (5 indicators) - PF (6 indicators)	4.26 5.17 4.47 5.03	0.99 0.50 0.87 0.44	0.96 0.91 0.90 0.87	0.85 0.55 0.64 0.54	Valid & Reliable

especially in coordination skill (sfl = 0.86) and internal communication (sfl = 0.87). Interestingly, IPPs perceive that they have a high project management capability, and project governance capability (sfl = 0.98) is the most important capability. In measuring performance, a measurement of the impact on consumers is considered the most crucial.

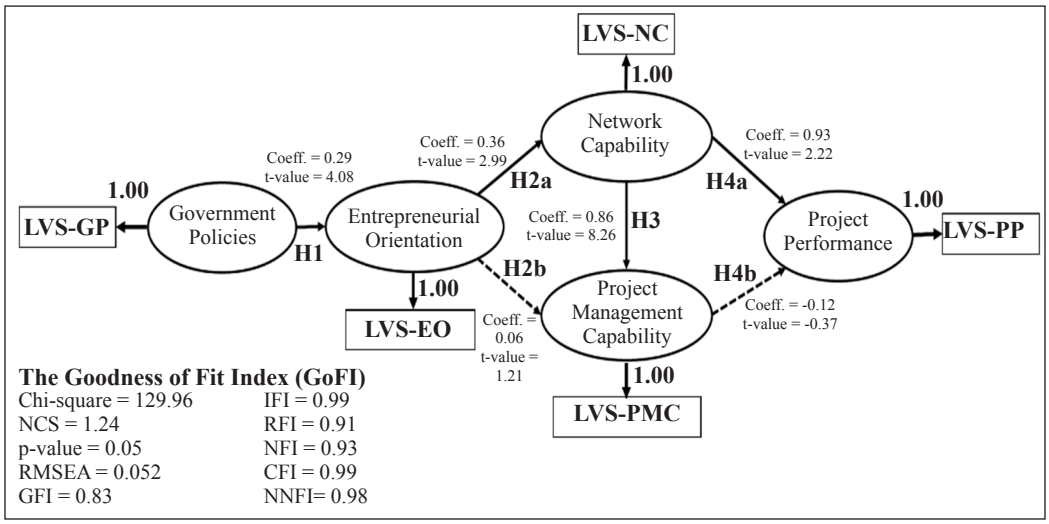

Figure 2. The structural model

DISCUSSION

This study opens the black box on the relationships between government policies and projects, and contributes theoretically to project management field. It also contributes to strengthening the concept of strategic entrepreneurship through empirical findings using a model that provides a comprehensive analysis at the level of corporation, business, and project. The study shows that in highly regulated industries, government policies have a critical role in project performance via a specific path, as follows: government policies – entrepreneurial orientation of the corporation – network capability of the IPP – project performance. Moreover, this study supports an entrepreneurial orientation antecedent in an emerging economy, as was suggested by Shirokova and Sokolova (2013), especially in highly regulated industries.

The research model shows that government policies and their dimensions are perceived by corporations as crucial factors in strengthening their EO. The general design of policy dimension measures whether the policies show a long commitment by the government to develop the renewable energy market, and whether the government can decrease the investment barriers on renewable energy projects. The policies on both financial and non-financial supports are also important in reducing the cost of projects and increasing the return of capital from project investments (Abdmouleh et al., 2015; Jager & Rathmann, 2008).

The study shows that current government policies show are based on its long-term commitment and supporting the renewable energy market while also increasing the corporations' trust in investing in renewable energy-based power generation projects. Those perceptions have encouraged and strengthened corporations to take risk and be proactive, as they consider the associated risks to be fair. They also encourage their employees to offer new ideas along with their risk calculation. Governmental support also encourages corporations to actively participate in the policy dialogue related to renewable energy development.

Further, corporations view innovativeness as a crucial factor in business. The renewable energy industry is a relatively 'younger' compared with the fossil industry. Consequently, corporations that enter into this business should be open to new methods in doing business, to invest in technological development, and to keep an open mind to changes within the industry and in technology, especially regarding policies. For example, when a corporation applies for a loan to finance a new power generation project, the financial institutions are usually unfamiliar with renewable energy and the processes that take place around it. Thus, corporations should be willing to modify their application efforts to convince the financial institution of the project's viability.

Such willingness to find new ways to acquire financing is important for IPPs, especially in building relationships with financial institutions to exploit their financial resources to boost the renewable energy industry. This is one of the reasons why entrepreneurial orientation can have a positive relationship with network capability. Data analysis shows that the coordination skills dimension of network capability is the most critical for IPPs, followed by the internal coordination in IPP organisation. Therefore, it is important for IPPs to understand the goal/aim of the corporation, to inform that goal to the internal IPP, and to identify and efficiently utilise its corporation resources. Those activities are important before IPP engages in networking activities to exploit their external resources. The study shows that relational ties with the government in the energy sector are as critical factors in the industry. Interestingly, these results support Peng and Luo's (2000), which showed the importance of managerial ties in emerging economies. Relational skills are critical, since IPP business is highly dependent on legality and permits, which are strictly regulated. Asymmetry information may lead to inefficiency in holding the permits, which can be reduced by relational ties. In addition, IPPs are concerned with competitors' strategies. Since the renewable energy absorption capacity of the regional electricity system is limited, IPPs should be able to identify their best strategies that will bring their projects to the forefront.

In relation to Hypothesis 2b, the structural model shows that EO has no impact on PMC. The hypothesis was based on the concept of resource orchestration that intangible resources should be translated into specific capabilities to

increase performance (Sirmon et al., 2011). The problem is to identify what kind of capability can be influenced by the corporations' entrepreneurial orientation in a real situation. This EO is then able to influence the NC, but not the PMC. This may occur because EO is highly related to exploring new business opportunities, while PMC is highly related to planning, controlling, and project governance activities that need resources, such as land, permits, and financing. Meanwhile, required resources are often not available at the project level. Some of the critical resources are available outside the IPP, and to exploit those resources, the IPP needs to have network capability. In this regard, EO cannot directly influence the PMC.

That argument is strengthened by the finding that NC significantly influences the PMC. The model shows that NC as a capability in business level (Kale et al., 2000) is a mediator between EO and PMC. Often project activities are delayed due to a lack of resources at the project level (Parker, Parsons, & Isharyanto, 2015), and this study shows that NC can strengthen the PMC through the skill of coordination with corporations, internal communication at the IPP, and the relational ties of the IPP to exploit internal resources. To the author's knowledge, there are very few studies on the antecedents of the PMC, and this study contributes to empirical findings on Resource-Based Theory related to the relationships of the two capabilities.

The study was aimed at showing that both NC and PMC have significant impacts on PP. However, it is only NC that showed a significant impact on the performance of a project. This is surprising since IPPs are project-based. The descriptive data shows that IPPs have good PMC. The capabilities of project planning and control, project governance, and project team management are perceived to be important factors in this type of business. In addition, the descriptive data shows that the dimensions of PP of IPPs have good mean values, so an analysis on performance was then conducted. The structural model analysis shows that the impact on consumers has become the highest consideration in this industry. This is natural, considering that in this industry, there is only one consumer: PT PLN (Persero)—a stated owned company. Under the regulation, PLN can give penalties or terminate the agreement if IPPs can't fulfil the requirements stated in the contract. This single-buyer scheme encourages IPPs to always maintain their relationship with PLN to ensure that the power purchase agreements are in line with their expectations and that those agreements can be well implemented. Referring to that analysis, it seems that in this case, NC, unlike PMC, has a role in performance.

Nevertheless, PMC logically contributes to performance. The requirements given by PLN can't be achieved if IPPs have poor PMC. In this regard, further analysis in the level of dimensions is important. Referring to the literature on project management over the last few decades, a complexity and uncertainty of the environment around the projects has caused difficulty in achieving

project efficiency (Thomas & Mengel, 2008). Project efficiency deals with schedule and budget aims. The IPP projects deal with external resources related to community issues. For example, the most critical problems occur with land and permits. In these circumstances, accurate planning and budget control would be impossible, and changing plans will decrease the overall PP (Dvir & Lechler, 2004).

Furthermore, descriptive data shows that, among other dimensions, project efficiency has the lowest mean values. The value shows that, on average, IPPs slightly agree that the project efficiency can and or will be achieved. In this situation, project efficiency dimension can't affect performance. However, it might be that the other dimensions of PMC affect the PP. Most IPPs experience a slow starting time, as the data shows that the period of time between the initiation stages until construction are mostly more than two years. That situation arises when the IPPs can't optimally utilise their PMC due to project uncertainties and complexity related to community issues, policy risks, and the natural risks.

CONCLUSION

Based on responses from 90 participants, this paper showed that government policies play an important role in the success of the project through entrepreneurial orientation and networking capability. However, the study is unable to empirically explain the relationship between project management capability and project performance. Further study is required analyse the relationship between those two constructs. A qualitative approach may be required to see whether measurement or project efficiency is needed in all phases of the project and whether corporations and IPPs are on the same page on project performance measurement. Further, more respondents may be needed in this regard. Due to the time limitation, this study only involved 90 IPPs.

In addition, the study has a limitation in the type of participants involved in measuring project performance. Since the performance can be perceived differently by various stakeholders involved in the project, future study is suggested to measure other stakeholders' perception of project performance. However, by using a multi-dimensional analysis on the performance, it is expected that the bias of participants' perceptions of their project/firm performance can be avoided. Another limitation of this study is related to the ability of corporations to provide resources for the IPP, which was not included in the research model. Further study is also needed to see whether the governments' policies can influence the strategy of corporations in managing their resources for project purposes.

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Perceived Justice and Perceived Loss Influence toward Customer Satisfaction in Service Recovery: The Impact on Trust and Switching Intention

Sitti Halima[1] and Gita Gayatri[2]*

[1]*Universitas Terbuka Gorontalo, Gorontalo 96138, Indonesia*
[2]*Management Department, Faculty of Economics and Business, Universitas Indonesia, Depok, 16424, Indonesia*

ABSTRACT

This study is an extension of earlier research on the effect of perceived justice and perceived loss on customer satisfaction during service recovery after service failure. Variables that are likely to impact customer behaviour in the future (trust and (non) intention to switch), once a customer is satisfied with the remedy are identified. Data was obtained from 242 respondents who had experienced service failure, from among customers of a prepaid card of the cellular company, PT.X. The approach used are convenience sampling and snowball sampling. Quantitative data analysis was performed using Structural Equation Modeling (SEM) was and results showed that all variables had a positive effect; the coefficient of determination was shown in the distributive justice, meaning that distributive justice was the biggest variable with a positive and significant effect compared with other variables in this study. Although the 'perceived loss' variable had a positive value, its weightage was lesser than other variables. The SEM test results showed that the combined variables in this research, distributive justice, procedural justice, interactional justice, and the perceived loss, have a positive and significant impact on customer satisfaction in service recovery. The variables also have an impact on trust and switching intention. Therefore, in order to increase trust and reduce switching intention, it is important to consider the strongest variables that influence customer satisfaction.

Keywords: Perceived loss, perceived justice, satisfaction, service recovery, switching intention, trust

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E-mail addresses:
sittihalima09@hotmail.com (Sitti Halima)
gita.gayatri@ui.ac.id/gitagayatri@gmail.com (Gita Gayatri)
* Corresponding author

INTRODUCTION

Service is an act, process, or performance that is provided or produced by an entity for another (Zeithaml, Mary, & Dwayne, 2009). Lovelock and Wirtz (2016) emphasise the new perspective on services definition as

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"a benefit without ownership". Service is divided into two: a service as a core of the offering, and a service that complements the other goods being sold. The first form is termed as a core product element and the second one is a supplementary product element (Lovelock & Wirtz, 2016). Classical theories on services define a service as different from goods based on its four main characteristics: intangible, perishable, inseparable, and heterogeneous (Zeithaml et al., 2009). These characteristics make services difficult to evaluate (Lovelock & Wirtz, 2016), and create challenges for marketing managers to develop superior quality offerings acceptable to customers. Customers have two sets of expectations in services: the desired services and the adequate services, with a zone of tolerance in between the two (Zeithaml et al., 2009). Once the services experienced do not meet expectation, the customers will be dissatisfied. On the other hand, if the service exceeds the expectation of the customers, the customers will feel satisfied or even happy (Lovelock & Wirtz, 2016). Customer satisfaction is an important outcome (Kau & Loh, 2006), and is a result of the marketing efforts of a company. Conceptually, a satisfied customer has a bigger possibility to become a loyal customer and refer his/her positive experience to other people through various means, including word-of-mouth communication (Kotler & Armstrong, 2016). Hence, customer satisfaction is a good predictor of consumer behaviour. Customer satisfaction occurs when a company can fulfil customers' needs by providing superior quality of goods and/or services (Llusar, Zornoza, & Tena, 2001).

However, when expectation does not match performance, service failure is apparent (Shapiro, Nieman, & Gonder, 2006). Even excellent service providers may find it hard to avoid possibilities of service failure within the service delivery process (del Rio-Lanza, Vazquez, & Diaz, 2009; Huang & Lin, 2011; Nikbin, Ishak, Malliga, & Muhammad, 2010). Service failure might occur due to several reasons, for instance, poor or inefficient service performance, inappropriate behaviour or attitude during the service transaction, or other unwanted actions from the service providers (Bitner, Booms, & Tetreault, 1990). The service failure might hurt a company's potential customers, affect customer satisfaction and loyalty (Schoefer & Ennew, 2005), or trigger customers to switch to other providers (Bhandari, Tsarenko, & Polonsky, 2007; Neira, Rodolfo, & Victor, 2009). All these, in turn, will affect the source of income for the company (Sabharwal, Harmeen, & Harsandaldeep, 2010). Therefore, it is important for a company to understand the root cause of their service failure, to respond and conduct the right recovery action.

Post failure recovery is essential and should be planned properly to overcome negative effect of service failure. Not all customers experiencing service failure would convey their experience to the company through complaints (Sabharwal et al., 2010), and they might still use their service (Kim, Kim, & Kim, 2009). However, if any other company offers

a better replacement or substitute with minimum switching costs, they may silently switch to other providers (Zeithaml et al., 2009). A proper service recovery plan should include perceived fairness from the customers' point of view, commissioning the recovery at the earliest and as correctly as possible (Sabharwal et al., 2010). Such service recovery action is important, not only to satisfy the affected customers, but also to strengthen the relationship between the company and their customers (Blodgett, Hill, & Tax, 1997; Smith, Bolton, & Wagner, 1999).

Based on empirical evidence, if a service failure occurs, the company that triggers service recovery by applying "perceived justice, namely distributive justice, procedural justice, and interactional justice" has greater likelihood to increase their post-recovery customer satisfaction (Nikbin et al., 2010; Sabharwal, et al., 2010; Smith, Bolton, & Wagner, 1999). Moreover, customers who experience severe service failure (perceived loss), but perceived better service recovery, would increase their rating of satisfaction compared with that of a minor service failure scenario (Sabharwal et al., 2010; Weun, Beatty, & Jones, 2004). This is termed as a "service recovery paradox" (Zeithaml et al., 2009), and it is expected that a satisfied customer (post-service recovery) will create a loyal customer (Astuti & Dharmmesta, 2011).

Based on the above, this research tests the presence of the service recovery process on the specific malpractice of "stolen (phone) credit" through the content providers programme, for instance, Ring Back Tone (RBT), Quiz, Lifestyle Information, or Gaming, through USSD Code/SMS transactions with telephone credit as a currency. Although at times its transaction involved the third-party content providers, this cellular service provider "X" was sued by its customers for inflicting a hefty financial loss of up to four trillion IDR (US$52 million). Considering the long-term effect of the failure, this "X" company has initiated several service recovery programmes to compensate the loss of its customers. This study examines the effect of perceived justice and perceived loss on the post-service failure (service recovery) satisfaction of the telecommunication company "X" in Indonesia (specifically on the "stolen credit" case of the prepaid phone connection), as well as its impact on customers' trust and (less) intention to switch to other telecommunication providers.

METHODS

Model and Hypotheses Development

Service recovery refers to a specific action to ensure the customer retains services within a reasonable level when a problem occurs, disturbing normal services (Lovelock & Wirtz, 2016). When service providers launch their recovery procedure, they must think whether the recovery is perceived as fair by the customer who expects the company to be just to them (Adams, 1963; Nikbin et al., 2010). A good service recovery plan should be able not only to detect and solve the problem, but also prevent

dissatisfaction and encourage the customers to be positive. Wirtz and Matilla (2004) found that the outcome of the service recovery (compensation, time spent to solve the problem, or asking to apologise) contributes to collective effects of post-service failure satisfaction (Nikbin et al., 2010, p. 49), or switches the dissatisfaction into satisfaction (Zemke, 1993). Justice theory approach is frequently used in such service recovery management.

A justice theory states that customers compare the treatment they receive from the service providers with that of other customers and evaluate whether the treatment they received was fair or unfair (Nikbin et al., 2010). Some researchers have explored the perceived justice from the customer point of view, investigating the relationship between perceived justice and service recovery effectiveness (Blodgett et al., 1997; Goodwin & Ross, 1992; Smith et al., 1999; Tax & Stephen, 1998). There are three points of view on perceived justice. The first view is distributive justice, which refers to the customer's perception on fair/equal allocation of resources, including refund, exchange, gift, coupons, etc., to compensate for the service failure (Blodgettet al., 1997; Homburg & Fürst, 2007; Wang, 2008). The second view is procedural justice, which refers to "customer perception on company's policy, procedure, and availability of the mechanism and tools that are able to support the process of service recovery; it includes flexibility, responsiveness, and efficiency of the recovery procedure" (Blodgett et al., 1997; Maxham III & Netemeyer, 2002; Wang, 2008). The third view is an interactional justice, which refers to perception of justice on the attitude and behaviour of staff when conducting the service recovery process, including interpersonal actions of staff (empathy, honesty, giving solutions, and communication style) while handling customer complaint (Cropanzano, Bowen, & Gilliland, 2007; Nikbin et al., 2010).

Other important aspects the service provider should consider when planning service recovery is the perceived loss from the customer's point of view. The perceived loss is how customers feel about the severity of the service failure in relation to the cost that they must bear (Bolton, 1998). This perception will lead to dissatisfaction (Nikbin et al., 2010), and will influence their behaviour toward the service provider in the future (Bhandari et al., 2007; Jones, Michael, Valerie, Becherer, & Halstead, 2003; Maxham III & Netemeyer, 2002; Wang, 2008). However, Shabarwal et al. (2010) found that when customers perceive the severity of the service failure (perceived loss) to be high, they are more likely to lodge a complaint. Paradoxically, the more severe the service failure is, the bigger the opportunity for a deeper impact on post-service recovery satisfaction, provided a successful service recovery measure has occurred. In other words, the more severe the service failure is, or the more the customer perceived the loss they would experience, the more significant the influence of a successful service recovery is on the customers' post-service recovery

satisfaction. When the company has a successful service recovery, as expected by the customer, a higher perceived loss on the service failure will lead to more satisfaction compared with lower perceived loss by the customers (Sabharwal et al., 2010; Weun et al., 2004)

Both perceived justice and perceived loss will influence customer satisfaction post-service failure, or, the customer from being dissatisfied (from the failure) will become satisfied (after recovery) (Nikbin et al., 2010; Wirtz & Matilla, 2004), or vice versa. Customer satisfaction is the condition when customer expectation equals or is higher than their perception of the service performance (Fitzsimmons, 2001). In case of service failure, customer satisfaction is evaluated by comparing their expectation prior to service recovery and their perception on the actual service recovery (Karande, Vincent, & Leona, 2007).

Customer satisfaction of service recovery is proposed as a mediator between pre-choice conditions and post-recovery purchase behaviour, such as trust and switching intentions of the customers. Trust is defined as a confident positive expectation with another party's motive containing risks (Boon & Holmes, 1991). Trust from the customer is crucial for any service provider, as it represents the willingness of the former to choose the services offered (Astuti & Dharmmesta, 2011). Based on previous empirical research, trust is important to help a company develop a good relationship with its customer (Crosby, Evans, & Cowles 1990; Dwyer, Schurr, & Oh, 1987; Morgan & Hunt, 1994). Trust is built when customers believe in a company's reliability and integrity on performing well during transaction (Morgan & Hunt, 1994), and through repeated satisfactions from previous transactions (Ganesan, 1994; Kau & Loh, 2006; Weun et al., 2004).

While trust is the function of repetitive satisfaction, dissatisfaction of the service might trigger customers to switch to other service provider (Burnham et al., 2003). Customer intention to switch to the other provider will be reduced if the customer feels satisfied with the existing service delivery or service recovery (Burnham et al., 2003; Jones et al., 2003).

On the contrary, if the customers feel that the company has failed to recover their failure, they may switch to other providers, or, even worse, spread negative word-of-mouth to other customers (Broderick et al., 2000; Lewis & Spyrakopoulos, 2001). However, if the post-failure service recovery is successful in creating customer satisfaction, it is expected that the customer's switching intention will be negatively influenced with added weightage. In other words, the customer will not have any intention to switch to the other service provider and would rather be willing to stay with the existing service provider (Bhandari et al., 2007; Jones et al., 2003).

The proposed model is developed to examine the effect of customers' perception on perceived justice and perceived loss on the post-service failure recovery satisfaction, as well as to test whether the level of customer satisfaction on the service recovery will

make them more willing to trust the service providers and whether they will switch. This model will be used to derive theoretical justification on the relationship between each variable. First, the three perceived justices (distributive, procedural, and interactional justice), along with perceived loss, become the antecedent of customer post-recovery satisfaction. Second, the satisfaction becomes the mediator between the previously mentioned antecedents with the post-recovery behaviour, Trust and (non) Switching Intention, as outcomes.

Distributive justice on service recovery, such as reimbursement by cash or coupon, discount, freebies, and apologising (Hoffman & Kelley, 2000; Tax et al., 1998) has a significant role in building customer satisfaction post-service recovery. It will influence customer satisfaction, since it assumes that by choosing to accept the compensation, the customers accept (and forgive) the failure of service (Goodwin & Ross, 1992; McCollough, Berry, & Yadav, 2000; Smith et al., 1999; Tax et al., 1998). Therefore, the first hypothesis is developed:

H1: Distributive Justice will positively influence post-recovery satisfaction

Procedural justice is a justice immediately conducted after the service failure and upon reports (lodging complaint) by the customer (Goodwin & Ross, 1992; Tax et al., 1998). The procedural justice is intended to solve the conflict and embrace the productive relationship between the service provider and its customers (Tax et al., 1998). Some research has found that justice is not only seen in the final result, but is also contained in the process of getting the result, including the ease of lodging a complaint (Goodwin & Ross, 1992; Smith et al., 1999). Researchers have found that procedural justice influences customer satisfaction post-service recovery (Hocutt et al., 2006; Smith et al., 1999; Tax et al., 1998). Therefore, the second hypothesis is:

H2: Procedural Justice will positively influence customer post-recovery satisfaction

Interactional justice refers to how fairly the employees treat and personally interact with customers, post-service failure (Maxham III & Netemeyer, 2002). It involves politeness, sincerity, honesty, empathy, and the way employees handle the customers' complaints (Tax et al., 1998). Interactional justice is also proven to influence the satisfaction post-service recovery (McCollough et al., 2000; Tax et al., 1998). Therefore, the third hypothesis is:

H3: Interactional Justice will positively influence customer post-recovery satisfaction

The severity of the service failure can be gauged by measuring the spectrum on how big or small the service failure impacts the customer (Hess Jr, Ganesan, & Klein, 2003). In the case of severe service failure, the importance of good service recovery is important (McDougall & Levesque, 2000), and, if successful, will increase satisfaction (Smith et al., 1999). The perceived loss

involves a bill, service, equipment, or miscellaneous factors that directly influence customer satisfaction and is also dependent on situational and individual factors (Hoffman & Kelley, 2000). It is assumed that a bigger service failure coupled with a better service recovery will have a combined multiplying effect on the influence of post-service recovery satisfaction (McDougall & Levesque, 2000; Smith et al., 1999). Therefore, the fourth hypothesis is:

H4: (bigger) Perceived Loss will positively influence customer post-recovery satisfaction

Research has shown that there is a positive relationship between service recovery and customer satisfaction. The satisfaction in the recovery action might lead to the development of trust toward the service provider (Astuti & Dharmamesta, 2011; Kau & Lo, 2006). Trust may develop if the company compensates the service failure in a way that makes the customer feel not only satisfied but also pampered, reinvigorating their confidence in the service provider (Maxham III & Netemeyer, 2002). On the other hand, if a customer feels that service recovery fails to compensate their loss, they may choose to switch to other providers. In cases when the post failure service recovery results in customer satisfaction, the customer will not have any intention to switch to the other service provider/no switching intention (Bhandari et al., 2007; Johnston, 2004; Jones et al., 2003). Therefore, the fifth and sixth hypotheses are:

H5: Customer satisfaction post-service recovery will positively influence the customer's trust in the service provider

H6: Customer satisfaction post-service recovery will positively influence the customer's non-switching intention

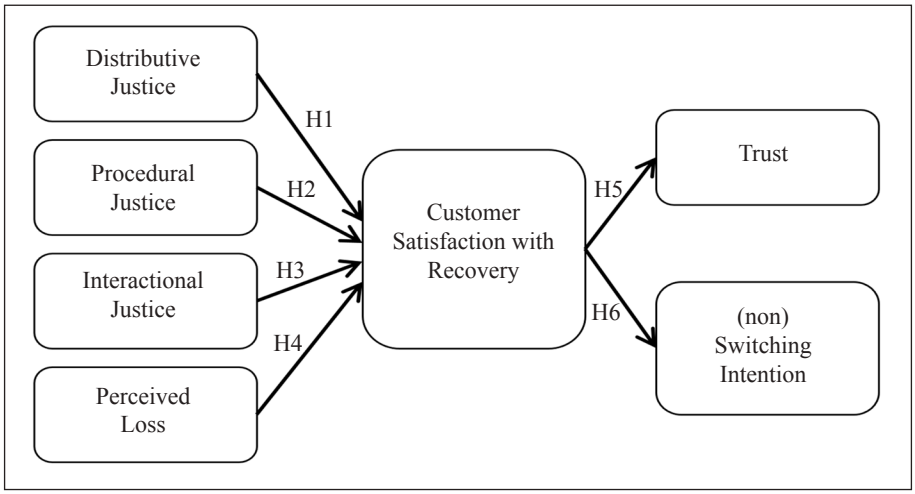

Figure 1. Proposed model

METHODS

A quantitative research method of 'survey with questionnaire' is used in this study. A pilot test using 30 respondents is conducted before the main survey (Malhotra, Birks & Wills, 2012) to test the questionnaire's potential problem. After the pilot test and questionnaire's face validity is done, the data will be collected from the larger sample. The respondents in this research are the users of the cell phone network PT.X in the Depok area, aged 20-50 years, who have experienced service failure of their cellular company (credit loss/stealing) and have received service recovery from their cellular service provider (Hidayat, 2011). The potential respondents were approached using a convenience sampling or snowball sampling (Malhotra, 2009). A total of 242 respondents participated; the data collected has been analysed using Structural Equation Modeling (SEM) with the LISREL 8.8 statistical tool.

Questionnaire items were derived from a variety of sources to ensure sufficient coverage of the variable definitions, and to ascertain the appropriateness within the context of the study. To measure Distributional Justice, five items were used from Blodgett et al. (1997), Wang (2008), and Sabharwal et al. (2010). For Procedural Justice, a total five items were taken from Blodgett et al. (1997), Sabharwal et al. (2010), Maxham III and Netemeyer (2002), and Karatepe (2006). For Interactional Justice, five more items were taken from Cropanzano, David and Stephen (2007), Nikbin et al. (2010), and Sabharwal et al. (2010). Another set of five items for measuring perceived loss were taken from Hess Jr. et al. (2008), Weun et al. (2004), and Sabharwal et al. (2010). Ten items for measuring customer satisfaction (post-recovery) were taken from Karande et al. (2007), Kim et al. (2009), Neira et al. (2009), Nikbin et al. (2010), and Sabharwal et al. (2010). Five items to measure trust were taken from Astuti and Dharmamesta (2011), Kau and Loh (2006), and Weun et al. (2004). Finally, another set of five items to measure the switching intentions were taken from Bhandari et al. (2007), Broderick, Mack, Mueller and Crotts (2000), Burnham (2003), Jones et al. (2003), and Lewis and Spyrakopoulos (2001).

RESULTS

Demographic Respondent

Approximately 57% of the respondents are male. More than 47% of them were between 20-30 years old. Almost 74% of the respondents are students, with 55% of the total respondents finishing senior high school, and 26% finishing an undergraduate program. More than 50% of the respondents spent Rp20k-50k (approximately USD 2-5) and 36% of the respondents spent Rp50k-100k (approximately USD 5-10) monthly on cellular credits. 61.57% of the respondents used their credits to make phone calls, while 28.93% used their credits for text/picture messaging, and 4.13% used their credits for content quizzes.

Reliability and Validity

A pilot test was conducted to test the face validity of the questionnaire and the reliability and validity of the items used in the questionnaire. A total of 30 respondents participated in this test. Analysis of validity was calculated using product moment (Sugiyono, 2005) with excel. The results showed that all the items are valid, with the r-calculation ranging from 0.61-0.80, far above the r-table, which is 0.36. For reliability analysis, a *Cronbach's Alpha* test shows that all construct valued ≥ 0.70 (Ghozali, 2008) (ranged from 0.71-0.89), hence all constructs used in this research are reliable.

Hypotheses Analysiss

The goodness of fit of the models is as follows: Chi-Square is P:0.138 (or > 0.05), df =728, RSMEA = 0.072, showing a good fit, while the score for CFI and GFI are> 0.9, a good fit. Hence, all the absolute fit measurements and the data collected fit the model proposed.

In testing the hypotheses, t-test was used to see the relationship between latent variables within the model. The summary of the hypotheses testing is presented in Table 1.

Table 1
Hypotheses result

Hypotheses		γ/β	t-value	Remark
H1	Distributive Justice → Customer Satisfaction post *service recovery*.	0.53	5.82**	Supported
H2	Procedural Justice → Satisfaction post *service recovery*.	0.46	2.71**	Supported
H3	Interactional Justice → Satisfaction post service *recovery*.	0.41	2.05**	Supported
H4	*perceived loss*→ Satisfaction post *service recovery*	0.11	2.20**	Supported
H5	Satisfaction post *service recovery*→ trust	0.69	3.63**	Supported
H6	Satisfaction post *service recovery*→*switching intention*	0.16	2.02**	Supported

Source: Data analysis

DISCUSSION

The study has shown that first, the three dimensions of perceived justice, which are distributive justice, procedural justice, and interactional justice, positively influence customer satisfaction post-service recovery. This finding is in line with previous studies, which indicated the possible relationship when service failure occurs, and the company conducts the service recovery with perceived justice. The "perceived justice that positively influences the customer

satisfaction post-service recovery" (Nikbin et al., 2010; Sabharwal et al., 2010; Smith et al., 1999) is also supported.

Secondly, Sabharwal et al. (2010) stated that the severity of the service failure influences customer satisfaction post-service recovery. The severity of service failure in this research is represented by the perceived loss, or the level of loss that the customer should bear due to the service failure (Bolton, 1998; Hess Jr. et al., 2003). In this research, the severity of service failure is perceived as high, since many of the customers lodged complaints against the stolen credit from the content quiz/ programme.

Third, switching intention and trust are the output influenced by customer satisfaction; therefore, if customers felt satisfied with the service recovery they received, their trust toward the service provider increased (Astuti & Dharmamesta, 2011; Kau & Loh, 2006; Weun et al., 2004), and their switching intention will be eliminated (Bhandari et al., 2007; Jones et al., 2003).

In sum, it is concluded that in the presence of good service recovery, the bigger perceived loss and perceived justice proactively influence the post-recovery satisfaction, leading to greater trust in the company and reduces intention to switch to another telecommunication provider. This phenomenon is evident in the case of PT.X.

In general, this research can confirm all paths proposed in the model, and answers the objective of the study, that perceived justice and perceived loss, as antecedents, influence trust and intention to switch through customer satisfaction post-service recovery. Regarding the antecedents, among the three dimensions of perceived justice, distributive justice has the highest score at 0.53, followed by procedural justice at 0.46, and interactional justice at 0.41. On the other hand, perceived loss, although proactively influences satisfaction, scored 0.11.

For dependent variables, satisfaction toward service recovery influences greater trust (0.69), compared with their non-intention to switch (0.16). In sum, a good service recovery that includes perceived justice and reduces the perceived loss of the customer is indicative of the company's willingness to maintain a good relationship and boost customer trust in company "X". It also reduces the customer's intention to seek other service alternatives/competitors. That implies that the service recovery strategy that company "X" has taken, such as distributive justice, customer education, blocking the content service that creates the customer loss, reimbursing the credit of the customers, etc., offers a warranty to the customer to eliminate the future service failure. In procedural justice, the effectiveness of time spent to recover the failure, responsiveness, readiness, transparency, and the flexibility of the procedure taken during service recovery will influence customer satisfaction. The politeness, kindness, and friendly behaviour of the employee gives comfort and offers a solution during the complaint handling phase, making the customers feel more satisfied. Moreover, if the company can protect customer interests, by minimising

the possibility of fraudulent practices that steal customer phone credits, or by minimising the interruption of the service, such protection might also influence customer satisfaction and increase trust in the company, thus eliminating the possibility of switching to another service provider.

This research leads to some theoretical and managerial implications. First, the results empirically support the previous literature that the perception of justice does influence customer satisfaction, including the post-recovery satisfaction (Martínez-Tur, Peiro, Ramos, & Moliner, 2006). The results are support those of other studies that emphasise the dominant influence of distributional justice on customer satisfaction (Adams, 1963; Clemmer & Schneider, 1996; Martínez-Tur et al., 2006), compared with procedural and interactional justice. This can be explained by the equity theory that underlines the application of the distributive justice, where the customer will tend to maximise the gain and minimise the loss within a service transaction (Martínez-Tur et al., 2006). Another contribution of this research is the adaptation of perceived loss as a proxy to the severity of service failure by Sabharwal et al. (2010) and Weun et al. (2010). Finally, the satisfaction of the service recovery procedure has a predominant role in customer post-purchase behaviour, including trust and loyalty, and indicates support of the service recovery paradox theory (Astuti & Dharmmesta, 2011; Zeithaml et al., 2009). Managerial implications of this research are that cellular phone network providers must maintain a good service provision in their core business. In addition, they must be ready for service recovery, including this specific case of problems or persistent failures arising out of third party (content provider) involvement. In such failures, the managers should carefully plan and take quick actions to address the service recovery, since their own customers are ultimately harmed. Regarding the most influential variable in this research, distributive justice, cellular network providers should design relevant recovery processes (when needed), as perceived appropriate by their customers.

LIMITATION AND CONCLUSION

It should be noted that this research is limited to the customers of company "X" in the Depok area only. Hence, the respondents' demographic characteristics, including education level and age, are not proportional between groups. The pre-conditionality of the respondents' specific characteristics (experiencing the specific failure and service recovery) makes the sample recruitment challenging. Further research should target broader groups. The present research investigated the behavioural outcomes through two variables only: 'trust' and 'non-intention to switch'. Further research can investigate other post-purchase behavioural variables, such as customer willingness to pay higher rates, repurchase intention, or customer propensity to spread positive word-of-mouth reviews. This information will help companies fully understand the outcome of post-recovery satisfaction on customer post-purchase behaviours, and to

enrich the understanding of the customer service experience (Maxham, 2001). Finally, this research does not specify the type of recovery conducted by the service company. Future research might consider inserting it, to enhance the managerial implication of the research for the service provider.

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The Financial Market Stability: Southeast Asia, BRIC and Latin America

Isye Nur Isyroh and Zaafri Ananto Husodo*

Department of Management, Faculty of Economics and Business, Universitas Indonesia, Depok 16424, West Java, Indonesia

ABSTRACT

This research aims to first, determine the correlation between the stock market and financial stability. Second, to determine the correlation between stock market and liquidity availability. Both are conducted in the implementation period of quantitative easing of US in 2008. The research is conducted in eight countries: United States, Indonesia, Malaysia, Thailand, Brazil, Russia, India, and Latin America. The national composite index for each country was used to capture the condition of stock market as a dependent variable. The VIX was used as a proxy o financial market stability in the US, and TED spread as a proxy for liquidity availability. Sample will be divided into three different periods based on the implementation of QE1, QE2, and QE3. The DCC model was employed in this research to capture the dynamic movement between variables studied. Results show there are stronger significant influence on VIX correlation with stock indexes in US, Indonesia, Thailand, Brazil, India, and Latin America rather than the correlation on TED spreads, which is only found significant in Russia in the QE1 period. This indicates financial stability affecting investor choice of investment.

Keywords: Crisis, dynamic, QE, TED spread, VIX

INTRODUCTION

Financial markets cannot avoid the impact of a crisis. A crisis can have a contagious impact on the markets. A crisis should be handled as soon as possible, which can be done by identifying the source of the crisis. As pointed out in previous studies, the decline in performance in one market may affect the decline in performance in others,

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E-mail addresses:
nurisye@yahoo.com (Isye Nur Isyroh)
z.husodo@gmail.com (Zaafri Ananto Husodo)
* Corresponding author

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hereinafter referred to as the contagion effect (King & Wadhwani, 1990). Financial stability is described in the literature as a condition where there is no evidence of increasing exposure to common shocks (Baur & Schulze, 2009). One of the biggest crises ever was the 2008 global financial crisis. The 2008 crisis began with the failure of the subprime mortgage lending in the United States. This failure subsequently led to the collapse of major banks in the United States, preceded by the fall of Lehman Brothers, a global financial services firm, on September 15, 2008.

The subprime mortgage crisis was handled by unconventional monetary policy implementation carried out in three different periods. Unconventional monetary policy was then known as quantitative easing (QE) introduced by policy makers to encourage activity in the real economics sector. Increased activity in the real economic sector is expected to lessen the impact of the crisis. Previous research has pointed to the influence of QE in aspects of liquidity, portfolio rebalancing, and confidence channels in developing countries (Lim & Mohapatra, 2016).

Research has also found that investors view how to distribute their assets based on the risks in special circumstances. As an example, in the subprime mortgage crisis era, investors preferred to move their assets to those that were less risky, from stocks to bonds. Kenourgios, Naifar and Dimitriou (2016) found that *sukuk* and bonds can provide a cushion for investment at the beginning of a crisis. Investors see that in a crisis era, the volatility of stock return is higher. It is possible that an investor sees the crisis based on the fluctuating structure of stock returns. When the stock returns get more volatile, they move their stocks to bonds, which is less risky. In times of crisis, investors tend to choose to switch investment options from high-risk to lower-risk investment options; e.g. from stocks to bonds (Mustafa, Samsudin, Shahadan, & Yi, 2015). Based on this finding, it is hypothesised that financial market stability can be affected by stock return volatility and investing preference.

This research discusses the correlation between the national stock market in the three regions (Southeast Asia, BRIC, and US), with fundamental economic variables related to the subprime mortgage crisis and the implementation of QE. These three regions were chosen to see if there is a contagion or spill over effect. The fundamental variables used in this study are the VIX index that illustrates the stability of financial markets in the United States, and TED spreads that illustrate the availability of liquidity. The use of these two fundamental variables is in line with previous studies (Duca, Nicoletti, & Martinez, 2016; Kim, Kim, & Lee, 2015; Lim & Mohapatra, 2016).

LITERATURE REVIEW

Gilk and Rose (1999) found that currency crises tend to affect countries with geographical proximity. The crises referred to in the data are the crises of 1971, 1973, 1992, 1994, and 1997. Results from research

conducted in 161 countries indicate that strong trade links influence currency contagion in the five periods of the crisis, while economic factors are not closely related.

The 2008 crisis was triggered by the fall of Lehmann Brothers in 2008. One of the characteristics of the crisis is how quickly a crisis in one country spreads to the financial markets and to the world (Bianconi, Yoshino, & de Sousa, 2013). The subprime mortgage crisis in 2008 affected almost all the countries in the world, causing considerable economic turmoil. Many studies have suggested a significant positive correlation coefficients that increase after a crisis, which point to the contagion factor.

Besides, a crisis is also defined as a circumstance in which the global financial market is not in a stable condition. Financial stability in the literature is described as a condition where there is no evidence of increasing exposure to common shock (Baur & Schulze, 2009). The crisis itself channels through several proxies, depending on how the activities undertaken by one country affect the other, whether through trading or investment activities in the free market.

The crises do not always have the same characteristics, which is related to the origins of the crisis, such as currency crisis, sovereign debt crisis, crashes, corporate bankruptcies, and crises of confidence (Brière, Chapelle, & Szafarz, 2012). In addition, there is flight to quality and flight from quality, which is influenced by the source of current crisis.

In addition to the crisis of 2008, the crisis in Russia in 1998, as discussed by (Saleem, 2009), showed different crises will have different reach and scope for the emergence of contagion effects. Aizenman, Pinto and Sushko (2013) stated that the economy is broadly influenced by the financial cycle, where the financial sector has a strong influence on other sectors. Islam (2014) divided the contagion channel by virtue of the transmitters into first-degree markets and second-degree markets; the second-degree market is described as a country hit by the crisis in the first-degree market and found that the crisis in Asian countries stemmed from the US equity market.

Min and Hwang (2012) states that there is an increase in the contagion between the first phase of the crisis in the United States and the second phase of the crisis in the three OECD Countries (UK, Australia and Switzerland), but the next OECD country, Japan, is limited to correlation in the first phase. The method used is DCCX-MGARCH, which allows simultaneous estimation of DCC against its contagion channels (VIX index, TED spread). Morales and Bernadette (2014) states that the impact of a global economic crisis has different effects based on regional factor and spill over transmitted and disseminated by several key countries (Singapore to Asia, and UK to Europe). The study was conducted on 58 countries, divided by region.

Okubo, Kimura and Teshima (2014) discussed the impact of the global economic crisis of 2008 on Japan's trade as well as

the economic fragility of Asia during this period. It was found that the risks were shared between Asian countries leading to strong trade relations.

METHODS

Data

Data used in this study is daily data from national composite index obtained from Datastream. Countries examined in this study are shown in the following table:

Table 1
Countries by region

South East Asia	BRIC	US
Indonesia JCI	Brazil Bovespa	FTSE Latin America
Malaysia KLCI	Russia MICEX	US NYSE
Thailand SET	India NIFTY500	

Three different periods were examined in this study based on the time of implementation for QE 1, QE 2, and QE 3. Using daily data, the three periods are as follows:

- QE 1: 1 November 2008 – 1 April 2010
- QE 2: 1 October 2010 – 1 July 2011
- QE 3: 1 August 2012 – 1 January 2013

Dynamic Conditional Correlation (DCC) Model

The Dynamic Conditional Correlation (DCC) model is used here because unlike other multivariate econometrics model, the DCC has some restrictions which are useful for analysing the results. The DCC model has non-negative scalar matrix, so that the matrix output within the DCC equation comes out as a positive number. This model can also estimate the correlation coefficient. The correlation coefficient can be analysed to indicate the impact of the crisis. The DCC-GARCH model directly accounts for heteroscedasticity and has no volatility bias based on estimating the correlation coefficients of the standardised residuals (Chiang et al., 2007)

The DCC (Engle, 2002) model is estimated where the DCC-MGARCH model can be seen as a generalisation of the constant conditional correlation (CCC) estimation (Bollerslev, 1990), where the matrix of conditional covariance H_t is as follows:

$$H_t = D_t R_t D_t, \quad (1)$$

Where, D_t is diagonal matrix, $D_t \sqrt{diag\{H_t\}}$ and R_t is time-varying correlation matrix.

H_t formulation can be used as standardised parameter for return, $\varepsilon_t = D_t^{-1} e_t$

$$E_{t-1}\varepsilon_t \varepsilon'_t = D_t^{-1} H_t D_t^{-1} = R_t = [\rho_{i,j,t}] \quad (2)$$

Engle proposed the next mean-reverting conditional on GARCH (1,1) specification:

$$\rho_{i,j,t} = \frac{q_{i,j,t}}{\sqrt{q_{i,i,t} q_{j,j,t}}} \quad (3)$$

Where,

$$q_{i,j,t} = \bar{\rho}_{i,j}(1 - \alpha - \beta) + \alpha \varepsilon_{i,t-1} \varepsilon_{j,t-1} + \beta q_{i,j,t-1}$$

$\bar{\rho}_{i,j}$ is unconditional correlation between $\varepsilon_{i,t}$ and $\varepsilon_{j,t}$. Non-negative scalar α and

β assumed to fulfil the stationarity terms, $\alpha + \beta < 1$. In the form of matrix:

$$Q_t = \bar{Q}(1 - \alpha - \beta) + \alpha\varepsilon_{t-1}\varepsilon'_{t-1} + \beta Q_{t-1} \quad (4)$$

Where $\bar{Q}$ is unconditional correlation matrix from ε_t. R_t produced by:

$$R_t = (Q_t^*)^{-1/2} / Q_t (Q_t^*)^{-1/2} \quad (5)$$

Where Q_t^* = diag(Q_t)

Engle proposed two steps estimation from DCC model. When k=2, the function of log-likelihood is:

$$\begin{aligned}\mathcal{L} &= -\frac{1}{2}\sum_{t=1}^{T}(2\log(2\pi) + \log|H_t| \\ &\quad + e'_t H_t^{-1} e_t) \\ &= -\tfrac{1}{2}\textstyle\sum_{t=1}^{T}(2\log(2\pi) + \log|D_t R_t D_t| \\ &\quad + e'_t D_t^{-1} R_t^{-1} D_t^{-1} e_t) \\ &= -\tfrac{1}{2}\textstyle\sum_{t=1}^{T}(2\log(2\pi) + \log|D_t| \\ &\quad + \log|R_t| + e'_t R_t^{-1} e_t)\end{aligned} \quad (6)$$

Add and minus $e'_t D_t^{-1} D_t^{-1} e_t = \varepsilon'_t \varepsilon_t$, log-likelihood is rewritten as a sum of volatility component ($\mathcal{L}_v$) and correlation component ($\mathcal{L}_c$). θ shows a vector from parameter D_t and ϕ to be another parameter of R_t, then:

$$\mathcal{L}(\theta, \phi) = \mathcal{L}_v(\theta) + \mathcal{L}_c(\phi) \quad (7)$$

Where:

$$\begin{aligned}\mathcal{L}_v(\phi) &= -\frac{1}{2}\sum_{t=1}^{t}\sum_{i=1}^{2}\left(\log(2\pi)\right. \\ &\quad \left. + \log\left(h_{i,i,t}\right) + \frac{e_{i,t}^2}{h_{i,i,t}}\right) \\ \mathcal{L}_v(\phi) &= -\tfrac{1}{2}\textstyle\sum_{t=1}^{T}(\varepsilon'_t R_t^{-1}\varepsilon_t - \varepsilon'_t\varepsilon_t \\ &\quad + \log|R_t|)\end{aligned} \quad (8)$$

One can find the estimation for parameter θ by maximising $\mathcal{L}_v(\theta)$.

RESULTS AND DISCUSSION

The data stock was converted into a return form and has been stationary in the first order. The results using DCC, the correlation between stock data with VIX that describes the financial stability of the US stock market in the eight countries studied, can be seen in Table 3. Similarly, the correlation between TED spreads that describe the availability of liquidity in the period of QE 1 in the stock markets of the eight countries studied can be seen in Table 3.

In the QE1 study period, as can be seen in Table 3, it was found that TED spreads that showed the availability of liquidity were not significant in seven of the eight countries studied. The stock market affected by the availability of liquidity is found in

Table 2
Summary statistics – Returns

	RINDONESIA	RMALAYSIA	RTHAILAND	RBRAZIL
Mean	0.000409	0.000184	0.000299	5.32E-05
Median	0.000523	8.72E-05	4.94E-05	0
Maximum	0.076231	0.042587	0.075487	0.136794
Minimum	-0.10954	-0.099785	-0.110902	-0.120961
Std. Dev.	0.013994	0.007774	0.012736	0.017897
Skewness	-0.636597	-1.160409	-0.647381	0.036308
Kurtosis	10.79126	17.797	10.48203	9.231035
	RINDIA	RLATIN_AMERICA	RRUSSIA	RUS
Mean	0.000278	-0.00024	3.81E-05	4.63E-05
Median	0.000247	0	0	0.000239
Maximum	0.15034	0.375876	0.252261	0.115258
Minimum	-0.115922	-0.402432	-0.206571	-0.102321
Std. Dev.	0.014519	0.025677	0.021236	0.014069
Skewness	-0.181876	-1.028174	-0.099044	-0.38707
Kurtosis	13.09327	85.63134	26.3905	12.39964

Table 3
DCC estimation – Stock price return in QE1 (11/01/2008 – 04/01/2010)
GARCH: $\boldsymbol{Q}_t = \overline{\boldsymbol{Q}}(1-\alpha-\beta) + \alpha\boldsymbol{\varepsilon}_{t-1}\boldsymbol{\varepsilon}'_{t-1} + \beta\boldsymbol{Q}_{t-1}$
DCC: $h_{i,t} = \boldsymbol{\omega}_i + \alpha_i e^2{}_{i,t} + \beta_i h^2{}_{i,t-1}$

		NYSE	LATIN	BOVESPA	MICEX	NIFTY	JCI	KLCI	SET	PSEi
ARCH	α	0.0858***	0.4829*	0.0486	0.0155	0.1239*	0.0652**	0.0365**	0.0544**	0.0627
		(0.0096)	(0.0767)	(.2565)	(0.3415)	(0.0654)	(0.0099)	(0.0187)	(0.0265)	(0.2641)
GARCH	β	0.9064**	0.5742**	0.9381***	0.9855**	0.8881**	0.9190**	0.9526**	0.9189**	0.8971**
		(0.0000)	(0.0002)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
DCC	VIX	-0.7869*	-0.3503*	-0.5615***	-0.3539	-0.2960*	-0.1054*	-0.2188	-0.2063*	-0.0539
	TED	-0.1141	-0.0977	-0.0922	-0.0413*	-0.0268	-0.1271	-0.1271	-0.0843	-0.0363

Significant 10%; ** Significant 5%; *** Significant 1%

the Russian stock index (MICEX) at the 10% significance level. This means that among the 8 (eight) countries studied, the implication of the finding only can only be applied to Russia. The finding indicates that in QE1 period, investor's choice of investment was affected by availability of liquidity.

This is unlike the case with VIX proxies that show the stability of financial markets in the US. It was found that the VIX correlation in the six out of eight countries studied was significant. The 1% significance level on the correlation between VIX and national stock indexes is found in the US (NYSE), Thailand (SET), Brazil (Bovespa), India

(NIFTY500), and Latin America (FTSE) countries. The 5% level of significance is found in the correlation between VIX and Indonesian stock index (JCI). Therefore, liquidity of availability affects investor's choice of investment in US, Thailand, Brazil, India, Latin America and Indonesia in QE1 period.

In the QE2 implementation period, as can be seen in Table 4, TED spread is not significant in any of the eight countries studied. The VIX is strongly significant in 1% level for all stock markets studied, except the Philippines, which is not significant. This finding suggests there is a decrease of significance level from correlation between stock market and availability of liquidity in QE2 period, but the significance level of correlation coefficient between stock market and financial stability is increasing. This indicates that in QE2, the investors focus on the financial stability of all 8 (eight) countries studied except the Philippines. This finding is supported by (Bianconi et al., 2013) who found that financial market stability spreads from one country to the rest. In terms of the coefficient correlation between stock market and liquidity availability, and between Philippine's stock market and financial stability, investor's choice of investment cannot be determined because the correlation coefficient is insignificant.

The findings of QE3 and QE2 implementation period are similar as shown in Table 5. It can be seen TED spread is insignificant in all eight countries studied, and explains why the correlation between availability of liquidity and stock market cannot be determined. But the VIX is found to be significant in six of the eight national stock markets studied. The two insignificant correlations are between VIX and PSEi (Philippines) and VIX and JCI (Indonesia). This result indicates that in QE3, the investors focused on the financial stability in all 6 (six) out of 8 (eight) countries studied, but the correlation coefficient in terms of financial stability in Indonesia and Philippines is not conclusive because the coefficient correlations are insignificant.

Table 4
DCC estimation – Stock price return in QE2 (10/01/2010 – 11/01/2011)
GARCH: $h_{i,t} = \boldsymbol{\omega}_i + \alpha_i e^2_{i,t} + \beta_i h^2_{i,t-1}$
DCC: $\bar{\boldsymbol{Q}}(1-\alpha-\beta) + \alpha\boldsymbol{\varepsilon}_{t-1}\boldsymbol{\varepsilon}'_{t-1} + \beta\boldsymbol{Q}_{t-1}$

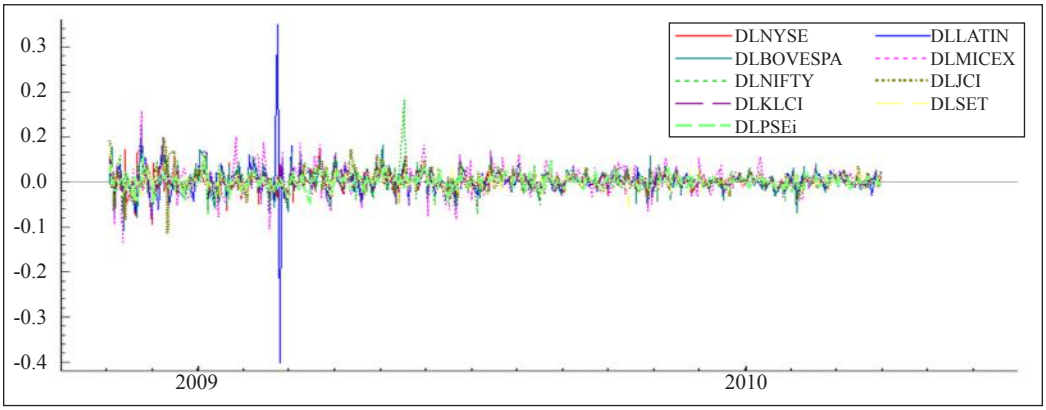
		NYSE	LATIN	BOVESPA	MICEX	NIFTY	JCI	KLCI	SET	PSEi
ARCH	α	0.1645**	0.1349**	0.0839	0.0998	0.0428*	0.1933**	0.0546**	0.1553**	0.1983**
		(0.0280)	(0.0360)	(0.1208)	(0.1977)	(0.0654)	(0.0373)	(0.0373)	(0.0124)	(0.0087)
GARCH	β	0.8198**	0.7849**	0.9185***	0.8982**	0.9395**	0.9483**	0.9483**	0.7640**	0.6073
		(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
DCC	VIX	-0.8487*	-0.2402*	-0.6207***	-0.4076*	-0.2188*	-0.1901	-0.1901*	-0.2210*	-0.0875
	TED	0.0094	-0.0255	0.0379	-0.0669	-0.0081	0.0099	0.0099	-0.0092	0.0228

Significant 10%; ** Significant 5%; *** Significant 1%

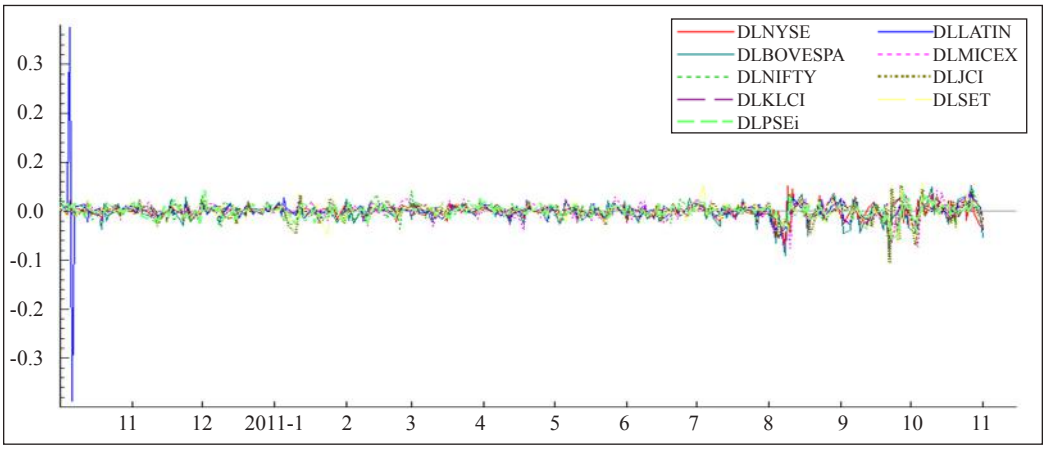
Table 5
DCC estimation – Stock price return in QE3 (08/01/2012 – 08/01/2014)
GARCH: $h_{i,t} = \boldsymbol{\omega}_i + \alpha_i e^2{}_{i,t} + \beta_i h^2{}_{i,t-1}$
DCC: $\boldsymbol{Q}_t = \bar{\boldsymbol{Q}}(1-\alpha-\beta) + \alpha \boldsymbol{\varepsilon}_{t-1}\boldsymbol{\varepsilon}_{t-1}' + \beta \boldsymbol{Q}_{t-1}$

		NYSE	LATIN	BOVESPA	MICEX	NIFTY	JCI	KLCI	SET	PSEi
ARCH α		0.1251	0.0326**	0.0369**	0.0337*	0.1195**	0.2699**	0.2394	0.1404**	0.1513
		(0.1301)	(-0.1584)	(0.0304)	(0.0572)	(0.0001)	(0.0001)	(0.5580)	(0.0349)	(0.4793)
GARCH β		0.6006**	0.9354**	0.9479***	0.9276**	0.8327**	0.7259**	0.6294*	0.8630**	0.8575**
		(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0926)	(0.0000)	(0.0004)
DCC	VIX	-0.7765*	-0.2792*	-0.3446	-0.2063*	-0.1429*	-0.0833	-0.0892*	-01195*	-0.0897
	TED	0.0427	0.0342	-0.0159	0.0402	0.0594	-0.0026	0.0017	-0.0150	-0.0310

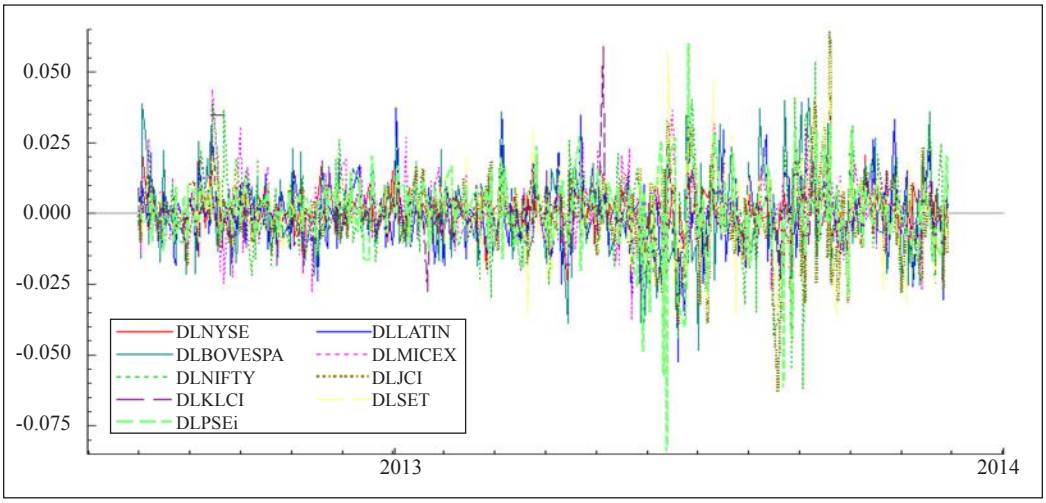
Significant 10%; ** Significant 5%; *** Significant 1%



(a)



(b)



(c)

Figure 1. DCC plot: (a) QE1; (b) QE2; and (c) QE3

The plot for DCC output can be seen in Figure 1. This plot provides clearer dynamics. As can be seen, QE2 is the most tranquil period.

Limitations of the Study

There are several limitations in this study. Only DCC model was used with stock returns as an input. The error bias in the result should be considered here. The model of DCC can be executed if there is preliminary model that can capture all the errors and present the common factor as an input to be processed as DCC. Additionally, the study divided the countries in three groups, but did not distinguish the effect between them.

CONCLUSION

The results estimated using DCC show insignificant correlation between almost all of the national stock market studied in three different implementation period and TED spread, which acted as a proxy for liquidity availability. The only significant correlation between TED spread and national stock market can be found in the QE1 period between TED spread and Russia (MICEX). The VIX is found to be significant in almost all QE periods studied for almost every national stock market researched, except Philippines (PSEi) in QE2, and Philippines (PSEi) and Indonesia (JCI) in QE3. Min and Hwang (2012) found VIX as one of the channel of contagion effect and act as financial market stability proxy. The interesting finding is that when the TED spread is found significant between the correlation of TED spread and MICEX in QE1 period, the VIX is found insignificant. The proxy of financial stability (VIX) was found highly significant in QE2 period, and this indicated investor's choice of investment was affected by financial stability in QE2 implementation period. It

cannot be conclusive proven that liquidity availability affects stock market because of the insignificant coefficient correlation.

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Work-Life Balance, Motivation and Personality of MSE Owners on Firm Performance in Greater Jakarta

Usman Manor[1] and Putri Mega Desiana[2]*

[1]*Magister of Management, Faculty of Economics and Business, Universitas Indonesia, 10430 Jakarta, Indonesia*
[2]*Department of Management, Faculty of Economics and Business, Universitas Indonesia, 16424 Depok, Indonesia*

ABSTRACT

This study examines the impact work-life balance, motivation, and personality of owners of micro and small enterprise (MSE) on their business performance in Greater Jakarta area. A total of 152 micro and small enterprise was surveyed and data was analysed using SPSS 23.0 software. Results indicate work-life balance does not have an influence on MSE performance, whereas motivation and personality do.

Keywords: Micro and small enterprises, motivation, performance, personality, work-life balance

INTRODUCTION

Rapid industrial development has led to the mushrooming of small businesses known as Micro and Small Enterprises (MSEs), which are now dominating the business landscape in many countries, including Indonesia. The MSEs dominate the economy of developing countries and help developing countries face their economic challenges. This type of businesses contributes to economic development, improves household incomes and provides work opportunities (Steer & Taussig, 2003 as cited in Benzing & Chu, 2009).

The influence of MSEs on the economy is statistically evident. In 2012 there were 57,895,721 MSEs in Indonesia with 57,189,393 being Micro Enterprises, 654,222 units Small Enterprises and 52,106 Medium Enterprises. The MSEs also contribute 58.92% to Indonesia's Gross Domestic Product (GDP) and provide jobs for 97.30% of work forces (Bank of Indonesia, 2015). Thus, as MSEs have a strong influence on the national economy, they should be further studied.

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E-mail addresses:
putri.mega71@ui.ac.id (Putri Mega Desiana)
manorusman@gmail.com (Usman Manor)
* Corresponding author

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The MSEs in each Indonesian province have managed to create jobs. The DKI Jakarta has 28,378 micro enterprises and 6,616 small businesses, which respectively provides 64,180 and 52,710 jobs. In West Java, there are 421,881 micro business and 58,359 small enterprises and each provides 883,706 jobs and 463,193 jobs respectively. In Banten, 108,235 micro businesses and 9,313 small companies provide 191,324 and 80,726 jobs respectively (Badan Pusat Statistik, 2015). These three provinces are part of Greater Jakarta (Jabodetabek) Area. Therefore, research on MSEs in this geographic area is important due to their contribution to the economic development of the region.

Among MSEs, micro enterprises have shown significant growth. In 2011 they accounted for 34.64% of MSEs to increase to 38.81% in 2012 (an increase of 4.17%). However, there are still many obstacles that MSEs must overcome, such as human resources, capital, law, accountability, business climate, infrastructure and access (Bank of Indonesia, 2015).

Regarding the human resources issue, owners of a MSE have limited knowledge and skills to manage their business, and this can lead to MSE failure (Zaridis & Mousiolis, 2014). Other than these two aspects, MSE also lacks good human resources, i.e., the spirit and character of entrepreneurship (Sukesti & Iriyanto, 2011). The entrepreneurial spirit and character correspond to motivation and personality of business owners. Motivation that contains intensity, direction and persistence becomes the driver for the owners to achieve their business goals. Benzing and Chu (2009) stated that motivation is important to achieve business revenue. This research extends Benzing's work by considering the achievement of other-than-business goals. Meanwhile, researchers believe that entrepreneurs' characteristics, which are reflected from their personality traits, influence firm performance (Isaga, 2017). Therefore, the focus of this research is on the owners who will determine the performance of MSEs.

Based on previous research, many factors determine firm performance, such as abilities, skills, family background, work experience, and social and demographic profile. In addition, psychological factors, such as perception, role, work attitude, personality, motivation and job satisfaction are also influential (Katongole, Ahebwa, & Kawere, 2013; Lai, Saridakis & Johnstone, 2016). Prijadi and Desiana (2017) found gender, owners' involvement and experience affect profitability.

Walker and Brown (2004) revealed that operating an MSE required full involvement from the owner, including decision-making, either as individuals or partners. For this reason, it is interesting to study the work and personal life balance (work-life balance) of owners because to deliver an outstanding performance requires a proper separation of the work tasks and personal life of the owners. Most previous research examined work life balance from the employees' view point (Beauregard & Henry, 2009; Cegarra-Leiva et al., 2012), whereas almost all MSEs

are managed by owners whose work life balance preferences could also influence the success or failure of the MSE. The inclusion of owners' preference is expected to be one of the novel contributions of this research.

Besides the owners' work-life balance, the MSE owners' motivation is important because the majority of the MSE owners want to improve their income (Benzing & Chu, 2009). In this research, intrinsic and extrinsic motivation are both used according to Herzberg's theory. The MSE owners' personality is also important because it combines their mental and physical characteristic that provide them a sense of identity (Kreitner & Kinicki, 2004). To achieve its goals, a MSE needs to deliver a continuous and outstanding performance supported by the balance of work and personal life, owners' motivation in running the business, and the owners' personality. In this research, the owner's work life balance, motivation and personality were measured and used as the independent/predictor variables in an analytic model, whereas performance was measured and used as the dependent/outcome variables.

LITERATURE REVIEW

Performance

Performance means the level of success in performing a task and the capability of an individual in achieving previously set goals (Gibson, 2003). Success is the combined outcome of work capacity and skills (Kreitner & Kinicki, 2004). Moreover, performance is considered the results achieved by certain roles within a defined period of time (Bernardin & Russell, 2013). Outstanding performance requires an alignment of behaviour with wisdom and science, skills, and competence to work effectively in a work activity (Armstrong, 2008).

There is no specific way to evaluate performance. A particular approach to evaluate performance is relative to the objective of the organisation or company. One of the approaches to evaluating firm performance is based on its financial aspect. This method is suitable for micro and small enterprises. According to Reid and Smith (2000), the indicators for a financial plan are:

- Employment Growth, this refers to the changes in the percentage of total employees over the years, indicating company investment.
- Profitability, the estimate of ratio and calculation of net profit obtained from the difference between the amount of capital injected into the business and the expenditures.
- Productivity means measuring the results with expenses. The higher the productivity of an organisation, the better its performance.

The non-financial aspect is important when measuring the organisation or company's performance success. It is criteria based on the personal or individual owner of the organisation or company. According to Walker and Brown (2004), the indicator of non-financial performance is personal affective criteria, including

lifestyle aspects, less dependency on the financial aspect (diminished financial), financial strength (strong financially) and including the ambition and determination of success and social responsibility (social/ community responsibility).

Work-Life Balance

Work-life balance is a concept that separates an individual life into two contrasting aspects, i.e. work and personal life. These two issues can sometime result in negative block (Nwagbara & Akanji, 2012). Additionally, work life balance can also be described as the individual's capability, regardless of age or sex, in combining the responsibility of their work life with their household life (Wheatley, 2012). From the company owner's point of view, work-life balance improves employee loyalty, results in better employees-company communication and productivity improvements that will benefit the business owner to maintain the sustainability of the enterprise. However, work-life balance has several challenges, namely culture of the organisation, work time and effectiveness. Work-life balance has several dimensions, such as: (1) Enough Time-off from Work; (2) Allegiance to Work; (3) Flexibility on Work Schedule; (4) Life Orientation; and (5) Upkeep of Work and Career (Wong & Ko, 2009). Since work-life balance is a concept that separates an individual life into two different aspects, this priority imbalance has an effect on decreasing productivity and performance in the organisation (Fapohunda, 2014).

Motivation

Motivation or *movere* means to move or actuate. Motivation is a stimulation of an activity to achieve its objective (Kreitner & Kinicki, 2004). Motivation is the essential process of psychology based on the nature of competitiveness through perceptions, personality, attitude and learning. It also is an essential element in behaviour (Miner, Ibrahimi, & Watchtel, 1995 as cited in Maharjan, 2012). Motivation is perceived as an internal force that relies on an individual's needs and drives them to fulfil those needs (Tan & Waheed, 2011). Work motivation (both intrinsic and extrinsic) has an influence on the effectiveness of the organisation, especially to affect the growth of the firm (Manzoor, 2012).

Intrinsic motivation refers to the motivation within that individual that drives him or her to achieve his or her objectives. Also, intrinsic motivation is a behaviour from the attachment of their interest. In other words, fun and satisfaction are obtained from within the person (Guay, Vallerand, & Blanchard, 2000). The driver of intrinsic motivation, among others, is an achievement, work, recognition, and growth (Herzberg, 1966 as cited in Tan & Waheed, 2011).

Extrinsic motivation is the motivation that comes externally and affects an individual's behaviour. It is known as a hygiene factor. It also relates to different behaviour with objectives located outside an individual, but it remains attached to the action taken (Guay, Vallerand, & Blanchard, 2000). Moreover, extrinsic motivation

relates to the job's external matters, i.e. working conditions, work safety, and salary. When individuals are extrinsically motivated, they take part in actions in search of benefits they wish for such as money, reputation, or publication of journals (Makki & Abid, 2017). The extrinsic motivation factors, among others, are work security, money, and working condition (Herzberg, 1966 as cited in Tan & Waheed, 2011).

Personality

Personality is the combination of stable physical and mental characteristics that provide a sense of identity to an individual (Kreitner & Kinicki, 2004). It has a permanent feature and uniqueness that will influence individual behaviour and is affected by genetics and environment where mutual adaptations take place (Feist, 2006). Based on many theories on personality, the big five personalities are extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. These five are owned by each individual but expressed in different levels. Zhao and Siebert (2006) reveal that across the 23 studies they examined, entrepreneurs scored lower than other managers on neuroticism and agreeableness, but higher on conscientiousness and openness to experience. This research combines five personalities dimension into a single group by first determining the high or low level of each personality in accordance with the required entrepreneur. Barrick and Mount (1991) found that several dimensions of personality (such as conscientiousness and neuroticism) are important attributes for achieving performance.

From the literature review above, this research proposes three hypotheses supported by previous studies. Fapohunda (2014), and Rehman and Roomi (2012) found that work-life balance for the MSE owners has a significant influence on their business performance because the owners have flexibility, control, freedom in performing business activities and other responsibilities. Thus, this research develops the following hypothesis:

Hypothesis 1: Work-life balance has a significant positive effect on the performance of an MSE

Hendijani, Bischak, Arvai and Dugar (2016) mentioned that intrinsic motivation and external motivation have an impact on performance. Rogstadius et al. (2011) also stated intrinsic motivation and extrinsic motivation have a significant effect on the performance or outcome of output in the firm. Motivation is not only considered a boost for a person, but also a driver of a person's performance (Pinder, 2011 as cited in Yan, Zhang, Zhang, Lu, & Guo, 2016). Therefore, managers seek ways to motivate employees to improve firm performance (Imran et al., 2014 as cited in Yan et al., 2016). Thus, the following hypothesis is proposed:

Hypothesis 2: Motivation has a significant positive effect on the performance of a MSE

Hurtz and Donovan (2000) stated that personality, as reflected in the big five models, has a significant effect on organisational performance. Barrick, Mount and Judge, (2001) also found that conscientiousness and emotional stability are valid predictors across performance. Therefore, that the following hypothesis is developed:

Hypothesis 3: Personality has a significant positive effect on the performance of a MSE

From the hypotheses above, the model used in the research is shown in Figure 1.

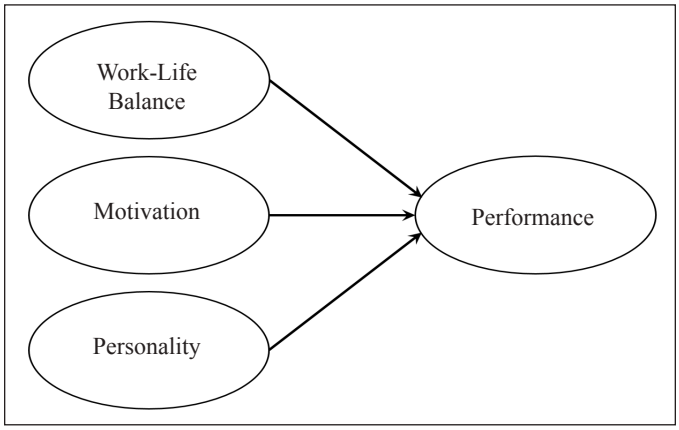

Figure 1. Research model
Source: Modified from Fapohunda (2014), Rogstadius et al. (2011), and Zhao, Seibert and Lumpkin (2010)

METHODS

This research was surveyed 152 respondents who are MSE owners within the Greater Jakarta area based on a convenience and judgemental sampling whereby the sample were deliberately selected based on an assessment of the researchers (Malhotra & Birks, 2006). In the sample, the majority of the respondents are in the trading industry, culinary industry and home-made industry. The survey selects the owner as a respondent to assure that they fully understand the form and its performance.

Data was collected using single cross-sectional design. Before the survey, a pre-test was conducted to verify the validity and reliability of the questionnaire. The variables in this research consist of independent variables and dependent variables. Independent variables are work-life balance, motivation. Personality and performance are the dependent variables. This research consists of four main constructs with 38 indicators. The four constructs are: (1) Performance uses instruments developed by Reid and Smith (2000), and Walker and Brown (2004); (2) Work-life Balance uses instruments developed by Wong and Ko (2009); (3) Motivation is measured by instruments originally created by Herzberg and revitalised by Tan and Waheed (2011); and (4) Personality measures use the *Big*

Five Personality model improved by McCrae (2011).

Regarding the validity and reliability testing, this research drops seven items from 16 items for variable performance and three items from ten items for variable personality. As a final point, validity was in the range 0.543-0.895, whereas reliability was in the range 0.668-0.837. The remaining indicators are used for final regression.

RESULTS AND DISCUSSION

The variables have more than one indicator. Therefore, before doing the regression, factor analysis is conducted to yield a single composite variable (index). The correlation among these composite variables are shown in Table 1. The result revealed a modest correlation between variables (0.569-0.697), thus the regression analysis can be performed.

Table 1
Correlation between variables

Latent Variables	Variable Correlation		
	Work-Life Balance	Motivation	Personality
Work-Life Balance	1	0.586*	0.569*
Motivation	0.586*	1	0.697*
Personality	0.569*	0.697*	1

*Pearson correlation is significant at the 0.01 level (2-tailed)

Finally, this research applied Ordinary Least Square to estimate performance as a function of work-life balance, motivation and personality. The results are shown in Table 2.

Table 2
Estimation of performance using ordinary least square

Independent Variables	Performance		
	Coeff.	Std. Error	Sig.
(Constant)	0.000	0.065	1.000
Work-life Balance	-0.009	0.084	0.917
Motivation	0.424***	0.097	0.000
Personality	0.231***	0.095	0.017
No of Cases		152	
Adj. R Square		0.350	

***p< 0.01 (all two-tailed tests)

Results of the study indicated that work-life balance has a negative effect on company performance. Thus, the higher the work-life balance, the lower the firm performance. However, the effect is not statistically significant. Meanwhile, motivation and personality have positive effect on business performance. Consequently, higher motivation and personality increases performance. The *R Square* for this model is 0.350, which means work-life balance, motivation, and personality are able to explain the performance by 35% while the rest is explained by other variables. The following section will discuss this further.

Work-life balance does not affect performance. This is quite surprising because several researches found work life balance to influence performance. Lazar and Ratiu (2010) stated that work-life balance practices will improve firm performance. They found work life balance is not only beneficial for employees, but also for their families, firms and society.

This finding was supported by Rehman and Roomi (2012), and Fapohunda (2014).

It is possible MSE owners consider their personal life as not as important as motivation and personality. They are confused when they have to consider work-life balance at the same time as motivation and personality as drivers for performance (when run separately, though not shown in this paper, work-life balance has a positive and significant impact on performance). In the end, *work-life balance* does not affect the scale of MSE's performance.

The second hypothesis is supported by data. There is a positive influence of MSE owners' motivation against their performance. This shows that the proposed hypotheses are accepted**.** The results are consistent with that of Rogstadius et al. (2011) who found that there is a significant influence of motivation on performance. The results show intrinsic and extrinsic motivation. Intrinsic motivation of owners such as motivation for achievement (loading factor = 0.525), motivation for work (0.524), motivation for acknowledgement (0.627), and motivation for development (0.543) become the primary motivations to improve performance other than extrinsic motivation such as motivation for money (0.408), motivation for work condition (0.344), and motivation for job security (0.472).

The research also found that motivation has a significant influence on the MSE's performance. The determination of MSE to grow and develop and the belief that their MSE business will guarantee their life financially improved firm performance. The MSE owners have the freedom to manage their business at their own will without any force or pressure from the subordinates unlike what is usually faced by the employees working in the company; MSE grows and develops to their maximum potentials. Moreover, MSEs seem to be immune from the global crises, which is another assurance for their existence. MSE sustainability will not be determined by an external factor like a crisis, but by the internal factors described previously. Therefore, the MSE owners need to have strong motivation to reach their maximum potential.

The second hypothesis on a positive relationship between personality and performance is supported. This was confirmed by Zhao, Seibert and Lumpkin (2010) who pointed to a significant association between personality and performance. To get more detail, the character of maintaining feel-good aspects of a relationship (extraversion, loading factor = 0.689), hospitality (agreeableness, 0.784), cautious (conscientiousness, 0.813), emotional stability (0.692) and openness to experience (0.794) will drive the MSE owners to improve their performance.

Furthermore, the personality of the MSE owners will support business performance. To achieve significant performance, a spirit of entrepreneurship including perseverance, responsibility, organisation skill, and ability to handle the pressure, and being open to new ideas are required. Fierce competition and a fluctuating business environment have forced MSEs to work diligently and be

open for changes. MSE owners must adapt themselves well and be open for new ideas to resolve all the pressures they face.

A good performance will be achieved with good productivity, MSE's owners' satisfaction, and positive response to its environment. High productivity will give the satisfaction that the MSE owners need, and therefore, they can contribute to the country's GDP. To that end, the MSE owners must have the motivation to grow for success, have an open personality, perseverance, and be responsible. High motivation and personality will pave the way for achieving maximum potentials as they have the satisfaction and pride in executing their business. In general, MSE problems lie in the quality of human resources that prevent them from achieving their maximum potential. It can be prevented through good motivation and open personality that welcomes new ideas and, in the end, these will be key to achieve good performance, success, and MSE sustainability.

CONCLUSION

This research enriches the understanding of owner's work-life balance, which does not always have positive impact on performance. Even though the effect is not statistically significant, there is slight indication that the increase in work-life balance could reduce MSE performance. This unique finding must be interpreted cautiously. Theoretically, when the notion of work-life balance is introduced with motivation and personality, the impact on performance may not be as expected. Empirically, this could happen perhaps because the respondents are business owners with unique characteristics. For them, willingness to add work time, to take care all matters outside work and to work in more flexible times (i.e., work-life balance) would trigger lower performance. Thus, this research complements that of Beauregard and Henry (2009), wherein they assert there is insufficient evidence to support the notion that work-life practices enhance performance.

Furthermore, motivation needs to be maintained, and achievable targets need to be set to support further growth and development. This is possible through the clear and measurable vision and mission from the MSE owners. Besides motivation, personality also need to be maintained, particularly perseverance, responsibility and the ability to endure pressure and be open to new ideas. This is only possible if MSE owners update themselves with the latest development, particularly regarding business and technology development. For those reasons, information sharing among the MSE owners through discussions, training, and association of MSE owners needs to be established.

This research, however, has some limitations. The sample population is limited to Greater Jakarta area, so the findings cannot be generalised for MSE across Indonesia. Moreover, the sample size is small and future research with a much larger sample size conducted outside Greater Jakarta is suggested to complement the results of this research. Regarding theory, compared with the motivation theory

of Maslow and the motivation theory of McClelland, Herzberg's motivation theory is more accurate and suitable for research on Micro and Small Enterprises. The entrepreneurship motivation is far more suitable than the Herzberg's motivation theory.

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Loan Price and Size in the Indonesian Retail Microcredit Market

Ganesha Bayu Murti*, Rofikoh Rokhim and Viverita

Graduate School of Management, Universitas Indonesia, Depok 16424, Indonesia

ABSTRACT

This study analyse microcredit loan price and size in the Indonesian retail trade sub-sector using data from 2015. The aim is to find out if micro enterprises (MEs), as debtors, are harmed in microcredit transactions with Microfinance Institutions (MFIs). It was found that MEs are harmed if the percentage of the loan price increase exceeds that of the loan size, from the first to the second loan. The behaviour of MFIs is also investigated. This study uses the ME as a unit of analysis and examined 400 MEs from all provinces in Indonesia. A non-probabilistic sampling technique was used to identify the MEs while three types of MFIs were examined: cooperatives, Baitul Maal wat Tamwils (BMTs), and others. Most microcredit transactions, except 'between MEs and MFIs' in the 'others' group, did not have a loan price movement that was greater than that of their loan size. Consequently, most MEs were not harmed by microcredit transactions with MFIs.

Keywords: Cooperatives, Indonesia, loans, microcredit

INTRODUCTION

Microenterprises (MEs) aiming to expand their businesses may need support from Microfinance Institutions (MFIs). Hence, it is important for MFIs in Indonesia to comply with good corporate governance policies. This compliance is required by the Indonesian Financial Services Authority, a government body that ensures that financial service sector activities are implemented in an organised, fair, transparent and accountable manner (see http://www.ojk.go.id). The MFIs can help to alleviate poverty, particularly through their ME support.

In Indonesia, MFIs provide a range of financial services to the poor (including MEs), while maintaining their profitability and sustainability goals (Munawar, 2010). In other words, MFIs operate to accomplish two objectives: profit and social motives (Baskara, 2013). Therefore, Otoritas Jasa

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E-mail addresses:
ganesha.murti@gmail.com (Ganesha Bayu Murti)
rofikoh.rokhim@ui.ac.id (Rofikoh Rokhim)
viverita.d@ui.ac.id (Viverita)
* Corresponding author

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Keuangan (OJK or Financial Services Authority) monitors interaction between MEs and MFIs. In this way, MFIs are a formal source of loans for MEs.

The role of MFIs (including microcredit) in poverty alleviation is hotly debated. Some researchers believe that microcredit plays an important role in alleviating poverty, while many others do not. More specifically, Hickel (2015) states that lenders always benefit from microfinancing; many of these lenders charge interest rates up to 200% per annum. According to Brau and Woller (2004), high interest rates are difficult to avoid because MFIs operate with very high administrative costs per dollar lent, due to the small principal amounts of microcredit. As such, economies of scale does not exist in the lending process to cover fixed costs. On the other hand, MEs, as borrowers, are less sensitive to loan prices and are more concerned with their access to microcredit (Zachary, 2013).

In 2005, the World Bank reported on the investment climate of more than 90 countries in which, it stated that limited access to finance is a primary obstacle in the development and progress of ME. The need for loans in Indonesia, including MEs, is very high. Although 56% of the adult population in Indonesia has access to credit, only 13.1% are eligible to access formal financial sources (Presidential Decree No. 82/2016).

A new international approach suggests that microfinance should become an integral part of the financial system (Ledgerwood & Handbook, 1998). Therefore, MFI should be able to provide financial services for the poor, who otherwise cannot access financial services (Gutiérrez-Nieto, Serrano-Cinca, & Molinero, 2009). However, as a business organisation, MFIs cannot merely focus on social missions.

Rock, Otero and Saltzman (1998) reported that MFI institutions carry out many missions to achieve self-sufficiency. Therefore, it is a big challenge for MFIs to remain committed to carrying out its social missions, while maintaining its sustainability (Schellhorn, 2011). In line with these opinions, the shift from a social, to a sustainability mission is reflected in trade-offs. These trade-offs occur between the breadth of the range of services (outreach) of the social mission and the increase in the earnings, highlighting the mission for MFI profit (Abrar & Javaid, 2014). They found an inverse relationship between outreach and profitability. This implies that an MFI is side-tracked from a social to a profit mission when there is an increase in earnings accompanied by a decline in affordability.

Mersland and Strom (2010) analysed data of 379 MFIs in 74 countries from 2001 to 2008. They found no evidence of a shift from social to sustainability mission in the industry as a whole. They noted loan size increased corresponding with average gains and average costs. Hence, the shifting occurs when MFIs pursue higher financial returns. This effect can be neutralised if the MFIs also pursue cost-efficiency. Mersland and Strom investigated average cost and the average profit to determine the average loan size. They suggested average loan size is

most commonly used to measure the reach of MFIs in servicing poor clients. There was no conclusive evidence of a shift from social to sustainability missions in the literature.

The likelihood of a shift in profit-oriented MFI missions, with excessive loan prices in response to requests for certain loan sizes, would jeopardise the ME business as microcredit borrowers. The situation where MEs, as debtors, are harmed in microcredit transactions with MFIs in Indonesia is feared to jeopardise poverty alleviation programmes, particularly as a barrier for MEs to access microfinance. Therefore, it is important to secure MEs needs when accessing microcredit from MFIs. In this context, MEs, as microcredit demand side actors, need to continue borrowing from MFIs by maintaining the borrowing behaviour for their benefit, without harming themselves as debtors, and vice versa. Hence, MFIs, as lenders, should still be able to carry out their social missions while maintaining their profit missions. Therefore, this study will prove whether the MEs, as debtors, are harmed in microcredit transactions with MFIs.

Based on this study, MEs are harmed if the percentage of the loan price increases and exceeds the percentage of the loan size increase, from the first to the second loan. This study observed ME microcredit transactions in all provinces in Indonesia with MFIs as lenders focusing on three types of businesses: cooperatives, BMTs, and others (e.g., Penanaman Modal Madani, Gold/Pawn Shop and other similar types). The results show that most microcredit transactions, except 'between MEs and MFIs' in the 'others' group, did not have a loan price movement that was greater than the loan size movement. Consequently, most MEs were not harmed by microcredit transactions with MFIs.

The remainder of this paper is organised as follows. Section 2 presents a brief review of literature on this topic followed by a discussion on methods of the study in Section 3. Section 4 discusses the findings of this study while research recommendations and conclusions are presented in Section 5.

LITERATURE REVIEW

Microcredit transactions between MEs and MFIs depend on the characteristics of the MEs as debtors, and the MFIs as lenders. Therefore, in this study, both need to be explored. MEs are very important because of their strategic role in the economy. As stated in Kuncoro (2008), in Indonesia, MEs employ a large number of workers, much more than small, medium, and large sized enterprises. They also contribute significantly to GDP growth and are highly resilient during financial crises. However, without proper support by MFIs, the role of MEs may not be realised.

There are many definitions of MFIs. Some define MFIs s a formal mechanism of the market used to reduce the risks faced by poor people in borrowing from informal groups (Nair, 2001; World Development Report, 2001). In general, the term MFI refers to financial institutions with a commitment to assisting poor households and micro enterprises in gaining access

to financial services (Hardy, Holden, & Prokopenko, 2002).

The financial sustainability of MFIs is one of the success factors of poverty alleviation programme. According to Morduch (2000), only 1% of MFIs are currently financially self-sustainable and that no more than 5% would ever be financially self-sustainable. The term financial sustainability is defined by Woller, Dunford and Woodworth (1999) as an MFI that covers its operating and financing costs through programme revenue. Welfare groups argue that profit mindset can be replaced by social investors (Morduch, 2000). However, little evidence exists that suggests that MFIs that loan to borrowers who are below the poverty line are able to financially be self-sufficient with the help of social investors (Navajas, Schreiner, Meyer, Gonzalez-Vega, & Rodriguez-Meza, 2000). In pursuing an increased programme revenue, MFIs can strategically do three things: capture economies of scale by extending larger loans to people above the poverty line, increase the interest rate (loan price), or both (Brau & Woller, 2004).

Kimutai and Jagongo (2013) define the interest rate as the price an individual or organisation pays for using borrowed money (loan). There has been a lot of discussion on the way MFIs increase their interest rate (loan price). It is commonly believed, in the field of microfinance, that MEs with very short period of loan and high yield business are not too sensitive to the level of the rates at which they borrow. They care more about access to funding (Zachary, 2013). This is because there is a dire need for money to survive. Hence, the cost of borrowing is a strong argument in relation to how credit demand does not diminish if there is an increased loan price (Morduch, 2000). Access to funding is much more important to borrowers than rates, because their micro businesses are highly profitable, provided that they could get the working capital to start the business (Zachary, 2013).

Amonoo, Acquah and Asmah (2003) report that whether high interest rates affect demand for credit is inconclusive. According to them, there are two main schools of thought. The proponents of the first school, Stiglitz and Weiss (1981), and Besley (1994), argue that high interest rates encourage the adverse selection of loan seekers. Those who take a high risk and get their loans approved usually have high default rates. The second school of thought states that high interest rates do not affect the demand for credit. More specifically, Aryeetey (1994) indicates that the high interest rates were not a major concern for ME borrowers. In that study, the MEs considered an average annual interest rate of 19.5% to be fair and reasonable. This interest rate is above the average market rate at that time (i.e., 12.5%).

Karlan and Zinman (2008) state that there has been an assumption of "price inelastic demand of microcredit by MEs". Price inelastic demand means that the poor are largely insensitive to interest rates. This has provided a foundation for encouraging MFIs to run at sustainable (profitable) interest rates, on the basis that it

is unlikely to reduce poor people's demand for, or access to, credit. The study found that demand curves were gently downward sloping, throughout a wide range of rates below the lender's standard rates. Demand sensitivity rose sharply at prices above the lender's standard rates. Higher rates also reduced repayment. In addition, Karlan and Zinman (2008) found that the loan price was not the only contracting parameter that might affect demand, MFI profits and targeting may also affect demand.

A recent study discussed in Zachary (2013) looked at the demand impact when lending rates were 10% lower from previous loan. The study suggests that credit demand from current and new borrowers is elastic to pricing. Hence, borrowers do care about rates. From the perspective of borrowers, lower rates can increase the potential demand for loans and financial inclusion, while excessive rates can push borrowers into over-indebtedness. From the perspective of MFIs, lower rates can make them more dependent on donor's money, while higher rates can lead to higher regulatory scrutiny and attract the worst borrowers (adverse selection). Therefore, the question around fair rates is key to policymakers and MFIs (Zachary, 2013).

Lipsey, Courant and Ragan (1999) state that there are four demand and supply laws. One of them is that the rise in demand will shift the demand curve to the right, when the supply curve remains unchanged. In the microcredit point of view, this type of supply and demand interaction will lead to an increase in both the loan price and the loan size. This study defines microcredit as mutually beneficial for MEs and MFIs, if the percentage of the loan price increase does not exceed the percentage of the loan size increase, from the first to the second loan. Thus, whether MEs are harmed in transaction with MFI depends on the elasticity of the supply curve.

Microcredit will not be beneficial for MEs if the supply curve is inelastic. This is because the percentage of the loan price increase exceeds that of the loan size increase, from the first to the second loan. The impact of the inelastic supply curve and the shift in the demand curve to the right in a microcredit transaction, where the percentage of the loan price increase exceeds the percentage of the loan size increase, from the first to the second loan, is illustrated in Figure 1.

Figure 1 shows that the value of loan prices (P_1 and P_2 for the first and the second loan respectively) and loan sizes (Q_1 and Q_2 for the first and the second loan respectively) are really the same value for the demand and supply curves. Therefore, there is no problem if the values of P_1 and P_2, as well as Q_1 and Q_2, are considered MFI data but surveyed using MEs as the sample and population. This is the case as long as the loan transaction between MEs as debtors, and their MFIs as creditors, are well surveyed and documented.

In Indonesia, according to Rudjito (2003), MFIs can be divided into four major groups. The first is the Banking Group, which includes the Rural Bank or Bank Perkreditan Rakyat (BPR) and the

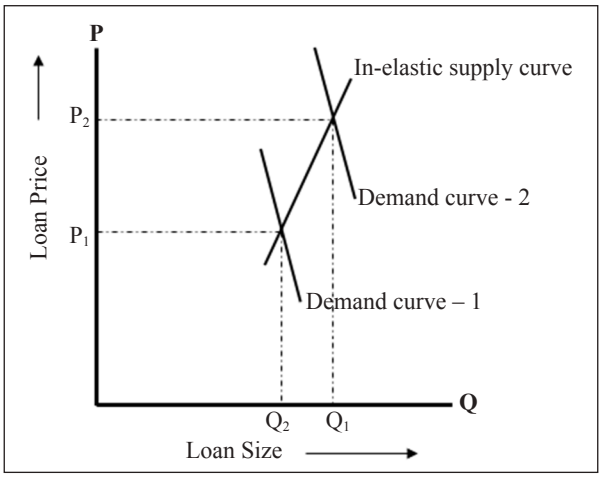

Figure 1. Supply and demand-side perspective of mission drift

Village Credit Institution or Bank Kredit Desa (BKD). This group has a mission of increasing shareholder value. According to the new MFI law, this group is now categorised under the banking sector, instead of the MFI sector. Therefore, in this study, the Banking group is excluded from the analysis. The second major group is the Cooperatives group, with a mission of increasing the wealth of its members. The third group is the Baitul Maal wat Tamwil (BMT), which has a similar mission to the Cooperatives group: to increase the wealth of its members. The last group is called the Others. The Others group includes, but is not limited to, venture capitalists, the PNM, Small Business Development and Cooperatives (PUKK), Pawn Shops, and Savings and Loans (TSP).

To assist in answering the research question (i.e., whether MEs in Indonesia are harmed as a result of financial transactions with MFIs in Indonesia in 2015), the following hypothesis was developed:

H0: The retail trade sub-sector MEs were harmed as the result of the microcredit transactions in Indonesia in 2015.

METHODS

This study employed the quantitative approach. Questionnaires were handed out to 400 ME owners between October and December 2015 (Sugiyono, 2014). The eight questions selected were based on the recommendations by Rhyne (1998). Questions were asked about loan prices and loan sizes. Survey questions also included the name of the institution that provided the loan, the type of institution that provided the loan, the date of the first loan, the nominal value of the first loan, the nominal interest rate of the first loan, the date of the second loan, the nominal value of the second loan, and the nominal value of the interest on the second loan. Respondents were selected through screening questions (e.g., whether MEs received the second loan, whether MEs

received a MFI loan from MFI, whether the second loan was in 2015, whether the first loan was made in 2013 or earlier).

The MEs were the demand-side players in the microcredit transactions with MFI. Among the many ME sub-sectors, the retail trade sub-sector was selected as the population in this study. The retail trade sub-sector is the largest population of MEs in the Indonesian economic sector, and hence, plays a significant role in poverty alleviation (Badan Pusat Statistik, 2007).

It was impossible to choose the research samples based on the probability sampling technique. This is because most of the latest secondary data were obtained from the 2006 Economic Census (covering 9,982,776 units of MEs, spread over all provinces in Indonesia in 2006). Therefore, due to the difficulty in accessing the required data, this study employed a non-probability sampling technique.

As stated previously, data was collected from 400 ME owners in Indonesia. A 95% level of confidence of the probability that the value of a parameter (population mean) falls within a specified range of values was obtained, as recommended in Isaac and Michael in Sugiyono (2014), and Wunsch (1986), in Tashakkori and Teddlie (2009). The sample was non-probabilistic. Therefore, the field survey was directed to the most reachable locations of the population (e.g., traditional markets in the capital city of each province). The researchers interacted with the respondents through the designed questionnaires.

The sampling technique involved several steps. First, the distribution of the population in each province, although very uneven, was clearly grouped based on the provinces in Indonesia. Second, from each of these provinces, the representative number of respondents were collected proportionately. For all provinces (33 provinces), the number of samples collected were proportionate with the population, with a minimum of 1 respondent. Following Bungin (2015), this study divides the 9,982,776 MEs by 400, resulting in 24,957. Each province's population was divided by 24,957 to determine the number of respondents. For example, the largest population of MEs is in West Java (i.e., 1,749,786), so the West Java sample size has 70 ME respondents. The smallest population is in North Maluku (24,229), so the number of ME respondents for that region is 1.

The structure of the loan suppliers was based on their transactions. Creditor were grouped into three MFI business types: Cooperative group, BMT group and the Others group (Rudjito, 2003). A total of 306 transactions were made by MFIs in the Cooperative group, 24 transactions were made by MFIs in the BMT group, and 70 transactions were made by MFIs in the Others group. In total, 400 transactions were made by the 400 MEs (one transaction for each MEs), as borrowers to various MFIs. After removing the outliers, the results from 230 MEs were analysed. Since the definition of MEs is being harmed in transaction with MFIs related to the increasing loan price as well as loan size, it is actually the form of the elasticity formula.

The demand elasticity formula used in the investigation is as follows:

$$E_d = \frac{P_2 - P_1}{(P_1 + P_2)/2} \text{ x } \frac{(Q_1 + Q_2)/2}{Q_2 - Q_1} \quad (1)$$

where:
E_d = Demand elasticity
P_1 = Price of the first loan
P_2 = Price of the second loan
Q_1 = Quantity of the first loan
Q_2 = Quantity of the second loan

If the t-value of the elasticity of demand is greater than 1, we accept the null hypothesis, where MEs are being harmed in the transactions. In improving the credibility of the finding, this study employs a Z Score criteria for accepting the data excluded by the outliers. The Z Score ranged from -3.5 to 3.5 which is the value being accepted.

RESULTS AND DISCUSSION

This section presents the results and discussion. The descriptive statistics of the structure of the ME retail trade business types are presented in Table 1. Of the 400 MEs in the retail trade sub-sector, most (46%) are from the food, beverage, and tobacco industry, while the smallest number (2.25%) represent the chemicals, pharmaceuticals and cosmetics industry.

Table 2 presents the results of the hypothesis test. The statistical tests for the three groups (i.e., MEs in microcredit transactions with MFIs in the total sample, Cooperatives group and BMT group) failed to prove that the MEs in the retail trade sub-sector were harmed by the microcredit transactions in 2015. Hence, there is a high probability of rejecting the null hypothesis. As we can see in Table 2, the overall t-value equals -1,08. For the MEs in the Cooperatives group, the t-value is -1,55, and for the BMT group, the t-value equals -1,61. For the Others Group we accept the null hypothesis that the MEs were harmed in the transaction.

Table 1
Structure of respondent's retail trade business type

No.	Type of Business of MEs	Samples	
		Unit	%
1	Food, Beverages, and Tobacco	183	45.75
2	Textile, Garment, and Footwear	48	12.00
3	Cars, Motorcycles, Accessories, and Fuel	24	6.00
4	Household Appliances, Sports Equipment and Musical Instruments	23	5.75
5	Street Vendors	20	5.00
6	Chemicals, Pharmaceuticals, and Cosmetics	9	2.25
7	Others (Covering many sub sectors with few units)	93	23.25
	Total	400	100.00

Table 2
Hypothesis test results

No.	Statistical Parameters	Value for MEs in microcredit transactions with MFIs			
		Total	Cooperatives Group	BMT Group	Other Group
1	N	230	183	17	30
2	Mean	0,96	0,94	0,77	1,2
3	Standard Deviation	0.,52	0.,51	0.,61	0.,5
4	Z Score Max	2,7	3,44	2,51	2,62
5	T-value	-1,08	-1,55	-1,61	2,22
6	Significant level	0,14	0,061	0,063	0,017

The T-values of microcredit transactions indicate a rejection of the null hypothesis for cooperative and BMT groups. The results also show that the rejection is significant at the 5% level for all types of MEs. These findings are understandable, since Article 17 of the 1992 Law No. 25 concerning cooperatives, stipulates that members of cooperatives are both owners and users of their services. The results prove that the t-value for the cooperative group is -1,55; this illustrates that the movement of a price is less than the movement of a quantity. The same argument is valid for the BMT group (t-value equals -1.61). This is due to the characteristics that are similar to the cooperative group's characteristics. More specifically, the majority of BMTs are cooperatives and have a history in protecting micro and small enterprises from moneylenders (Suraya, 2012).

The findings are in line with the results in Mersland and Strom (2010), suggesting that there is no evidence of the occurrence of MFI mission drift (i.e., moving from social missions to profit missions), in relation to harming MEs. In contrast, this study has clearly concluded that MEs are harmed in microcredit transactions in the Other group of MFIs in Indonesia. This finding is in line with the results in Woller et al. (1999) and Woller (2002). The t-values are 2,22 (> 1). Therefore, transactions are harmed by MFIs in the Others group. As such, they pursue the sustainability mission more than the social mission.

The findings have implications for governments and regulators. The new rule (Law No. 1/2013) only allows MFIs, in the form of cooperatives or limited liability companies, with dominant ownership (60%) by the local government, to be considered appropriate from the perspective of the prevention of the possibility of MFIs being led away from their social missions. MFIs in the Others group (e.g., PNPM, Gold/Pawn Shops) need to migrate into the allowed entity in accordance with the new law.

The successful implementation of the new rules is expected to reduce the dependence of the poor on receiving loan from Pawn Shops. Ismail and Ahmad (1997) argue that this is indispensable for emergency loans. Both forms of

entities, cooperatives and limited liability companies, will facilitate the OJK to direct or supervise the MFI, so as not to harm the MEs, as the debtors of their loans. All MFIs, as the respondents of this study, which are cooperatives or BMTs, that generally have the same mission with the cooperative (Suraya, 2012), are believed to more easily adjust to the new rules. This is because the cooperative is a suggested establishment. This research has also shown that cooperatives do not experience mission drift from the social mission. This means that both establishments do not have a tendency to be more profit-oriented.

For the MEs, as a whole, whether they are the respondents of this study or not, the findings can generally be utilized in several ways. Firstly, concerning the transition of new rules in coaching MFIs today, MEs can avoid borrowing from MFIs in the Others group. They should prefer to borrow from MFIs in the form of cooperatives and BMTs in terms of seeking loans. Secondly, it is important to realize that the micro-credit transactions by MFIs need to be conducted in an equally profitable manner. More specifically, the percentage increase in the loan price does not exceed the percentage increase in the loan size, between the first loan and the second loan. This can be used as the measuring instrument.

The methodology and results of this study illustrate significant contributions to the extant literature. Firstly, by using ME as a unit of analysis, this study has enriched the research methodologies in confirming whether MEs in the retail trade sector in Indonesia are harmed in transactions with MFIs. Secondly, in line with previous studies in other countries, the hypothesis for MEs in transactions with the Other Group of MFIs in Indonesia through this study (i.e., MEs, as debtors, are harmed by MFIs, as creditors, that shift their mission to sustainability) have revealed the same results in a certain case, but not in other cases.

CONCLUSION

The primary objective of this study was to analyse the price and size of microcredit in the Indonesian retail trade sub-sector in 2015 to prove whether MEs, as debtors, are harmed in microcredit transactions with MFIs. The results strongly suggest that MEs, in transactions with the Others group of MFIs (e.g., PNPM, Gold Shops), are harmed. This is because the microcredit transactions experience a larger price movement than a quantity movement. For the majority of the sample, MEs in transactions with MFIs in Cooperatives and BMTs groups are not harmed, because the microcredit transactions do not have a larger price movement than a quantity movement. This implies that most of the Indonesian MEs can rely on MFIs, especially those in the form of cooperatives and BMTs, as microcredit lenders. However, MEs need to be cautious and/or avoid engaging with MFIs in the Others group.

This study recommends taking a supply-side approach, using MFI as a unit of analysis. This was not possible when the study was conducted, because this research

was conducted prior to the adoption of the new MFI law. The OJK MFI data is large enough to allow the same research to be conducted from the supply-side.

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Moderating Effect of Demographic Factors and Entrepreneurial Phase on the Relationship between Entrepreneurial Competencies and Innovation of ASEAN Entrepreneurs

Gandhi Pawitan[1]*, Maria Widyarini [1] and Catharina B. Nawangpalupi[2]

[1]Department of Business Administration, Ciumbuleuit 94, Bandung 40141, Indonesia
[2]Department of Industrial Engineering, Ciumbuleuit 94, Bandung 40141, Indonesia

ABSTRACT

This paper focuses on the relationship between entrepreneurs' competencies and innovation arguing that age and education play an important role in moderating this relationship. Data on entrepreneurial activities was analysed using Global Entrepreneurship Monitor – GEM framework. The GEM model identifies key elements of the relationship and interaction between entrepreneurship and economic growth. It defines entrepreneurship as consisting of three main components: entrepreneurial framework conditions, entrepreneurial competencies and aspirations, and the phase of entrepreneurial activities. This study uses the 2013 individual level data of ASEAN countries in the GEM consortium. Using multiple regression modelling, research findings indicate that competencies enhance innovation, higher education reduces innovation, early entrepreneurs are more innovative than established business owners, and young entrepreneurs are generally more innovative, but the interaction between age and competency would lead to stronger innovation.

Keywords: Entrepreneurial competency, entrepreneurial phase, GEM model, innovation, regression model

INTRODUCTION

Innovation refers to introducing a new idea in the product (services) and market. Governments adopt entrepreneurship and innovation as key drivers in achieving the wealth of the people because they create new business opportunities and new jobs. Koellinger (2008) raises a challenging question "*Why are some entrepreneurs more innovative than others?*" His hypotheses

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E-mail addresses:
gandhi_p@unpar.ac.id (Gandhi Pawitan)
widya@unpar.ac.id (Maria Widyarini)
katrin@unpar.ac.id (Catharina B. Nawangpalupi)
* Corresponding author

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indicated entrepreneurial competency, the phase of entrepreneurship activity, and also the age of entrepreneurs affect innovation. Hyvärinen (1990) states that innovation could be affected by an environment, and that changes in the environment create possibilities for innovation. The environment is either a direct or general condition which influences the innovativeness of the business. A direct environment consists of markets, consumer attitudes, and so on. The general environment includes technology and education.

The Southeast Asian region is strategic and fast economic growth region, as indicated by human development index, age dependency ratio, and life expectancy ratio. A regional study of entrepreneurship in Asean revealed some key figures, such as a positive societal attitude towards entrepreneurship and on average, two-thirds of people in the region consider becoming an entrepreneur as a good career choice, with moderate to high rate of entrepreneurship intention (Xavier, Guelich, Kew, Nawangpalupi, & Velasco, 2015). However, there is a sharp falling-off among the active entrepreneurs, as shown in Table 1. In the case of Indonesia, early-stage entrepreneurship activity, known as total early-stage entrepreneurship activity, (TEA), amounts to 14.2% (weighted). After three and half years running, their business is considered an established business at a rate of 11.9%.

Among ASEAN countries, Indonesia has a high TEA rate, together with the Philippines, Thailand, and Vietnam. Table 2 shows a description of TEA by age and gender. Among ASEAN countries, the entrepreneurship rate is high at the age of 25-35 and 35-44, except for Malaysia (45-54). Women play a prominent role in the early entrepreneurship rate in Indonesia, Malaysia, the Philippines, and Vietnam.

These statistics indicate a potential entrepreneurship development in the region and have attracted policy makers in formulating strategies and policies for boosting the region's economic development. One indicator of a country's economic development is enterprise growth,

Table 1
Some key figures of entrepreneurship in the ASEAN region (% of adult population), GEM 2014

Country	Nascent entrepreneurship rate	New business ownership	Early-stage entrepreneurship activity – TEA	Established business rate	Discontinuation of businesses
Indonesia	4.4	10.1	14.2	11.9	4.2
Malaysia	1.4	4.6	5.9	8.5	2.0
Philippines	8.2	10.5	18.4	6.2	12.6
Singapore	6.4	4.8	11.0	2.9	2.4
Thailand	7.6	16.7	23.3	38.1	4.2
Vietnam	2.0	13.3	15.3	22.2	3.6
ASEAN	5.0	10.0	14.7	14.1	4.8

Sources: Xavier et al. (2015, p. 36)

Table 2
TEA rate by age and gender (% of adult population), GEM 2014

Country	Age (years)					Gender	
	18-24	25-35	35-44	45-54	55-64	Male	Female
Indonesia	9.8	16.7	15.8	14.4	10.0	13.2	15.2
Malaysia	3.9	7.7	5.5	8.3	2.3	5.1	6.8
Philippines	12.0	19.4	20.1	19.2	25.1	15.9	20.8
Singapore	10.3	13.4	14.1	8.4	7.4	14.8	7.2
Thailand	14.6	28.9	26.3	22.1	19.4	24.5	22.1
Vietnam	12.0	22.1	15.0	12.9	8.6	15.1	15.5
ASEAN	10.4	18.1	16.1	14.2	12.2	14.8	14.6

Sources: Xavier et al. (2015, p. 36)

and this becomes a focus in entrepreneurship research, with some aspects that affect entrepreneurs, such as competency, demographic factors, and innovation. Xavier et al. (2015) defined enterprise growth as expectation of generating jobs in the next annual periods. Table 3 shows the percentage of entrepreneurs of established business who expect to create jobs in the following five years. The result is not encouraging since the majority created no jobs, but at least the entrepreneur expects to create 1-5 jobs in the following five years.

Entrepreneurship and innovation have become key drivers that boost economic development of the country, as indicated by their competitiveness level (Carayannis, Samara, & Bakouros, 2015). Entrepreneurial competency and innovation are believed to be an essential combination in creating a growth of the enterprises (Georgellis, Joyce, & Woods, 2000; Man, Lau, & Snape, 2008; Mitchelmore, Rowley, & Shiu, 2014, p. 590). The Southeast Asian region shows a great potential, either geographically or socio-economically (Petri, Plummer, &

Table 3
Job growth expectations over the next five years in ASEAN-6 countries, GEM 2014

Country	No jobs	1-5 jobs	6-19 jobs	20+jobs
Indonesia	65.6	30.0	3.8	06
Malaysia	41.9	55.6	2.5	0.0
Philippines	56.1	37.9	5.1	0.9
Singapore	38.1	26.1	19.3	16.5
Thailand	72.1	21.2	5.7	1.0
Vietnam	50.0	42.5	5.9	1.6
ASEAN	54.0	35.6	7.0	3.4

Note: % of entrepreneurs of established businesses
Sources: Xavier et al. (2015, p. 43)

Zhai, 2012). The region is strategically located between South and North Asian region, including the Pacific countries. It also comprises a large market, with a high proportion of its population being in their productive age, indicating a potential for entrepreneurship.

This research focuses on entrepreneurs in the South East Asian region as the population target. The targets of inference are two demographic aspects, namely education and the age of the entrepreneur, and two essential entrepreneurial characteristics, namely competencies and innovation. The basic model was developed based on Cheraghi (2013), and Schott and Sedaghat (2014), as well as Mitchelmore and Rowley (2010). Cheraghi (2013) examined the prominent role of women in entrepreneurial activity, through developing their competence and innovation. Meanwhile, Schott and Sedaghat (2014) defined two important factors that affect entrepreneurial outcomes, namely entrepreneurial behavioural and society's institutions. Adopting Cheraghi's and the Schott and Sedaghat model, we define innovation as one of entrepreneurial outcomes, and competence and demographic factors as entrepreneurial behavioural. The entrepreneurial phase is considered in the model to capture the variability of entrepreneurs in the region. Meanwhile, society's institutions are assumed to be fixed and do not affect the relationships among factors. Mitchelmore and Rowley (2010) state that the entrepreneurs who acquired better competencies tend to produce a highly innovative product. Moreover, a newly established enterprise shows better innovative products compared with others. Hence the proposed model is shown in Figure 1.

Based on Figure 1, this study explains interdependent (moderating) relationships among the factors that affect innovation. In addition, it provides an understanding of the innovation process in a different phase of entrepreneurial activities, which suggests a different action of entrepreneurship development.

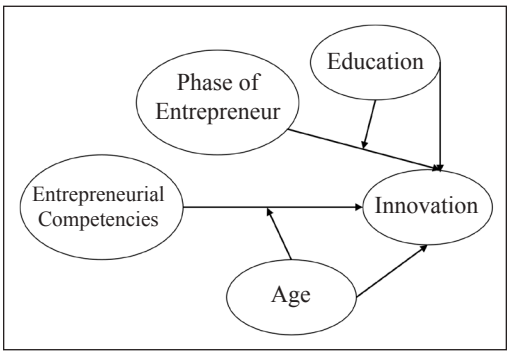

Figure 1. Basic model

This paper is organised into five sections, starting with the introduction, which provides the background and research model. The next section is a theoretical background and hypotheses, which discusses some key researches and literature on the topics, followed by hypotheses development. The third part presents the research methodology, which defines the data being used and how the research model is employed. Results and discussion make up the following section, and the conclusion forms the last section.

Theoretical Background and Hypotheses

Globalisation and liberalisation of the national market have created stiff competition between countries. This has led to the development of regional trade agreement like ASEAN Free Trade Area (AFTA). Petri et al. (2012) states that ASEAN is one of the strategic regional economic models studied extensively. Regional trade agreements affect entire economic sectors of the countries, and the small medium enterprise (SME) will be vulnerable if they are not supported by the state. Schwab (2015) indicates that productivity and innovativeness are key to achieving competitiveness. Schwab's study revealed that the more innovative countries are the most competitive ones.

Lindh and Thorgren (2016) observe that entrepreneurship education played a role in cultivating entrepreneurial culture, knowledge, and spirit. It is considered key to developing and stimulating the entrepreneurial process, and it provides tools for starting new ventures. Other studies also emphasised the importance of entrepreneurship education, such as Fayolle, Gailly and Lassas-Clerc (2006), Urban (2006), Ekpoh and Edet (2011), among others.

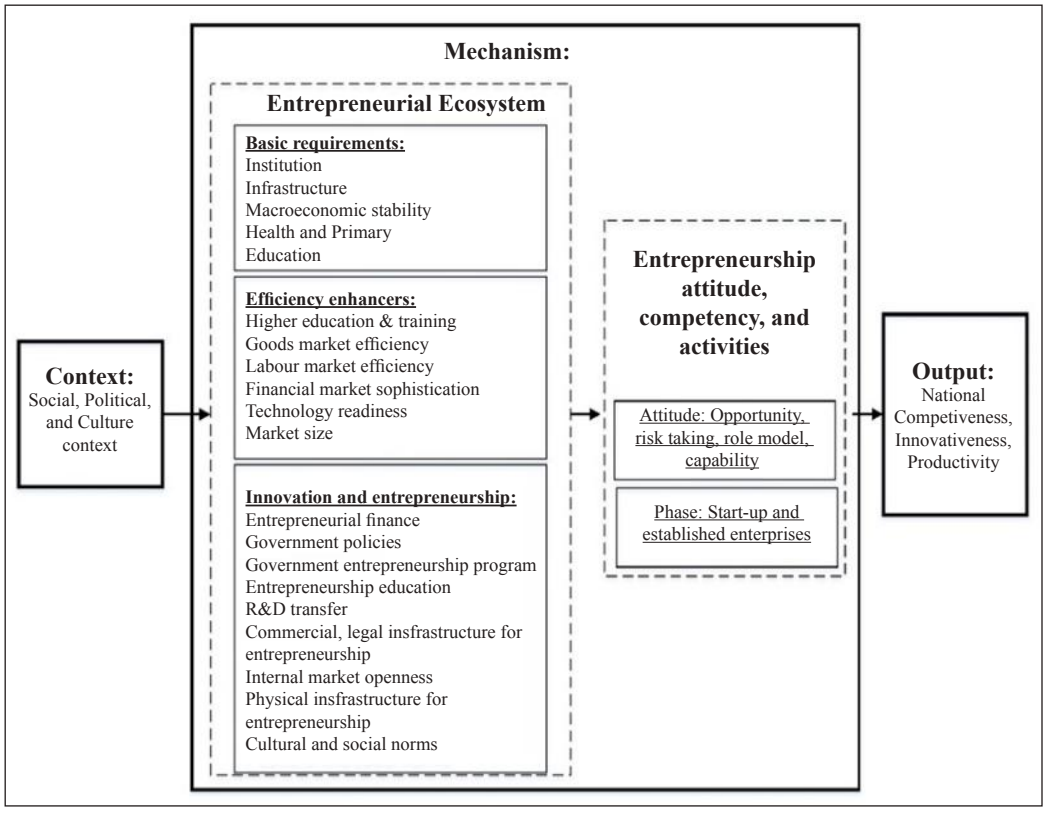

Figure 2. The GEM model of entrepreneurship

The GEM Entrepreneurial Model

The GEM model of entrepreneurship shows that the entrepreneurship ecosystem and activities are mechanisms in the social, political, and cultural context (Figure 2). The output were national competitiveness, innovativeness, and productivity, which may be represented by job creation, social and political development, and innovation (Levie & Autio, 2008; Ramos-Rodríguez, Martínez-Fierro, Medina-Garrido, & Ruiz-Navarro, 2015). Figure 3 shows in detail that the phase of entrepreneurship, initially grows in its intention to develop early activity (nascent and up to 3.5 years) ventures, and finally established business (Kelley, Singer, & Herrington, 2016). This is explained within the framework of AEC, and which is discussed in the following section.

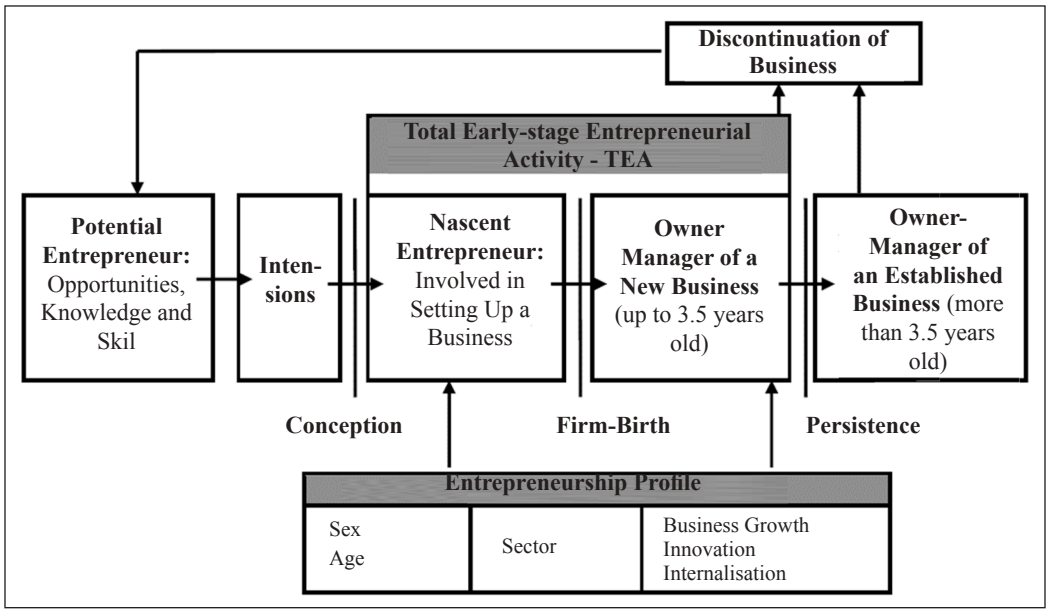

Figure 3. Phase of entrepreneur activity (Nawangpalupi et al., 2015)

Asean Economic Community Framework

The Asean was initially considered to be a political association, and it gradually began to focus on regional economic development, which led to the formation of Asean Economic Community - AEC in 2015 (Jetin & Mikic, 2016). The AEC led to the development of regional market consisting of 600 million peoples, in the 10 countries - Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam. Several attractive characteristics for investors have been recognized, such as demographic profiles, rich in natural resources, low-cost labour, and entrepreneurial competency.

According to Austria (2011) AEC is characterised by a single market and production, free movement of goods,

services, investment, capital, and skilled labour. By transforming ASEAN into a single market and production base, the AEC enforces the competitiveness and connectivity of the region as a whole.

Entrepreneurial Competencies

Wennekers and Thurik (1999) define entrepreneurship at the micro level as entrepreneurial traits or attitude. It refers to a willingness to challenge risks and entrepreneurial activity, which indicates an effort in venturing into a new business derived from a new idea. Entrepreneurship is measured in terms of its attitude and activity and defined in terms of entrepreneurial performance. Hence, logically it makes sense that not all entrepreneurs are capable of spearheading a successful high-growth business venture. Bird (1995) in Mitchelmore and Rowley (2010) define entrepreneurial competencies as individual characteristics performed with a specific kind of knowledge, motives, traits, self-images, social roles, skill, and ability of creating or transforming ventures into a better achievement. Robbins and Judge (2018) identify some personal entrepreneurial competencies such as personal skills, initiative, ambition, adaptability and flexibility, the willingness to take risk, and the willingness to learn (in agreement with Kelley et al., 2016).

Entrepreneurial Competencies and Innovation

Mitchelmore et al. (2014) found that acquiring higher entrepreneurial competencies are important for achieving business growth. The study was focused on the women-led SMEs in England and Wales. Marcotte (2014) confirmed the importance of the relationship between entrepreneurship and innovation. Mitchelmore and Rowley (2010) suggest that a higher level of competencies create a more innovative product.

Demographic Factors as Moderators

The population aged 18-64 represents the productive age, and is known as the demographic dividend, which was first proposed by Bloom, Canning, and Sevilla (2003). Bloom et al. (2003) studied the changes in population structures based on economic growth. They argued that economic behaviour and needs were varied at different stages of life, hence the changes in a country's age structure have a significant effect on its economic performance. For the developing countries, this would lead to a population explosion of young people. This will provide opportunities for economic growth by gaining better competencies through education. Research has indicated that there is a significant relationship between education and the career intention to become an entrepreneur (Wilson, Kickul, & Marlino, 2007). Education also provides individuals with entrepreneurial competencies, behaviour, and motivation (Solesvik, 2013).

Hypothesis Development

The hypothesis of this study, based on Figure 1 and theories found in literature review, is that innovation is developed by

entrepreneurial competency, and that it depends on the phase of entrepreneurial activity and demographic factors, namely age and education. The analysis was based on three working hypotheses.

H1: Innovation is affected by entrepreneurial competency, the phase of entrepreneurship, education, and the age of entrepreneurs. Singer, Amorós, and Arreola (2015) report that entrepreneurship supports socio-economic development of a country in the social, cultural, and political context. This socio-economic development includes job creation, innovation, and the creation of social values. Individuals in a relationship to their environment or community, consciously express and perform their activity to gain a better life or status, either economically or politically. It is believed that education leads to the acquisition of skills, drive and courage and will promote employment for the self and others as well (Ekpoh & Edet, 2011). Thus, entrepreneurial education is considered to be an effective strategy towards innovation.

H2: Entrepreneurial competency varies among their ages that affect innovation. According to Morris, Webb, Fu and Singhal (2013), competency refers to knowledge, skills, attitudes, values, and behavior in performing a particular task successfully. Entrepreneurial competency refers to individual abilities that are necessary in performing successful entrepreneurship. Mohsein, Halim, Ahmad and Farhana (2017) found that certain entrepreneurial competencies influence innovativeness. However, the influence of demographic characteristics on performance of the entrepreneurs, was reported by Neumeyer and Santos (2018), and Mitchelmore and Rowley (2010). Hence a mechanism of achieving innovativeness by entrepreneurial competency is hypothesised, regarding their age. The proposed model tackles issues of the entrepreneurs' innovativeness regarding their phase (start-up or established entrepreneur) and competence. Thus, following hypothesis is developed.

H3: The phase of entrepreneurship varies based on levels of educations that affect innovation. Lindh and Thorgren (2016) state that entrepreneurship education is considered to be a strategic effort in developing an entrepreneurial culture and transferring entrepreneurial knowledge to young people.

METHODS

Data and Indicators

The GEM data was used to confirm the hypotheses, covering the ASEAN region, with six countries contributing to Global Entrepreneurship Monitor (GEM) survey in 2013. The GEM survey is randomly done from the adult population aged between 18 and 64 years. Data collection is organised and coordinated by Global Entrepreneurship Research Association - GERA, which has responsibility in cleaning and harmonising the global data. The GERA provides a standard questionnaire for every country, sets a standard requirement to conduct a survey,

and evaluates the survey process and result (Reynolds et al., 2005). Levie and Autio (2008) described and defined a theoretical grounding of the GEM questionnaire, the validity and reliability was defined carefully, to ensure applicability in each country and the result is scientifically approved.

Standard requirement in conducting the survey is controlled by GERA, namely minimum sample size is 2000 respondents for each country, and a proper random sampling design, such as multistage sampling design. The Global 2013 survey result can be found in Amorós and Bosma (2014). Table 4 shows the number of entrepreneurs in the six Asean countries.

Entrepreneurial competencies were measured based on the following indicators:

(a) Perceived capabilities – those who believe they have the required skills and knowledge to start a business.

(b) Perceived opportunities – those who see good opportunities to start a firm in the area where they live.

(c) The fear of failure rate – those who perceive good opportunities to start a business who indicate that fear of failure would prevent them from setting up a business.

(d) The entrepreneurial intention - who are latent entrepreneurs and who intend to start a business within three years.

(e) The known start-up entrepreneurial rate - who personally knows someone who started a business in the past two years.

Each indicator is scaled using the binary option, Yes/No. The competency index (CI) was generated by applying the factor analysis to the indicators, by giving weight to each indicator based on the rotated values from the principal component.

Indicators of Phase of Entrepreneurship Activity

The phase of entrepreneurship activity (PHASE) is a dummy variable and defined based on Figure 3. The dummy is 0=if in early-stage entrepreneurial activity, which includes the start-up and new business up to 3.5 years of business operation, and 1 = if involved or owned in the established business operation within 3.5 years and more. The 3.5 years threshold adheres to definition of the phase of entrepreneurship in Kelley et al. (2016), which were also consistent with others, e.g. Tambunan (2009), Levie and Autio (2008), and Reynolds et al. (2005).

Table 4
Entrepreneurs in GEM data 2013 for Asean region

Country	Malay	Indo	Phil	Sing	Thai	Viet	Total
Number of Entrepreneurs	248	2126	683	300	1068	652	5077
%	4.9	41.9	13.5	5.9	21.0	12.9	

Source: GEM data 2013
Indicators of entrepreneurial competencies

Indicators of Innovation

Innovation is measured by three indicators, namely competitiveness level, new product development for new customer, and new product development with new technology. Based on Amorós and Bosma (2014), the competitiveness level was measured by "*Right now, are there many, few, or no other businesses offering the same products or services to your potential customers?*" with the scale 1 = many, 2 = few, 3 = no. The new product development for new customer was measured by "*Will all, some, or none of your potential customers consider this product or service new and unfamiliar?"* with the scale 1 = all, 2 = some, 3 = none. And, the new product development with new technology is measured by "*Have the technologies or procedures required for this product or service been available for less than a year, or between one to five years, or longer than five years?*" with the scale 1 = less than a year, 2 = between 1-5 years, and 3 = longer than 5 years. The innovation index (II) is generated by summation of the three indicators, values from 3 (low level) up to 9 (higher level). The index shows a level of entrepreneurs' effort in the development of competitiveness, new market, and new product.

Indicators of Education

Education was measured by the number of years of schooling, (1, 5, 8, 12, 14, 17, 20), EDU. This variable indicates the duration of schooling by the respondent; the longer this duration, the higher the level of education.

Indicator of Age

Age was measured in years, which indicated the age of entrepreneurs, which is between 18-64 years old.

Analysis

Based on Schott and Sedaghat (2014), the regression analysis was applied to two models, consisting of a basic model (Eq. 1) and an interaction model (Eq. 2), as follows:

$$II = \alpha + \beta_1 AGE + \beta_2 EDU + \beta_3\ PHASE + \beta_4\ CI + \varepsilon \quad [1]$$

$$II = \alpha^* + \beta_1^* AGE + \beta_2^* EDU + \beta_3^*\ PHASE + \beta_4^* PHASEDU + \beta_5^*\ CI \cdot + +\beta_6^* CIAGE + \varepsilon \quad [2]$$

where CIAGE is the interaction terms of CI×AGE and PHASEDU is the interaction of PHASE×EDU. An estimation of the parameters was made using SPSS software.

RESULTS AND DISCUSSIONS

The profile of the entrepreneurs, including sex and age, and descriptive statistics of the variables are presented in Table 5.

The first result is a basic model that excludes the interaction term, shown in Table 6. Table 6B indicates that the basic model is significant and the R-square=5.4%

(***H1*** is accepted). Although the R-square was small, the model is considered fit, since the hypothesis test is very significant (see Table 6B). This result indicates that innovation (II) is affected by phase, entrepreneurial competency (CI), age (AGE) and education (EDU). From Table 6C, we can see that the significance of the coefficient is almost zero indicated that all predictors have an effect on the innovation.

Table 5
Descriptive statistics of variables

Variables	Description	Mean	Std. Deviation
Entrepreneurs Profile			
Sex	Male (50.9%), Female (49.1%)		
Variables of the models			
II	innovation index (3-9)	4.75	1.22
CI	competency index (0-4)	2.65	1.14
EDU	Duration of education in year (1-20)	11.33	4.12
AGE	Age of entrepreneurs in year (18-64)	39.72	11.11
PHASE	Phase of entrepreneurship activity, 0 = early (21.2%), 1 = established (78.8%)		

Source: SPSS output

Table 6
Estimation of parameters basic model (Eq. 1)

A. Basic Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Basic model	.231[a]	.054	.053	1.193

B. ANOVA [a]

Basic Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	377.038	4	94.259	66.274	.000[b]
Residual	6661.899	4684	1.422		
Total	7038.937	4688			

a. Dependent Variable: II

b. Predictors: (Constant), EDU, PHASE, CI, AGE

C. Coefficients

Basic Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.704	0.099		57.413	0.0
PHASE	-0.499	0.044	-0.146	-10.172	0.0
CI	0.169	0.018	0.138	9.637	0.0
AGE	-0.010	0.002	-0.094	-6.351	0.0
EDU	-0.016	0.004	-0.052	-3.524	0.0

Source: SPSS Output

From Table 6, the standardised coefficients of PHASE, AGE, and EDU, consecutively have negative effects on the innovation. The negative effect of the predictors has some implications: (a) the early phase of entrepreneurial activity is more innovative; (b) the younger entrepreneur is more innovative; and (c) the lower educated entrepreneur is more innovative. On the other hand, the competency index has a positive impact on the innovation, as indicated by the positive standardised beta coefficient. The higher the competent entrepreneur's results, the more innovative the entrepreneur.

Similar with previous results, it can be seen in the interaction model (Table 7) that the regression is significant (Sig. value is 0). The R-square model is 5.7%. The result of the interaction model (Table 7) shows the significance of the interaction term, which is formed in PHASEDU and CIAGE. The significance of the PHASEDU coefficient indicates an interaction between the phase of entrepreneurship (PHASE) and the education level (EDUC). Thus, ***H3*** is accepted. Similarly, the significance of CIAGE coefficients also indicates that the entrepreneurial competency (CI) has an interaction effect on the age of entrepreneurs (AGE). Hence, it proves that ***H2*** is also accepted.

The results and reference to the basic model (Eq. 1 and Table 6), show that the effect of the education level or the phase alone has a negative effect on the innovation level in entrepreneurship. However, the interaction between the phase of entrepreneurship and the education level (based on the interaction model in Eq. 2 and Table 7) has a positive impact on the innovation level. This indicates that stronger innovations among firms cannot be built by education level alone, but the education level and the different phase of entrepreneurship have an effect on firm ability to innovate.

Thus, improvement in the educational system is vital for entrepreneurs to attain a higher innovation level (or to be able to create new products and services). As a result, it is suggested policies and programmes are based on research and development (R&D) for sustainable business.

The basic model shows age of the entrepreneurs has a negative impact on the innovation level. Table 7 however, shows the interaction of the competency index and the age of entrepreneurs can increase innovation. This is shown by the higher standardised beta coefficient of the interaction model of the competency index and the age of entrepreneurs. It implies that entrepreneurs who have a higher competency index and are more mature tend to exercise innovation better. The findings corroborate with earlier studies that innovating the business is a product of business competencies (Mohsein et al., 2017), while competencies are influenced by entrepreneurial education (Ekpoh & Edet, 2011; Lindh & Thorgren, 2016). Moghavvemi and Salleh (2014) confirm that entrepreneurs who do not have sufficient skills and capabilities regarding the new technology tend to have lower intention

Table 7
Estimation of parameters interaction model (Eq. 2)

A. Interaction Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Interaction model	.238	.057	.056	1.19076

B. ANOVA

Interaction Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	400.240	6	66.707	47.045	.000
Residual	6638.698	4682	1.418		
Total	7038.937	4688			

a. Dependent Variable: II

b. Predictors: (Constant), CIAGE, PHASEDU, AGE, EDU, PHASE, CI

C. Coefficients

Interaction Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	6.003	.140		42.817	.000
AGE	-.010	.002	-.092	-6.225	.000
EDU	-.041	.009	-.136	-4.367	.000
PHASE	-.825	.132	-.268	-6.256	.000
PHASEDU	**.031**	**.010**	**.146**	**3.023**	**.003**
CI	.002	.066	.001	.027	.978
CIAGE	**.004**	**.002**	**.141**	**2.609**	**.009**

Source: SPSS Output

to innovate. Thus, developing skills and competencies is important for innovation. Competencies usually develop over time, which implies that maturity of a person corresponds with competency in problem solving. This indicates that the maturity and competency index has a positive relationship, which supports the hypothesis of this study.

However, younger entrepreneurs tend to have a higher ability to innovate. This finding also confirms that of a previous study that entrepreneurial innovation is influenced by age (Schott & Sedaghat, 2014). Thus, innovation skills should be developed at a younger age. However, while the maturity and competency index improve innovation and age alone improves innovation, intervention is needed to develop competencies among younger entrepreneurs.

Based on these propositions and findings, programs are recommended to support the development of youth entrepreneurs' capabilities to develop and grow the business so that they can innovate better. Koellinger (2008) found that innovation among start-ups is linked to more developed educational systems. Thus, proper entrepreneurial education and training would encourage better innovation for young entrepreneurs.

Studies have suggested that courses in entrepreneurship improve entrepreneurial skills (Thandi & Sharma, 2004), encouraging graduates to take on the entrepreneurial role more confidently (Garavan & O'Cinneide, 1994) and increase knowledge in the entrepreneurial stages (Ekpoh & Edet, 2011). Therefore, relevant programmes are vital based on the phases of entrepreneurship and age of entrepreneurs. Programmes in education and training that focus more on the development of new products, service and technology are important for those who are mature in entrepreneurship (or established businesses). Also, younger entrepreneurs need to be equipped with higher competencies to be able to innovate better. Improving entrepreneurial education requires strong roles to be played by business enablers, such as business consultants or coaches and educational institutions as well as the government (which is also the as policymaker).

CONCLUSION

The study shows that the competency index of ASEAN entrepreneurs has a significant relationship to their ability to develop new products or new markets and new technology. Higher education lowers innovation but it increases innovation in established firms. Moreover, young entrepreneurs are generally more innovative but the combination between of age and competency index would create stronger innovation. While innovation is necessary for strengthening a country's competitiveness, this study suggests programmes for innovation, mainly focusing on youths and those who have attained high competencies. Some recommendations for business enablers and the government are made so they can improve practices and capacity building for entrepreneurship education and training to create more innovative entrepreneurs.

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Entrepreneurial Orientation and Strategic Initiatives in Family Business Groups: The Role of Corporate Centres and Family Influence

Okder Pendrian*, Kresnohadi Ariyoto Karnen, Riani Rachmawati and Ratih Dyah Kusumastuti

Department of Management, Faculty of Economics & Business, Universitas Indonesia, Kampus UI Depok, 16424 Depok, Indonesia

ABSTRACT

Strategic management practices and their influence on entrepreneurship in family businesses are receiving increasing attention from scholars. Yet, few studies have hitherto investigated such practices in the context of large family business groups with unique characteristics, i.e. the presence of a corporate centre that handles corporate strategy in a business group and the presence of family management that affects strategic decision-making processes concerning entrepreneurship and innovation, both at the corporate level and the business unit level. This paper aims to explore and analyse the influence of corporate parenting style of corporate centres in strategic planning, strategic control and financial control as well as family influence factors on business unit entrepreneurial orientation (EO) and business unit strategic initiatives, which in turn affect business unit performance. The study applies a structural equation model (SEM) to a sample of 106 respondents who are CEOs and senior management officers in business units managed by 16 corporate centres of family business groups in Indonesia. The results suggest that the presence of corporate centres and family influence affect business unit performance through influencing EO and strategic initiatives. The corporate parenting role played by corporate centres differentially influences EO and strategic initiatives in business units. Moreover, family influence has a positive impact on EO and business units' strategic initiatives. At the business unit level, it is found that EO does not exhibit a direct relationship with performance, but its influence on performance is positive whenever EO has been implemented in the form of strategic initiatives.

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E-mail addresses:
okder1973@gmail.com/okder.pendrian51@ui.ac.id (Okder Pendrian)
kresnohadi14@yahoo.com (Kresnohadi Ariyoto Karnen)
riani.rachmawati@ui.ac.id (Riani Rachmawati)
ratih.dyah@ui.ac.id (Ratih Dyah Kusumastuti)
* Corresponding author

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INTRODUCTION

A family business group is a business entity consisting of several affiliated companies that are diversified and interconnected by multiple common factors such as ownership structure, intercompany transactions within the group and the presence of social relationships such as family connections and friendship (Bruton, & Hoskisson, 2007; Khanna & Rivkin, 2001; Yiu, Lu, Bruton, & Hoskisson, 2007). In recent years, family business groups have been able to thrive in increasingly competitive environments by entering into various industries (Yabushita & Suehiro, 2014). In order to sustain such growth, a family business group should be able to adapt its strategies and modernise its management style to overcome management resource limitations (Yabushita & Suehiro, 2014); it also needs to have a corporate strategy that can drive business units to conduct entrepreneurial activities. Previous studies show that entrepreneurial activities in business units play key roles in determining the success of a multi-business company (Zahra, Dharwadkar, & George, 2000). A business unit's entrepreneurial activities represent the implementation of EO and are positively connected to the company's performance (Lumpkin & Dess, 1996; Zahra, Jennings, & Kuratko, 1999).

In multi-business companies, it is commonly observed that the management of corporate strategy in family business groups is run by a corporate centre (Ramachandran, Manikandan, & Pant, 2013). According to Zahra, Dharwadkar and George (2000), the corporate centre context (comprising business unit mandates and the control system) is an important determinant of business unit entrepreneurship. On the other hand, family business group management has unique characteristics that are marked by family ownership structure and family management (Chung, 2012), wherein family influence becomes one of the determining factors in strategic decision making (Lindow, Stubner, & Wulf, 2010), including influencing the EO of the family business.

In Indonesia, family business groups are one of the main economic actors that play a significant role in the growth of the national economy (Hanani, 2006). Between 2006–2017, these groups contributed about 40% of the top listed stocks in the Indonesia Stock Exchange, as is the case elsewhere in Southeast Asia such as Malaysia, the Philippines, Singapore, Thailand and Vietnam (Vestring & Felenbok, 2017). Based on a survey conducted by Pricewaterhouse Coopers (PwC) in 2014, it was found that about 60% of family businesses in Indonesia are managed by second and third generation family members, indicating that many family business groups in that country have successfully passed through the critical development stage; elsewhere it is commonly observed that family businesses fail to survive beyond the second or third generation. In order to continue to grow sustainably, family business groups in Indonesia are required to adapt faster,

innovate faster, and act more professionally in running their operations (PwC, 2014). In this context, the role of the corporate centre becomes crucial in formulating and executing corporate strategy that can encourage entrepreneurship and innovation initiatives in business units.

Studies on the roles of corporate centres that increase added value (including increasing EO) for business units tended to be conducted using multinational companies as the unit of analysis (Menz, Kunisch, & Collis, 2013; Zahra, Dharwadkar, & George, 2000) and have been limited in terms of testing the roles in family business groups. Moreover, studies on the presence of family influence on EO in family businesses have also been carried out, but these are mostly on single companies (Chirico, Ireland, & Sirmon, 2011; Nordqvist & Zellweger, 2010; Short, Payne, Brigham, Lumkin, & Broberg, 2009). Studies that investigate family influence on EO in business units of family business groups are lacking. Therefore, this research gap will be addressed in this study and provide answers to salient research questions such as whether the presence of a corporate centre and family influence affects entrepreneurial level in terms of EO and strategic initiatives of business units.

This study has important academic and practical implications as it assists in understanding how much emphasis is placed on corporate parenting by corporate centres, leading to increased levels of business EO and strategic initiatives. Business leaders in corporate centres will be able to discern which strategic actions are necessary to improve the business unit's propensity to be innovative, to take risks when confronted by uncertainty, and to be proactive vis-a-vis marketplace opportunities.

LITERATURE REVIEW

Corporate Parenting Role

According to Ramachandran, Manikandan and Pant (2013), a family business group is managed by a corporate centre that serves its role through strategy work and identity work activities. Strategy work is performed by the corporate centre by constructing and developing strategic frames of business units, while identity work involves managing the brand, identity and group reputation as a whole. Goold and Campbell (1987), and Goold, Campbell and Alexander (1994) developed the concept of corporate parenting role, that is, roles played by the corporate centre in managing business units by executing strategic management practice approaches in terms of planning process (planning influence) and controlling process (control influence). There are three approaches which companies tend to follow: strategic planning, strategic control and financial control.

Strategic planning is an approach in which the setting or strategic formulation of business units is administered top-down by the corporate centre while the business units are focused on implementing these strategies. On the other hand, in the financial control approach, business units are treated as stand-alone units which formulate their own strategies and are tightly controlled by the corporate centre with an emphasis

on short-term financial performance. Meanwhile, strategic control approaches are executed by a corporate centre that strives for a balance between the strategic planning and financial control approaches, wherein strategy formulation is performed by business units to be reviewed and approved by the corporate centre (bottom up).

Entrepreneurial Orientation (EO) and Strategic Initiatives in Family Businesses

An entrepreneurial company is one that 'engages in product market innovation, undertakes somewhat risky ventures, and is first to come up with proactive, innovations, beating competitor to the punch' (Miller, 1983). Therefore, EO is a concept developed at the corporate level, reflecting the company's tendencies towards product innovation, pro-activeness and risk-taking behaviours (Covin & Slevin, 1991; Wiklund & Shepherd, 2003). Product innovation is defined as a firm's propensity to engage in and support creativity and experimentation, thereby leading to the creation of new products or the modification of existing ones (Zahra & Covin, 1995). Pro-activeness is a forward-looking perspective characterised by the pursuit and anticipation of future wants and needs in the marketplace. Risk taking characterises entrepreneurial behaviour in which both the cost of failure and the potential returns are high (Lumpkin & Dess, 1996).

Business unit entrepreneurship plays an important role in the success of the entire multi-business company (Zahra, Dharwadkar, & George, 2000). Therefore, the role of the head of division or manager in the business unit changes significantly from a passive role based on the directives of the corporate centre into a more active role as an aggressive entrepreneur (Barlett & Ghosal, 1997). Furthermore, Schmid, Dzedek and Lehre (2014) argue that the emergence of strategic initiatives of innovation and entrepreneurial activity in business units are largely determined by the capabilities of the management team in the business unit, such as personal motivation, individual skills and expertise and individual entrepreneurial orientation.

In the context of multi-business companies (including family business groups), business unit strategic initiatives represent implementations of EO. A business unit's strategic initiative is defined as an 'entrepreneurial undertaking that allows the business unit to tap into new opportunities' outside of the corporate centre (Ambos & Birkinshaw, 2010), often capturing autonomous 'under the radar' (Delany, 2000) development of products and technologies by business unit operations (Birkinshaw, 1997). Furthermore, business unit strategic initiatives are essentially an entrepreneurial process, beginning with the identification of an opportunity and culminating in the commitment of resources to that opportunity (Birkinshaw, 1997).

Literature review on entrepreneurship in family businesses reveals debates among researchers regarding family influence on EO, wherein there are two opposite perspectives (Nordqvist & Zellweger,

2010; Short et al., 2009). Some suggest that a family business is unique and is conducive to entrepreneurial development (Aldrich & Cliff, 2003; Chirico, Ireland, & Sirmon, 2011), while others posit that family involvement tends to hinder entrepreneurial programmes (Chirico & Nordqvist, 2010; Salvato, Chirico, & Sharma, 2010).

Relationship between Corporate Parenting Role and Business Unit Entrepreneurship in Family Businesses

By combining the corporate centre framework of Ramachandran, Manikandan and Pant (2013), and Goold, Campbell and Alexander (1994) with the strategic entrepreneurship concept (input-process-output) of Hitt, Ireland and Sirmon (2011), this study identified seven variables which define the corporate parenting role: strategic planning, strategic control, financial control, family influence, EO, strategic initiative programmes and business unit performance. The EO level and strategic initiative programmes at the business unit level of family business groups are influenced by the presence of the corporate centre, specifically in terms of defining and operationalising the corporate parenting role and family influence. The research model used herein is depicted in Figure 1.

The strategic planning approach is a corporate centre approach for strategic management through involvement in formulation, strategy and control while flexibly observing operational performance based on set strategic plans (Goold, Campbell, & Alexander, 1994; Goold & Luchs, 1996). This approach is expected to enhance entrepreneurial intensity in

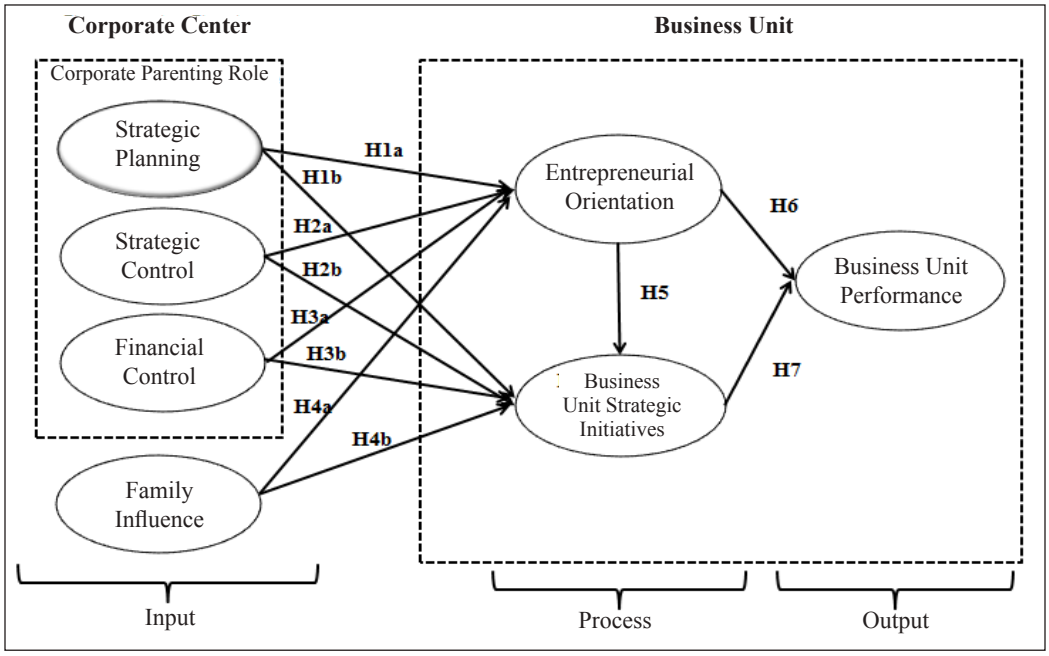

Figure 1. Proposed research model

business units for two key reasons. First, the budget and targets for business units defined by the corporate centre tend to be relatively flexible, and reviewed within the context of strategic as well as financial performance (Goold & Campbell, 1987); this can encourage entrepreneurial behaviour and innovation within the business unit. Second, interaction among business units within a multi-business company enables knowledge-exchange among business units, which, in turn, can increase entrepreneurial intensity and innovation (Hitt, Hoskisson, & Kim, 1997). Accordingly, the following hypotheses are developed:

Hypothesis 1a *The strategic planning approach pursued by a corporate centre has a positive effect on business units' entrepreneurial orientation.*

Hypothesis 1b *The strategic planning approach pursued by a corporate centre has a positive effect on business units' strategic initiatives.*

The strategic control approach is a corporate centre approach for strategic management which involves providing strategic directives to business units and coordinating the management of strategic organisational functions, along with exerting control on business units while observing strategic performance achievements (Goold, Campbell, & Alexander, 1994; Goold & Luchs, 1996). Barringer and Bluedorn (1999) explain that strategic control provides support and recognition to creativity and opportunity-seeking processes through innovation (as a form of strategic initiatives) within the organisation. When strategic control is implemented, it will lead business units' managers towards risk taking actions in new ventures to confront uncertainties in the business environment (Hitt, Hoskisson, & Ireland, 1990; Hitt, Hoskisson, Johnson, & Moesel, 1996). Therefore, the following related hypotheses are proposed:

Hypothesis 2a *The strategic control approach pursued by a corporate centre has a positive effect on business units' entrepreneurial orientation.*

Hypothesis 2b *The strategic control approach pursued by a corporate centre has a positive effect on business units' strategic initiatives.*

A corporate centre implementing financial control always monitors and evaluates business units' performance based on their quantitative objectives and targets judged against prescribed benchmarks (Goold & Campbell, 1987; Hitt, Hoskisson, & Ireland, 1990). This can create a disproportionate focus on meeting targets to the detriment of innovation and business development which, in turn, indicates a suboptimal level of EO in business units (Zahra, Dharwadkar, & George, 2000). Based on the foregoing, the following hypotheses are proposed:

Hypothesis 3a *The financial control approach pursued by a corporate centre has a negative effect on business units' entrepreneurial orientation.*

Hypothesis 3b *The financial control approach pursued by a corporate centre has a negative effect on business units' strategic initiatives.*

Family influence also determines the level of EO and strategic initiatives in business units of family business groups. It has hitherto been established that family influence has positive effects on EO and innovations in family businesses due to the presence of long-term ownership by family members that creates strong dedication to resources needed in decision making related to entrepreneurship and innovation (Zahra, Hayton, & Salvato, 2004). Meanwhile, according to Salvato (2004), the number of generations involved in strategic planning and business management plays an important role in family businesses. Similarly, Kellermanns, Eddleston and Pearson (2008) explain that inter-generational family involvement has positive effects on entrepreneurship in the business. Therefore, a family business can be more innovative than a non-family business due to a better relationship between the owner and the business in the former (Beck, Janssens, Debruyne, & Lommelen, 2011). Accordingly, the following hypotheses were developed:

Hypothesis 4a *In family business groups, the family's influence has a positive effect on business units' entrepreneurial orientation.*

Hypothesis 4b *In family business groups, the family's influence has a positive effect on business units' strategic initiatives.*

At the business unit level, according to Scott, Gibbons and Coughland (2009), there is a positive relationship between EO and strategic initiatives. A company with strong EO is predicted to be able to create new product concepts, fulfilling both existing and potential customer needs. Business unit strategic initiatives in the form of innovation can be identified as an EO dimension while on the other hand it can be treated as a result of business units' EO, considered as a critical factor in economic value creation and organisation in the units (Christensen, 2003). Zahra and Covin (1995) state that a company with strong EO can attain a higher market target and position compared with its competitors. Accordingly, the following hypothesis is developed:

Hypothesis 5 *Entrepreneurial orientation has a positive effect on business units' strategic initiatives.*

The EO is a concept at the corporate level, strongly linked to strategic management and decision making (Covin & Slevin, 1991; Lumpkin & Dess, 1996). Many studies have revealed that EO has positive effects on business performance (eg. Miller, 1983; Wiklund & Shephard, 2005; Zahra & Covin, 1995). Moreover, several researchers have carried out longitudinal investigations and found positive effects of EO on business performance (eg. Wiklund, 1999; Zahra & Covin, 1995). Previous studies also show that strategic initiatives as an implementation of EO in business

units have positive effects on business units' performance in multi-business companies (Ambos & Birkinshaw, 2010; Liouka, 2007; Schmid et al., 2014). Based on this, the following hypotheses are proposed:

Hypothesis 6 *Entrepreneurial orientation has a positive effect on business units' performance.*

Hypothesis 7 *Strategic initiatives have a positive effect on business units' performance.*

METHODS

Sample and Procedure

Data for this study was collected from a survey of business units (as the unit analysis) that are part of family business groups in Indonesia. Those business units are managed by corporate centres that have majority shareholders. Based on data from the Financial Services Authority (an Indonesian government agency which regulates and supervises the financial services sector) as of January 2017, and the results of discussions with several members of family business groups in Indonesia, the estimated total population of business units in that country is approximately 500. The questionnaire was developed based on a literature review with input from family business groups in Indonesia.

The survey was pre-tested to militate against biases. Before the pre-test, face validity was conducted through discussions with some experts, i.e. academics and practitioners who comprehend the management of the family business group. This was done to ensure that the indicators in the questionnaire reflect the situation in the family business groups. Two pre-tests were conducted with 15 and 20 representatives of business units. The questionnaire was distributed by e-mail to directors and senior management officers of business units between April and August 2017. Out of 171 questionnaires distributed, 117 (68%) were returned, and 106 (62%) had all questions answered. These 106 valid questionnaires thus constitute the sample of this study.

The respondents were directors (65%) and senior management officers (35%). A senior management officer is one level below the Director / CEO who is also involved in strategic decision making in the company. Most respondents were male (89%). In terms of education, 53% had an undergraduate degree, 35% a Master's degree and 6% a doctoral degree. In terms of industry representation, 29% of respondents were from the manufacturing industry, 15% from logistics and transportation, 12% from mining and energy, 11% from agriculture, 10% from media & telecommunications, 10% from construction, 8% from financial services and, finally, 6% from other industries. Nearly two thirds of business units (63%) have been operating in Indonesia for more than 15 years, with 25% and 12% operating between 11-15 years and 10 years or less respectively.

Six-point Likert scales are used in this study to quantify respondents' views and opinions, in which 6 represents 'strongly agree' and 1 represents 'strongly disagree'.

The SPSS 21 software is used for descriptive analysis. Next, data was analysed using structural equation modelling (SEM) based on a 'two-stage approach'. The first stage is an analysis of the measurement model, which consists of validity and reliability analyses followed by parcelling (Bandalos, 2002; Rhemtulla, 2016) using latent variable scores (LVS) to simplify the measurement model from a second-order confirmatory analysis model (2nd CFA) into a first-order confirmatory analysis model (1st CFA). The second stage is analysis of the structural model, which includes a significance test of path coefficients between two latent variables, followed by research hypothesis testing. The LISREL 8.8 software is used for SEM.

Measures of Constructs

Corporate parenting role in the form of strategic planning (StraPlan), strategic control (StraCont) and financial control (FinCont) was operationalised as the degree of corporate centre involvement in the planning process (planning influence) and controlling process (control influence). This study adapted the scale developed by Goold and Luchs (1996). Family influence (FamInflu) was operationalised as the influence of family on company management in business units in the form of share ownership, corporate governance, family members' involvement in management, cross-generational succession experiences and family culture. This variable is captured by the scale of family influence (F-PEC scale) proposed by Astrachan, Klein and Smyrnios (2002), and validated by Klein, Astrachan and Smyrnios (2005), and Holt, Rutherfod and Kuratko (2010).

Entrepreneurial orientation (EntOrien) was operationalised as business unit management's tendencies towards product innovation, pro-activeness and risk-taking behaviours. The scale for EO was adapted from Miller (1983), and Kellermanns and Eddleston (2006). Business unit strategic initiatives (BUStrain) are executed by the business unit to implement EO in the form of innovation and entrepreneurship programmes, following Bindle and Parker (2011), and Zeng (2007). Finally, business unit performance (BUPerfor) was defined as perception of a business unit's level of success through financial and non-financial indicators, adapted from Venkatraman and Ramanujam (1986) and Trapczynski (2013). Operationalisation of the main research variables is summarised in Table 1.

RESULTS

The mean and standard deviation of each research variable based on results from the sample respondents, as well as bivariate correlation coefficients are provided in Table 2.

From Table 2, it can be seen that the mean of all research variables is between 4 and 5; therefore, on average, respondents answer between 'slightly agree' and 'agree' to the statements in the questionnaire. Table 2 also shows that more than 50% of the bivariate correlation coefficients between the research variables are significant at the 0.01 level.

Table 1
Operationalisation of research variables

Research Variables	Dimensions	Indicators*	References
StraPlan	1) Planning Influence (LPSP) 2) Control Influence (LCSP)	1) 7 items (PSP1–PSP7) 2) 3 items (CSP1–CSP3)	Goold & Luchs (1996), Johnson & Scholes (2012)
StraCont	1) Planning Influence (LPSC) 2) Control Influence (LCSC)	1) 6 items (PSC1–PSC6) 2) 4 items (CSC1–CSC4)	Goold & Luchs (1996), Barringer & Bluedorn (1999), Zahra et al. (2000)
FinCont	1) Planning Influence (LPFC) 2) Control Influence (LCFC)	1) 3 items (PFC1–PFC3) 2) 4 items (CFC1–CFC4)	Goold & Luchs (1996), Barringer & Bluedorn (1999), Zahra et al. (2000),
FamInflu	1) Family Power (LFIP) 2) Family Experience (LFIE) 3) Family Culture (LFIC)	1) 6 items (FIP1–FIP6) 2) 6 items (FIE1–FIE6) 3) 7 items (FIC1–FIC7)	Astrachan (2005), Klein et al. (2005), Holt et al. (2010)
EntOrien	1) Innovativeness (LEOI) 2) Risk Taking (LEOR) 3) Proactiveness (LEOP)	1) 4 items (EOI1–EOI4) 2) 3 items (EOR1–EOR3) 3) 4 items (EOP1–EOP4)	Miller (1983), Lumpkin & Dess (1996), Matsuno et al. (2002), Kellermanns & Eddleston (2006)
BUStrain	1) Product Innovation (LSIP) 2) Process Innovation (LSIS) 3) Market Development (LSIM)	1) 3 items (SIP1–SIP3) 2) 3 items (SIS1–SIS3) 3) 3 items (SIM1–SIM3)	Bindle & Parker (2011), Birkinshaw (1997), Zeng (2007)
BUPerfor	1) Financial Performance (LBPF) 2) Non-financial Performance (LBPN)	1) 5 items (BPF1–BPF5) 2) 7 items (BPN1–BPN7)	Venkatraman & Ramanujam (1986), Trapczynski (2013), Yalcinkaya, Calantone, & Griffith (2007)

* Indicators are measured on 6-point Likert scales

Table 2
Descriptive statistics and correlation coefficients

	Mean	SD	StraPlan	StraCont	FinCont	FamInflu	EntOrien	BUStrain	BUPerfor
StraPlan	4.33	0.55	1	.255**	−.092	.322**	.337**	.391**	.280**
StraCont	4.59	0.45	.255**	1	.082	.143	.387**	.346**	.183
FinCont	4.29	0.53	−.092	.082	1	−.053	−.055	.001	.159
FamInflu	4.32	0.38	.322**	.143	−.053	1	.358**	.432**	.250**
EntOrien	4.36	0.49	.337**	.387**	−.055	.358**	1	.705**	.432**
BUStrain	4.47	0.55	.391**	.346**	.001	.432**	.705**	1	.567**
BUPerfor	4.19	0.63	.280**	.183	.159	.250**	.432**	.567**	1

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

In terms of SEM, the first stage represents measurement model analysis. All research variables are 2nd-order CFA. Therefore, the first step of measurement model analysis is 1st-order CFA, which is represented by the relation between dimension/latent variable and its indicators/observed variables. This analysis includes tests of overall model fit,

validity and reliability. According to results of the goodness-of-fit index (GOFI), the values show good fit (Table 3). In addition to GOFI, all indicators have good validity (SFL > 0.50) and all constructs have good reliability (construct reliability > 0.70 and variance extracted > 0.50). Next, LVS are used for parcelling or simplification of measurement models. Bentler & Chou (1987) suggest that the minimum sample size for SEM is 5 or 10 × total of observed variables (or indicators). Therefore, the minimum sample size for this study based on the indicators in the questionnaire should be 5 × 82 = 410. Since the available sample size is only 106, parcelling or simplification is necessary. With LVS of the dimensions available, the measurement model of the research variables as 2nd-order CFA can be transformed into 1st-order CFA, with their dimensions as indicators or observed variables. With this transformation, the minimum sample size necessary for this study is reduced to 5 × 17 = 85.

The second stage of the SEM procedure is structural model analysis. Based on the fitness test results of the structural model, referred to as the goodness-of-fit index (GOFI), the values show good fit (See Table 4).

Table 3
Goodness-of-Fit Index (GOFI): Measurement model

Indicators	Computed GOFI value	Standard value for good fit	Conclusion
p-value	1.00	> 0.05	Good Fit
RMSEA	0.00	≤ 0.08	Good Fit
NNFI	1.08	≥ 0.90	Good Fit
CFI	1.00	≥ 0.90	Good Fit
IFI	1.06	≥ 0.90	Good Fit
SRMR	0.36	≤ 0.05	Marginal Fit
GFI	0.97	≥ 0.90	Good Fit
Norm-χ^2	0.00	≤ 2.00	Good Fit

Table 4
Goodness-of-Fit Index (GOFI): Structural model

Indicators	Computed GOFI value	Standard value for good fit	Conclusion
p-value	1.00	> 0.05	Good Fit
RMSEA	0.00	≤ 0.08	Good Fit
NNFI	1.08	≥ 0,90	Good Fit
CFI	1.00	≥ 0.90	Good Fit
IFI	1.06	≥ 0.90	Good Fit
SRMR	0.32	≤ 0,05	Marginal Fit
GFI	0.94	≥ 0.90	Good Fit
Norm-χ^2	0.00	≤ 2.00	Good Fit

The full SEM model, which consists of a structural model with a simplified measurement model, is estimated and summarised in Table 5.

From Table 4, it can be seen that out of 11 research hypotheses, eight are accepted and three, namely, H2b, H3b and H6, are rejected.

Table 5
Summary of hypotheses tests

Hypothesis	Path	t-value	Coefficient	Remarks	Summary
H1a	StraPlan ➔ EntOrien	7.59	0.38	Significant (+)	H1a Accepted
H1b	StraPlan ➔ BUStraIn	1.97	0.15	Significant (+)	H1b Accepted
H2a	StraCont ➔ EntOrien	4.78	0.34	Significant (+)	H2a Accepted
H2b	StraCont ➔ BUStraIn	−0.88	−0.07	Insignificant	H2b Rejected
H3a	FinCont ➔ EntOrien	−2.06	−0.16	Significant (−)	H3a Accepted
H3b	FinCont ➔ BUStraIn	1.53	0.11	Insignificant	H3b Rejected
H4a	FamInflu ➔ EntOrien	4.83	0.35	Significant (+)	H4a Accepted
H4b	FamInflu ➔ BUStraIn	2.09	0.19	Significant (+)	H4b Accepted
H5	EntOrien ➔ BUStraIn	4.70	0.70	Significant (+)	H5 Accepted
H6	EntOrien ➔ BUPerfor	−0.46	−0.07	Insignificant	H6 Rejected
H7	BUStraIn ➔ BUPerfor	4.00	0.75	Significant (+)	H7 Accepted

DISCUSSION

This study has assessed corporate strategy implementation and its influence on performance achievement through business units' entrepreneurial activities in family business groups. The virtue of the study lies in the fact that extant research in this domain has tended to focus on multinational business perspectives (Menz, Kunisch, & Collis, 2013). The study argued that in family business groups, business unit performance achievements were affected by two strategic factors, namely: (1) the presence of corporate centres (Zahra, Dharwadkar, & George, 2000) that play a corporate parenting role vis-à-vis strategic planning, strategic control and financial control (Goold, Campbell, & Alexander, 1994); and (2) family influence as a factor that plays a role in strategic decision making in a family business (Chung, 2012). These two strategic factors affect business unit performance through influencing EO and strategic initiatives in the form of innovation and business development.

The findings, in general, reveal different manifestations of corporate parenting roles in family business groups in Indonesia. First, corporate centres may result in added value to business units whenever the corporate centre is focused on managing related core businesses because they have the competency and resources needed to run operations and business developments. EO and strategic initiatives in business units will improve through the setting of strategies by the corporate centre in co-operation with management personnel

in the business unit rather than merely regarding such management as a conduit for implementing the strategy. This finding is in line with previous studies conducted on multinational companies such as Barlett and Ghosal (1997), Zahra, Dharwadkar and George (2000), and Murimbika and Urban (2014). Second, business units of family business groups in Indonesia are relatively independent and have their own legal status such that the corporate centre tends to run the units through strategic control. Financial control approaches turn out to have implications vis-à-vis lesser influence of corporate centres on the rise of strategic initiatives in business units (as evidenced by the rejection of H2b and H3b). As an independent company, a business unit in Indonesia has its own board of directors that can directly contact its respective shareholders and acquire its own funding for innovation projects and business development from investors, banks as well as other financial institutions without the involvement of its corporate centre. This finding supports that of Ramachandran, Manikandan and Pant (2013) about the unique characteristics of corporate centres in family business groups in developing countries, such as Indonesia.

Third, the presence of the family provides a positive influence on EO and strategic initiatives in business units; indeed, under certain conditions, its influence on business units surpasses that of the corporate centre. This finding shows that family influence in Indonesian family business groups occurs not only due to the influence of certain power dynamics within the family (ownership and management) but also due to experience and leadership qualities where company management has passed through more than two generations, as well as the influence of family culture on company business management. For example, as practised in Indonesia, banks and other financial institutions commonly have a maximum credit line policy regarding innovation and business development projects in the context of family business groups. This policy considers the reputation and credibility of the family that owns the majority shares. Banks or other financial institutions will be directly connected to each business unit and will evaluate the feasibility of the innovation and business development project proposals submitted by business units without the involvement of the corporate centre. Nevertheless, in addition to considering the feasibility of such projects, banks or financial institutions will approve the credit line if the credibility and reputation of the family controlling the company are rated favourably. Therefore, family influence will carry more weight in innovation and business development credit line approval than the corporate centre's presence. These findings support the notion that family influence in Indonesian family business groups can be conducive to entrepreneurial development (see also Aldrich & Cliff, 2003; Chirico, Ireland, & Sirmon, 2011).

Another interesting finding is that there is no direct relationship between the EO level and the business units' performance.

This mirrors findings in existing studies which also failed to establish a relationship in this respect (Covin, Slevin, & Schulz, 1994; George, Wood Jr, & Khan, 2001). Empirical studies show that the nature of EO influence is heavily affected by many external factors (Covin & Slevin, 1989; Zahra & Covin, 1995) and internal company resources (Brush, Greene, & Hart, 2001). Therefore, it is concluded that EO levels affect performance when entrepreneurial intensity is realised in the form of strategic initiatives through innovation and market development programmes.

CONCLUSION

In general, the corporate parenting role concept developed by Goold and Campbell (1987), and Goold, Campbell and Alexander (1994) and commonly used by multinational companies, can be implemented in family business groups. Yet, implementation needs to consider the business unit structure with legally independent entities as specific characteristics of business units owned by family business groups in developing countries. Specifically, this research shows that the corporate centre that applies a strategic planning approach will have positive influences on EO and strategic initiatives in business units, while strategic control approaches can have positive influences on EO but no significant influence on business unit strategic initiatives. On the other hand, the financial control approach negatively influences EO levels but not the strategic initiatives in business units.

Moreover, in the management of family business groups in Indonesia, the family has positive influences on the EO level and strategic initiatives in business units so that they can grow and survive for a relatively long period of time, up to the second, third and later generations. Meanwhile, this research confirms that EO has indirect influences on business units' performance, and it is affected by internal and external factors, including the presence of strategic initiative programmes as part of EO implementation.

This study has contributed to the strategic management and entrepreneurship literature by investigating the implementation of the corporate parenting role in family business groups, and its relationship with business unit entrepreneurial activities. The measurement criteria of the corporate parenting role developed by Goold and Luchs (1996) was extended by adding indicators in the planning influence and control influence dimensions, and it is assumed that a corporate centre adopts strategic management practices in the form of strategic planning, strategic control and financial control simultaneously. Furthermore, this study provided new findings on family influence over business units' entrepreneurial activities.

Finally, this research is not without its limitations. First, data was derived from respondents from the perspective of business unit management and not from the perspective of corporate centre management. Therefore, there is ample scope to consider the latter in future research. Second, and

related to the foregoing point, this research has examined the connection between family influence and business units even though, in practice, families exhibit greater influence on corporate centre management. Therefore, future research could investigate family influence on corporate centres' choices vis-à-vis the corporate parenting role approach.

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How Does Personality Affect Employee Engagement in Change Management? It Depends on Role of Personal Mastery and Network Centrality

Dofa Purnomo[1]*, Rhenald Kasali[1], Budi Widjaja Soetjipto[1,2] and Tengku Ezni Balqiah[1]

[1]Department of Management, Faculty of Economics and Business, University of Indonesia, Depok Campus, Depok 16424, Indonesia
[2]Universitas Pertamina, Jakarta 12220, Indonesia

ABSTRACT

Successful organisational change begins with employees, in which employees become the core of organisational change, especially in cases of divergent organisational change which could represent a matter of life and death for the organisations. Literature on theory of power had identified personality, personal mastery, and network centrality as central to organisational change. Having this power, however, does not guarantee that people within the organisations have desire to participate actively to facilitate that change. This study examines how personality could increase employees engagement in organisational change through the mediation effect of personal mastery and network centrality. This research was conducted in a state-owned Indonesian energy enterprise, included 155 respondents, and data was analysed using structural equation modelling. The results of this research confirm that personal mastery and network centrality mediate the effect of personality on employee engagement to achieve organisational change. Network centrality in particular, has a greater effect on employee desire to change. The study concludes with a discussion of the findings, managerial implications and limitations.

Keywords: Engagement to change, network centrality, personality, personal mastery

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E-mail addresses:
dofa.purnomo8@gmail.com (Dofa Purnomo)
rhenaldkasali@yahoo.com (Rhenald Kasali)
bsoetjipto@gmail.com (Budi Widjaja Soetjipto)
tebalqiah@yahoo.com (Tengku Ezni Balqiah)
* Corresponding author

INTRODUCTION

Organisations around the world have undergone significant and extensive changes over the past two decades (Kotter, 2012). The emphasis has been on "bottom-up" action rather than "top-down" control in implementing organisational change

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(Bamford & Daniel, 2005). The rationale behind this is that the pace of change is so rapid and complex that once it occurs, it is impossible for the top management to identify, plan, and implement every action required (Bamford & Daniel, 2005). Pettigrew and Whipp (1993) believed there are no universal rules with regard to leading change, and it involves linking action by people at all levels of the business. Schein (2004) supported that statement and said that organisational change is mediated through individual-level change, because people within an organisation have power to make organisational changes (Watkins, 2013). Hammett (2007) defined power as a person's capacity to influence others to behave as desired. Gladwell (2000) argued that change always involves three powers. The first power is salesmen. Gladwell (2000) defined salesmen as people who have the ability to convince others through their persuasive personality. French and Raven (1959) called it "referent power," whereas Watkins (2013), and Hall and Lindzey (1970) termed it "personality."

The second power is mavens. Mavens are people who have the ability to accumulate knowledge (Gladwell, 2000). French and Raven (1959), and Watkins (2013) called it "expert power," while Senge (1990) and Greene (2012) termed it "personal mastery," which is the individual capacity to grow and learn. The third power is connectors. Gladwell (2000) defined connectors as those who have an extensive network and knows many people. Watkins (2013), Krackhardt (1987, 1990), and Battilana and Casciaro (2012) termed it "network centrality". Although the context presented by Gladwell (2000) is informal, Watkins (2013) found that the three kinds of power are also valid in the formal contexts within organisations.

However, although employees have power to initiate and implement change, numerous studies have shown that employees tend instinctively to oppose change, especially to implement radical change (Daft, 2004). D'Aunno, Succi and Alexander (2000) call this divergent organisational change, namely change that diverges from status quo. Regarding the success rate to realise divergent organisational change, Kotter (1995) stated that nearly 70% of large-scale change programmes do not achieve the desired objectives. Battilana and Casciaro (2013) said that only small numbers of employees are enthusiastic to engage in divergent organisational changes. Charan, Barton and Carey (2015) found that only 2% of the people in a business drive 98% of the impact. Therefore, the role of employee engagement is very important, especially in making changes within the organisation, which is referred to as engagement to change (Royal & Agnew, 2012). Research shows that employees who have engagement to change can be a catalyst for change (Boone, 2012). Furthermore, Hewitt (2013) suggested that employees who have engagement to change feel united with change, and even invite others to jointly encourage changes in the organisation.

Earlier studies on organisational change focused on systems and structural approaches to implement organisational

change effectively, and have neglected the fact that individuals are the ones who make change happen (Nikolaou, Gouras, Vakola, & Bourantas, 2007). The current study attempts to explain how employees can be prompted to use the power they have to increase their engagement to change and to play an active role in initiating and implementing divergent organisational change (Weick, 1995). Collins (2001) argued that good-to-great companies began their transformation by first getting the right people, and in determining "the right people," they place greater weight on personality attributes because they believe that personality is more ingrained. Therefore, in this study, researchers examined how personality of employees can lead to organisational change, through mediation effect of personal mastery and network centrality. The subsections below discuss the meaning of personality, personal mastery and network centrality

Personality

In studying the theory of personality, Hall and Lindzey (1970) concluded that there is no substantive definition of personality that can be applied in general. Thus, the definition of personality is based on particular theoritical preferences. In this study, the definition of personality is associated with a referent power (French & Raven, 1959). People with referent power give meaning to others and provide them a sense of purpose (Rahim, Antonioni, & Psenicka, 2001). They are able to generate trust, openness, and respect by using these same qualities in their interactions with others (Knapp, 1990). Rahim et al. (2001) showed that the referent power base is more effective than other power bases in influencing others.

Personal Mastery

Senge (1990) defined personal mastery as an individual's capacity to grow and learn. The essence of personal mastery is learning how to generate and sustain creative tension in our lives (Ng, 2004). Judkins (2017) argued that to prosper in economies of the future, people need to realise that the real currency today is not money, but ideas. Ideas can trigger revolutions or nudge society in a particular direction (Judkins, 2017). A person with ideas is never content, and always wants to push towards a new direction (Judkins, 2017). Therefore, Secretan (1997) explained that individuals who strive for mastery are devoted to continuous development, polishing their skills, competencies, and practices, being an expert and respecting knowledge, wisdom, and learning. Those who have mastered their field are often a great source of insight (Twigger, 2017). Greene (2012) revealed that mastery is not a function of genius or talent, rather it is a function of time and intense focus on a particular field of knowledge. Boast and Martin (1997) believe that mastery is inherent in every successful individual.

Network Centrality

To succeed today, people must build networks intensively across the organisations (Geisler, 2012). According to Liu and Ipe (2010), a

person with network centrality will make himself or herself a knot in social networks. Developing and nurturing networks is key to getting anything accomplished (Battilana & Casciaro, 2012). According to Klein (2004), there are two ways to develop personal networks. The first is through a person's formal authority because of his or her career moves (Klein, 2004). Maxwell (2005) opined that a person's formal authority provides an access to connect with many parties, since individuals who move from one functional group to another create diversified networks that afford them to find opportunities that can be followed up to improve organisational performance. The second way to develop networks is through internal interaction with peers in an organisation (Klein, 2004). Both methods are intertwined to create a reinforcing cycle (Battilana & Casciaro, 2013; Klein, 2004).

Engagement to Change

Change can be received with excitement and happiness or anger and fear, and employees' response to it may range from positive intentions to support the change to negative intentions to oppose it (Battilana & Casciaro, 2013). Therefore, the single biggest challenge about change is to have every individual understand that change starts with himself or herself (Coetsee & Flood, 2013). Eby, Adams, Russel and Gaby (2000) showed that positive attitude to change is vital in ensuring successful organisational change. Royal and Agnew (2012) defined employee engagement to change as employee willingness to drive organisational change through his or her active and effective engagement. Employee engagement to change begins with a sense of urgency for change, and awareness of the importance of change (Boone, 2012). Battilana, Leca and Boxenbaum (2009) pointed out that when an individual commits and engages to achieve change, it will affect his or her view of change as a hope for a better future. Individual who embrace change will welcome and applaud it as being something good (Coetsee & Flood, 2013). Furthermore, individual with engagement to change has the motivation and confidence that change is necessary, thus optimising their capacity for changes (Porras & Robertson, 1992).

In the context of organisational change, Li, Zhong, Chen, Xie and Mao (2014) suggested that there is a relationship between personality and engagement to change, in which personality differences and characteristics, such as the level of self-efficacy and self-esteem, can predict employee attitudes toward change and their motivation to change (Coetsee & Flood, 2013). A number of studies found that self-efficacy and self-esteem are individual differences that may impact on individual engagement to change (Eby et al., 2000).

Self-efficacy relates to the belief that one has the ability to perform his or her tasks effectively in various situations (Gardner & Pierce, 1998). Employees with self-efficacy tend to see their work as challenging and enjoyable. Self-efficacy also refers to individual beliefs that he or she possesses the ability to perform tasks

well (Bandura, 1997). Gardner and Pierce (1998) stated that self-efficacy is related to perceptions of competence and ability because of one's personal mastery. In the theory of change, when an individual has self-efficacy as a result of personal mastery, it will encourage him or her to engage in making changes in the organisation (Conley, 2006; Nikolaos, 2014) which Royal and Agnew (2012) referred to as engagement to change. Therefore, the following hypothesis was developed:

Hypothesis 1: Personal mastery mediates the effect of personality on engagement to change.

Self-esteem relates to the extent to which one considers himself or herself valuable and important. One has a self-esteem when he or she feels the affection, attention, and appreciation of others. Thus, the main aspects of self-esteem are acceptance, appreciation, and support by others. Support from the network is important because no one can make changes alone (Battilana & Casciaro, 2012). Peach, Jimmieson and White (2005) found that social support significantly influences how an individual views and supports the change. If a person's self-esteem needs can be met, then they feel a value in their social environment and hence, are fully engaged to achieve the expected goals, and find the meaning of achievement (Liu, Hui, Lee, & Chen, 2013).

Self-esteem is related to feelings of self-worth because of one's network centrality (Gardner & Pierce, 1998). In the theory of change, when an individual has self-esteem because of his or her network centrality, it will encourage engagement in the individual to make changes in the organisation (Conley, 2006; Nikolaos, 2014). Hence, the following hypothesis is proposed:

Hypothesis 2: Network centrality mediates the effect of personality on engagement to change.

METHODS

The object of this study is PT Pertamina (Persero), a state-owned, Indonesian energy enterprise.

Population and Unit of Analysis

The population in this study is Pertamina's employees in various positions, ranging from managers to senior vice presidents, for those who work in corporate; and managers to directors for those who work in subsidiaries/joint ventures company. The unit of analysis in this study is Pertamina's employees in various positions, ranging from managers to senior vice presidents, for those who work in corporate; and managers to directors for those who work in subsidiaries/joint ventures company, who have attended an executive education programme called "Program Pengembangan Eksekutif Pertamina" (PPEP), which is organised by the company. As part of the programme, employees are required to initiate and implement change projects. The total number of units of analysis is 410 persons. This is similar to what has been done by Battilana (2006) in her study of institutional entrepreneurship conducted at the National Health Service (NHS) in the

United Kingdom. Battilana (2006) examined NHS's employees at the managerial level who have attended an executive education programme, called the "Executive Strategic Leadership Education Program," organised by the NHS. As part of the program, the employees were are required to initiate and implement change projects.

Measurement

The research instrument used in this study is a questionnaire that used six Likert scales to measure attitudes ranging from "strongly disagree to strongly agree." Questions were developed from the operationalisation of indicators in respective research variables. The questionnaire consisted of four research variables: (1) personality (Gladwell, 2000); (2) personal mastery (Gladwell, 2000); (3) network centrality (Gladwell, 2000); and (4) engagement to change (Boone, 2012; Kahn, 1990; Royal & Agnew, 2012; Saks, 2006).

In this research, a quantitative approach was used and there were 39 items in the questionnaire: six questions about personality; 12 questions about personal mastery; 11 questions about network centrality; and 10 questions about engagement to change. The questionnaire was distributed online to the 410 employees, and 155 respondents completed the questionnaire during the survey period (June 20, 2015 to July 29, 2015). It achieved a response rate of 37.8%. The data in this study was processed by using structural equation modeling (SEM), in which Lisrel 8.8 was used to measure the structural models. The researchers used a two-step approach (Anderson & Gerbing, 1988). The first stage of the two-step approach was to re-specify a hybrid model as a CFA model (Confirmatory Factor Analysis). The CFA model was then analysed to determine its suitability to the data (goodness of fit). The second stage of the two-step approach was to add the original structural model to the first stage CFA model, to produce a hybrid model. The hybrid model is then estimated and analysed to see the overall fit of the model, and to evaluate its structural model.

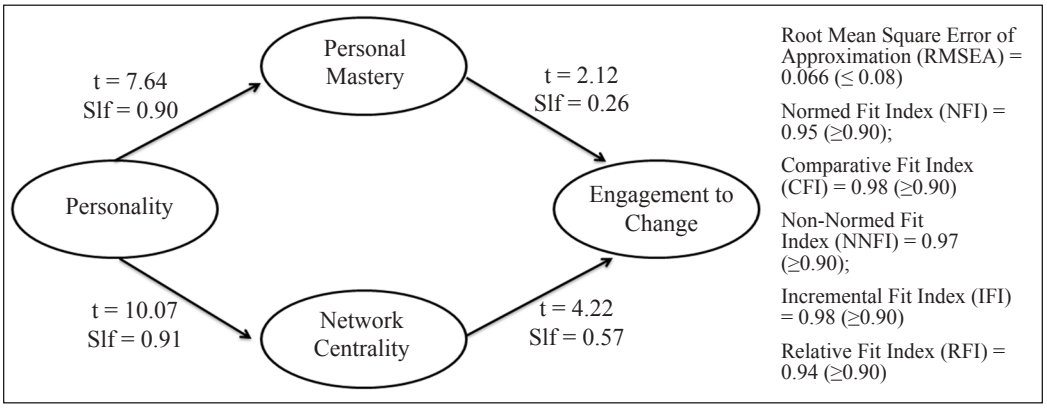

Figure 1. The results of significance test of structural research model

RESULTS

In this study, the significance level (α) is 5%, and the degree of freedom (df) is 154, and therefore the critical value is 1.984. Based on that information, the t-value will be significant if $t \geq 1.984$, or $t \leq -1.984$. Since the t-value is above 1.984; then all trajectories are significant. Hence, it can be concluded that personality influences personal mastery and network centrality, and engagement to change is influenced by personal mastery and network centrality. Furthermore, it is known that personality influences personal mastery, and personal mastery influences engagement to change. It can be concluded that personal mastery mediates the relationship between personality and engagement to change. Similarly with network centrality, it is known that personality influences network centrality, and network centrality influences engagement to change. It can be concluded that network centrality mediates the relationship between personality and engagement to change. Therefore, both hypothesis 1 and hypothesis 2 are supported by data. In terms of influence, the total effect of network centrality's mediation is 0.5187 (0.91x0.57), and the total effect of personal mastery's mediation is 0.234 (0.90x0.26). Based on this result, it is clear that network centrality more strongly mediates the effect of personality on engagement to change. Based on a combination of different model fit sizes, it can be concluded that in general, the overall fit of the model is good.

DISCUSSION

The results of the current study are in line with previous researches conducted by Collins and his team (2001) who conducted a five-year study to determine what made companies move from being good to great. One of their key findings is that good-to-great companies have the right employees. Tjan (2017) agreed that people of good character and who are rooted to a set of core values that explain who they are and what they stand for are an asset to the company. This type of people have growth mindset (Dweck, 2006). According to Bass (1990), effective organisational change is a result of two types of behaviour: task-orientated and person-related. Task-orientated skills are related to personal mastery (Bass, 1990; Greene, 2012; Senge, 1990), and person-related skills refer to network centrality (Bass, 1990; Battilana & Casciaro, 2013). Therefore, Dweck (2006) found that people with growth mindset are always engaged in improving their personal mastery (self-efficacy), and constantly foster their relationships with many people, and surround themselves with the right and influential people to strengthen their network centrality (self-esteem). Thus, they can move forward with confidence to engage in divergent organisational change and lead the company from good to great. This kind of people have energy, passion, commitment to the organisation, and add high value to the organisation (Collins, 2001). Research findings also showed that network centrality more strongly mediates

the effect of personality on engagement to change. This is in accordance with the findings of Battilana and Casciaro (2013) who reported that formal structures and informal networks co-exist, and each influences how people get their jobs done. When it comes to encouraging employees' engagement to change, Battilana and Casciaro (2013) showed that network centrality is critical. Therefore it is important for employees to build relationships with many people at multiple levels in the organisation, including with a handful of key influencers, treat some of them like mentors, and the rest as project sponsors (Azzarello, 2017).

In terms of this research setting, Pertamina's evolution as Indonesian energy state-owned enterprise (SOE) was not very business-oriented historically (Kasali, 2008). Moreover, Indonesian legislators ended Pertamina's monopoly with a new law: Law No. 22/2001. One of the foremost challenges Pertamina is facing because of this new regulation is to change employee mindset (Kasali, 2008). This research was conducted when the oil and gas industry was experiencing pressure due to sharply declining world oil prices. Crude oil prices ended 2015 below US$40 per barrel, the lowest level since early 2009 (Pertamina, 2016).

This situation leads Pertamina and energy companies around the world into the discomfort zone (Reynolds, 2014). The turbulent situation has encouraged Pertamina to increase the engagement to change of its employees. The executive education program, called "Program Pengembangan Eksekutif Pertamina" (PPEP) is held for selected employees who are at the managerial level and above, thus providing the necessary skills and knowledge for employees to perform organisational change, including seminars and talks to employees about the importance of organisational change. As part of the programme, employees are also required to initiate and implement change. This has increased employees' awareness that they have the ability to make change. Based on the results of the study, it is shown that personal mastery mediates the effect of personality on engagement to change. Furthermore, employees who participated in this programme came from various functions, directorates, subsidiaries, and joint ventures. Employees' career experience in various positions and locations also increases their network centrality. Based on the results of the study, it is also shown that network centrality mediates the effect of personality on engagement to change. The results of this study support Maxwell's assertion (2017) that awareness changes everything. As soon as people become aware that some of their "limitations" are artificial, they can begin to overcome many of them. People can reject these restraints, which opens the way for growth (Maxwell, 2017).

CONCLUSION

The results of this research show that personal mastery mediates the effect of personality on engagement to change, and network centrality also mediates the

effect of personality on engagement to change. However, network centrality has a stronger mediating effect. This study has some managerial implications. First, based on these findings, it is important for organisations to conduct periodic surveys of employees' engagement to change. Survey results should be reviewed as part of continuous efforts to improve this. Second, organisations are advised to select individuals based on their personality as the most important criteria (Collins, 2001; Tjan, 2017). Third, specific strategies, such as coaching and the manner in which the change message is structured and communicated can be employed to increase individual engagement to change, with the emphasis that change is not a block, but an evolution (Coetsee & Flood, 2013).

Fourth, with regard to personal mastery, it is important for the organisation to remain a learning organisation whereby it facilitates individuals within the organisation to improve their personal mastery over time, through high-impact trainings that will contribute to effective performance to strengthen their specific, task-based self-efficacy, and also encourage individuals to share their knowledge with others (Gardner & Pierce, 1998). Fifth, in terms of network centrality, it is important to provide equal opportunities to all employees to increase their exposure, including involving employees in breakthrough projects that are results-oriented priority projects whose members consist of cross-functional and even cross-directorate, and the involvement of employees in the projects can be known by many people in the organisation, including top management.

Sixth, it is important to put employees on rotational assignments throughout the organisation. Some even include assignments outside the organisation. By assigning employees to different posts within and outside the organisation, it will not only expand employees' network centrality, but also deepen their understanding of the business, and competitive dynamics of the industry (Carucci & Hansen, 2014). Employees will be far more open-minded to different views if they themselves have served on the other side of the table (Carucci & Hansen, 2014). Seventh, it is important to create a culture in the company that embraces change, provides employees with cues in terms of which behaviours are regarded as important (Coetsee & Flood, 2013).

This study is conducted in PT Pertamina (Persero), a state-owned Indonesian energy enterprise, which does not reflect the industry as a whole. Future research can be done on other state-owned enterprises in different industries, or in companies in the same industry that are not state-owned, which conduct divergent organisational change. Furthermore, the findings in this study are based on data collected using self-report questionnaires. For future research, a 360-degree appraisal is recommended as suggested by Antonioni (1996), and Pollack and Pollack (1996), in which respondents will be assessed by their leaders, peers, and subordinates.

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Stakeholder Pressure and Its Effect on Environmental Proactiveness and Firm Performance: The Mediating Role of Dynamic Managerial Capabilities

Elok Savitri Pusparini[1]*, Budi Widjaja Soetjipto[1,2], Riani Rachmawati[1] and Lily Sudhartio[1]

[1]Department of Management, Economics and Business Faculty, Universitas Indonesia, Depok 16424, Indonesia
[2]University of Pertamina, Jakarta 12220, Indonesia

ABSTRACT

This study examines how Indonesia's hotel industry responds to environmental sustainability pressure and how dynamic managerial capabilities play a significant role in defining environmental proactiveness as a proxy of strategic response and its impact on a firm's performance. This will be done using a model that integrates institutional theory, resource dependence theory, and cognitive theoretical perspectives. The findings of this study indicate that stakeholder pressures perceived by hotel managers have a positive impact on hotels' environmental proactiveness through the mediating effect of dynamic managerial capabilities. This current study also finds a strong and positive relationship between environmental proactiveness and firm performance. Drawing from the results, research contributions, managerial implication, policy implication, and future avenues of inquiries for researchers are provided.

Keywords: Dynamic managerial capabilities, environmental proactiveness, firm performance, hotel industry, stakeholder pressure

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E-mail addresses:
eloksp@ui.ac.id (Elok Savitri Pusparini)
bsoetjipto@gmail.com (Budi Widjaja Soetjipto)
Riani.rachmawati@gmail.com (Riani Rachmawati)
Lily.sudhartio@gmail.com (Lily Sudhartio)
* Corresponding author

INTRODUCTION

The United Nations has been designated 2017 as the International Year of Sustainable Tourism for Development. Based on current trends, United Nation World Tourism Organization (UNWTO) has projected international tourist arrivals to grow at a rate of 3% to 4% worldwide in 2017 (Tourism Market Trends Programme, 2017). Meanwhile, the government has

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specified that the tourism industry, which contributes 13% to Indonesia's national GDP, must increase international arrivals to 15 million through the development of nationwide tourism destinations. This will be a 25% increase from 2016 and aimed at creating 12 million domestic jobs (Ministry of Tourism, Republic of Indonesia, 2016). This will also boost hotel development across the country. At the same time, there is a growing awareness on the negative impact of the tourism sector on environmental sustainability. The hotel industry plays a significant role in minimising adverse effects on the environment and therefore it is an interesting subject to be explored in strategic management studies in Indonesia.

This study contributes in enhancing sustainability in the strategic management field in two ways. First, based on Murillo-Luna, Garces-Ayerbe and Rivera-Torres (2008), it incorporates firm performance in measuring the effect of stakeholder pressures on environmental proactiveness of the firm. Second, by assessing the mediating role of dynamic managerial capabilities, this study examines the effect of stakeholder management in determining hotel performance in Indonesia. This is an extension of a case study on China (Lo, 2013). There has been limited studies on the role of dynamic managerial capabilities in determining environmental proactiveness and firm performance in the hotel industry in developing countries such as Indonesia.

The first section of this study discusses major studies on stakeholder pressure in the context of environmental responsibility, followed by dynamic managerial capabilities, the degree of proactiveness of hotels' environmental response patterns, its link with firm performance, followed by development of hypotheses. The next section describes firm characteristics, research variables, and research methodology followed by a discussion on the results, study limitations, and summary of the main findings as well as conclusions.

LITERATURE REVIEW AND HYPOTHESES

Stakeholder Pressure

Literature on strategic management and business ethics has in recent years focused on environmental pressures on sustainability. One of the important concerns was to recognise the source of the pressures, and who are the stakeholder groups that require sustainable and environmentally friendly goods (Eesley & Lenox, 2006; Sharma & Henriques, 2005). The stakeholder theory is premised on the relationship between a firm and its stakeholder that is defined as any group or individual who has the power to affect or at the same time can also be affected by the accomplishment of one organisational objectives (Freeeman, 1984). Specifically, the organisations are not self-contained or self-sufficient and are dependent on their external environment for resources (Pfeffer & Salancik, 1978).

Donaldson and Preston (1995) explained the influence of stakeholders, which are normative, instrumental, and descriptive. The normative reasons explain that stakeholder theory is focused on how

managers consider the interests of those who have a stake in the organisation, and in what way the stakeholders exercise their interest in the firm's processes or products to increase their intrinsic values. The instrumental reasons focus on the prediction of a firm's behaviours on means-ends reasoning, as Jones (1995) indicated that it is the conditions where the relationship management with its stakeholder become the firm level interests. Thus, it can be concluded that managing stakeholders' interests will maximise a firm's performance (e.g. Agle, Mitchell, & Sonnenfeld, 1999; Berman, Andrew, Suresh, & Jones, 1999; Lo, 2013; Welcomer, Cochran, Rands, & Haggerty, 2003). Finally, the descriptive reasons refer to the way a firm is focused on characterising its actual actions and stakeholder groups as they interact with one to another.

Dynamic Managerial Capabilities

Dynamic managerial capabilities are defined as the capabilities to 'build, integrate, and reconfigure organizational resources and competences' to achieve congruence to changing environmental conditions (Adner & Helfat, 2003; Sirmon & Hitt, 2008; Teece, 2007). It consists of three underlining concepts: managerial cognition, which explains the beliefs and mental models, managerial human capital which explains specific and generic skills and expertise, and managerial social capital which explains intra- and inter-organisational ties (Adner & Helfat, 2003). The managerial cognition conception focuses on the process of decision making where managers emphasise their belief systems and mental models (Prahalad & Bettis, 1995), and also strengthen their personal and professional experience as a result of interactions between internal and external networks (Adner & Helfat, 2003). Managerial human capital is the range of skills and knowledge of managers based on their education, personal characteristics, and professional experiences (Becker, 1983). Finally, managerial social capital conception explains a manager's ability to access resources through relationships and connections (Adler & Kwon, 2002). In order to acquire an important resource including some critical information to support their decision-making process, managers often take an advantage of their formal and informal networks.

Based on the above explanations, also supported by Huff's (1992) findings which explained that the stage of managerial perceptions on one certain situation is shaped by managers' limited point of view, affected by their selective perceptions, cognitive base and value system resulting their interpretations upon the context. Accordingly, this current study argues that the more pressures perceived by managers, the higher the dynamic managerial capabilities required in the organisation. Thus, the following hypothesis was proposed:

Hypothesis 1: Stakeholder pressure has a strong positive effect on dynamic managerial capabilities of the firm.

Environmental Proactiveness

Previous studies have explained how stakeholders have the power to influence a firm's operations and its wealth creation (Buysse & Verbeke, 2003). Daft and Weick (1984) supported by Dutton and Duncan (1987) explained that an organisation scans the data from the environment, assign meaning to the data, and enact their respond upon the data most likely is the result of their interpretative system. It is the condition where managers are highly aware of their firms' vulnerability upon the institutional pressures derived from their external environment as what Prahalad and Bettis (1986) explained as managerial cognition. The higher the urgency level of stakeholder pressures perceived by firm's executives, the higher the extent of organisational responses.

Under circumstances where some issues are publicly known (Dutton & Duncan, 1987; Mitchell, Agle, & Wood, 1997), the organisation needs to act accordingly and resolve the inquiries openly in the organisations' favour (Andersson & Bateman, 2000). Buysse and Verbeke (2003) stated that when studying the causalities between stakeholder pressure and firm proactiveness, different directions might appear. It is said that the stronger the environmental proactiveness the higher the sensitivity to stakeholder pressures, but in other case, it appears that the pressures themselves may trigger more proactiveness in environmental strategy. Thus, based on the recent development in the literature, the following hypothesis is proposed:

Hypothesis 2: Dynamic managerial capabilities has a strong positive effect on environmental proactiveness of a firm.

Hypothesis 3: Dynamic managerial capabilities fully mediates the relationship between stakeholder pressure and environmental proactiveness of a firm.

Firm Performance

A firm's success may not depend on neither a single set of factors nor resources (Peteraf & Reed, 2007), and organizational performance measurement should not rely on a single method or approach. As Barney and Arikan (2001) determined that how managers utilize organizational strategic resources will significantly affect the firm performance (Sirmon, Hitt, & Ireland, 2007). One inquiry that always draw scholars' attentions is to recognize whether there are competitive advantages and opportunities associated with environmental management (Gonzales-Benito, 2008). Despite its importance, the empirical research regarding the causalities among the constructs has not been conclusive, and the debate is still open (Barba-Sanchez & Atienza-Sahuquillo, 2016).

Furthermore, some studies have developed theoretical arguments around the empirical evidence on the existence of the positive relationship between environmental proactiveness and firm performance (Gonzales-Benito & Gonzales-Benito, 2005; Gonzales-Benito, 2008). Also considering

Donaldson and Preston's critics (1995) on the lack of reliable indicators on the stakeholder management, accordingly, with the aim to validate the causalities between firm level environmental proactiveness and a firm's performance, the following hypothesis is proposed:

Hypothesis 4: Firm level environmental proactiveness has a strong and positive effect on a firm's performance.

METHODS

Sampling and Data Collection

According to National Statistical Bureau of Indonesia (2017), there are 2387 star-rated hotels across 34 provinces in Indonesia, the average occupancy rate is around 65%, and average number of guests is at least 174,168 per day. Sample hotels were selected from 20 major cities in Indonesia, including Jakarta, Bogor, Bandung, Semarang, Yogyakarta, Solo, Surabaya, Malang, Denpasar, Mataram, Makasar, Manado, Samarinda, Balikpapan, Palu, Medan, Padang, Palembang, Pekanbaru, and Bandar Lampung, considering the cities' rapid developments in business and tourism and its representativeness of regions in Indonesia.

This study focused on tourist and business hotels rated three stars and above for data sufficiency. From the population of 2387 hotels, as many as 25 hotels from each of the 20 cities have been chosen based on top-rated three- to five-stars ratings in major online travel agents' websites. Sata regarding each hotel's property location was gained from their websites, and the research questionnaires were sent through the regular mail. Each bundle of the questionnaire was addressed to the person responsible for environmental issues or, if there was no such person, to the hotel's General Manager.

This study was measured using 64 items of indicators in total. To measure dynamic managerial capabilities, a construct consisting of three dimensions was developed: human capital (5 items), social capital (6 items), and managerial cognition which consists of two sub-dimensions: perceived urgency and perceived manageability. Perceived urgency was measured using eight items (Dutton & Duncan, 1987; Dutton, Dukerich, & Harquail, 1994) and perceived issue manageability using seven items (Dutton & Duncan, 1987). Stakeholders' pressure was measured from 5 dimensions (15 items) as shown in Figure1 based on Murillo-Luna, Garces-Ayerbe and Rivera-Torres (2008). Environmental proactiveness taken from 14 items have also been measured by Murillo-Luna, Garces-Ayerbe and Rivera-Torres (2008). Firm performance was assessed based on the objective financial performance (Knott, 2003), subjective financial performance (Powell & Dent-Mikaleff, 1997), and nonfinancial performance (Markman, Espina, & Phan, 2004).

Data Analysis

In this study, structural equation modelling (SEM) (LISREL 8.5) using a maximum likelihood (MLE) estimation method was applied to test the model and relationship between the variables within the structural

model, as shown in Figure 1. Given the large numbers of items in this study that exceeds the total data needed to apply MLE estimation, the items within each dimension were averaged to form a single score for each dimension, which then acts as an indicator to measure the variables and allow easier interpretation in first-order confirmatory factor analysis. The score then formed the basis for composite values as they met conceptual and empirical criteria of the research supported by previous studies (Hair, 2010).

Up until the end of data collection period, as much as 127 from targeted sample hotels responded, and 102 samples of data were further tested, rendering the rest of the data unable to be used due to information incompleteness from the returned questionnaires. The analysis also included testing for mediation, which depicted dynamic managerial capabilities as a mediating construct as hypothesised was supported by a comparison between the model fit without direct effect (Model 1) and including direct effect (Model 2), as shown in Table 1.

RESULTS

Demographic Characteristics

The data collection period lasted four months from March until July 2017 and 127 responses were received. Among these, 102 responses were valid, yielding a valid response rate of 80.3%; 43 responses were received from three-star hotels, 47 from four-star hotels, and 12 from five-star hotels. About 71% of participating hotels are part of an international network hotel association, and 29% hotels are part of a local or domestic network hotel association.

From the business scale category, about 22% of the response was received from hotels which can accommodate 25–99 guest rooms, 47% from hotels with 100–200 guest rooms, 19% from hotels with 201–300 guest rooms, and 12% from hotels with more than 300 guest rooms. As many as 127 middle-to top-level management employees were involved, with the total of 75% are senior-level and top-level management, about 13% at middle-management roles, and the remaining 12% are in the lower-level management. Respondents in top-level management have their tenure with approximately 25–30 years of services, senior-middle management about 10–24.5 years of services, and lower-level management have average tenure of about 5–10 years of service in the hotel industry. Respondents' average age is between 30 to 60 years. The study showed the result of stakeholders' pressure in hotel industry influenced external social dimension the strongest (SLF = 0.92). The environmental proactiveness was also revealed to be a quite high level ($\overline{x}$ = 7.71), for example in the hotel industry's efforts in creating a sustainable business for all stakeholders through environment preservation.

Hypothesised Model

Hair (2010) stated that indicators of a specific latent construct should converge (i.e.

convergent validity), which are indicated by significant high factor loadings with estimates ≥0.5 and are shown in Figure 1. Reliability is also another indicator of convergent reliability, which was constructed from construct reliability (CR) of 0.70 or above and an average variance extracted (AVE) of more than 0.50 to suggest good reliability (Hair, 2010). The CR and AVE were calculated from measurement model's standardised loading factor and estimated error; the results show CR > 0.70 and AVE > 0.50 (CR & AVE stakeholder pressure 0.90 and 0.66; CR and AVE dynamic managerial capability 0.82 and 0.61; CR and AVE performance 0.86 and 0.75), so the variables are deemed reliable.

A structural equation model (by LISREL 8.5) was computed to simultaneously test all the relationships as predicted by the four hypotheses, as shown in Figure 1. Evidently, all four hypotheses are corroborated. There is no single statistical test that best describes the strength of a model's predictions, so several measures of approximation were employed. To provide an adequate evidence of model fit, three or four indices can be used (Hair, 2010). With at least the $\chi 2$, degree of freedom, an absolute and incremental index shows good fit (>0.90), it has provided sufficient information to evaluate a model (Hair, 2010). The approximation measures found that $\chi 2 = 61.98$ (p-Value = 0.0187); df = 41; normed fit index (NFI), comparative fit index (CFI), incremental fit index (IFI), and the goodness-of-fit index (GFI) degree of fit was above 0.9 (NFI = 0.90; CFI = 0.95; IFI = 0.95; GFI = 0.90) show that the model is considered sufficient and therefore meets the approximation criteria. In addition, lack-of-fit was measured by means of RMSEA, where the value of a suitable fit should be lower than 0.80 and in the current study, the results were found to be sufficient (RMSEA = 0.071).

Specifically, Figure 1 indicates positive effect of stakeholder pressure perceived by managers on dynamic managerial capabilities, as hypothesised in H1; dynamic managerial capability has positive effect on environmental proactiveness, as hypothesised in H2; dynamic managerial capability fully mediates stakeholders pressure and environment proactiveness, as hypothesised in H3; finally, environment proactiveness has positive effect on firm's performance, as hypothesised in H4.

Furthermore, supported by a comparison between the model fit without direct effect (Model 1) including direct effect (Model 2), as shown in Table 1, it was found that the addition of direct path produced similar $\chi 2$, with the $\Delta\chi 2 = 0.005$ and $\Delta df = 1$ (Table 1), and there is a reduction of the direct relationship between stakeholders pressure and environmental proactiveness to the point where it was not statistically significant after mediating variable was included. Thereby it was concluded that the relationship between stakeholder pressure and environmental proactiveness was fully mediated by dynamic managerial capabilities.

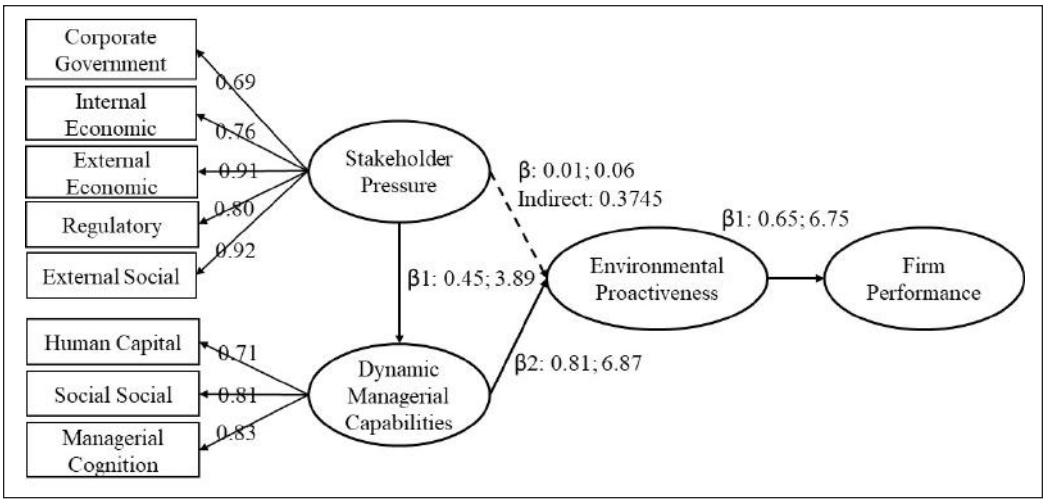

Figure 1. Structural model result
Note: Standardized regression coefficients and t-values are depicted on the paths. Dotted line represents indirect effect.

Table 1
Comparative of Goodness-of-fit Values

Fit Index	Recommended Value	Index Values		Degree of Model Fit	
		Model 1	Model 2	Model 1	Model 2
χ^2	p≤0,05	61.93 (p=0.024)	61.98 (p=0.0188)	Poor Fit	Poor Fit
χ^2/df	1≤ x < 3	1.474 (df = 42)	1.511 (df = 41)	Good Fit	Good Fit
GFI	≥ 0.90	0.90	0.90	Good Fit	Good Fit
RMSEA	≤ 0.080	0,068	0.071	Good Fit	Good Fit
NFI	≥ 0.90	0.90	0.90	Good Fit	Good Fit
CFI	≥ 0.90	0.95	0.95	Good Fit	Good Fit
IFI	≥ 0.90	0.95	0.95	Good Fit	Good Fit

Notes: χ^2= Chi-square; df = degree of freedom; GFI = Goodness-of-Fit; RMSEA = Root Mean Square Error of Approximation; NFI = Normed Fit Index; CFI = Comparative Fit Index; IFI = Incremental Fit Index

DISCUSSION

The focus of this study is on the mediating role of dynamic managerial capabilities on the relationship between stakeholder pressure and corporate environmental proactiveness, and its impact on firm performance. The results are as expected. The stakeholder pressure shows strong and positive effect on the dynamic managerial capabilities. There is a full mediation effect of dynamic managerial capabilities on the relationship between stakeholder pressures and environmental proactiveness. It indicates that whenever the leading managers sensed and perceived that there

are growing pressures on the sustainability issues from their stakeholders, they will maximise their efforts, exercise their length of capabilities to manage the pressures, and enhance firm level environmental proactiveness. With these types of internal organisational capabilities, a firm's performance is expected to improve.

As Helfat and Peteraf (2014) explain, t most management research regarded managerial cognition as an important attribute of organisational resource, specifically related to the role of dynamic managerial capabilities in the organisational change. Smith and Tushman (2005) suggested that top managers need to build a "paradoxical cognition" that enable them to pursue both exploration and exploitation in their business context simultaneously. As one of the novelty of this current study, and which adds to the findings of Helfat and Peteraf (2014) especially in the developing countries context, this study found that managerial cognition plays a bigger role compared with two other dynamic managerial capabilities dimensions in determining the mediating effect on the relationship between stakeholder pressure and corporate environmental proactiveness.

Managerial cognition in this study was assessed through its two sub-dimensions, which are perceived urgency and perceived manageability. The perceived urgency assessment focused on the cost that might arise if the firm did not take any action regarding certain issues. Previous research found that the higher the level of urgency, the higher the pressure for the organisation to respond and resolve the problems quickly and decisively (Dutton & Duncan, 1987; Ginsberg & Venktraman, 1995; Mitchell et al., 1997). Perceived manageability assessment concerns whether the firm possesses the resource to effectively respond to a specific set of pressures (Dutton and Duncan, 1987; Dutton et al, 1990). Perceived manageability of the leading managers represents the organisational degree of optimism, positive valence, and confidence to handle a set of circumstances (Ginsberg & Venkatraman, 1995; Kuvaas, 2002).

In the case where firm executives assess or sense a higher pressure from their stakeholder, an urgency to manage their response tends to occur, especially when certain cases that are publicly known or are assessed as the responsibility of the organisation (Dutton & Duncan, 1987; Ginsberg & Venkatraman, 1995; Mitchell et al, 1997). It produces decisive actions and efforts to resolve the issue in the organisation's favour (Andersson & Bateman, 2000). Furthermore, decision makers should also take interest group pressures into account and respond appropriately in order to preserve public image, goodwill, and reputation of the organisation (e.g., Dutton, Dukerich, & Harquail, 1994; Julian, Offori-Dakwa, & Justis, 2008).

In the context of hotel industry in Indonesia, when the operating hotel has to deal with environmental sustainability pressures from the groups of stakeholders, the greater accommodation often treated as

an urgency. The perceived manageability leads the hotel managers to respond the pressures on environmental sustainability issues and extend the array of possible accommodative responses. Most operating hotels which taken part in this study agreed on the importance of managing the environmental issues for several reasons, including to answer the inquiries from local and central governments' law and regulations, to increase their accommodative response to acknowledge the higher awareness of sustainable development from the major stakeholders, and to align with the global green movement that demand operating hotel chains to practice environmental responsibility-based policies in their business operations around the world.

This study is a timely response to the urgent call for empirical support in the field of stakeholder management, supporting Harrison, Bosse and Philips (2010), which suggests that the stakeholder relationship should be based on a firm's history of interaction with its stakeholders, and a firm's long-term success can be determined by its ability to maintain positive relationships with key stakeholders (Post, Preston, & Sachs, 2002a, 2002b). The results of the present study are also consistent with that of Lo (2013) who examined the Chinese hotel industry. Lo (2013) suggested that the stakeholder management practices had positive and significant influences on financial performance and customer satisfaction. This study strengthens the empirical evidence on the influence of environmental proactiveness toward a firm's performance. Within the theoretical frame, this study contributes in boosting the argument regarding the causalities between stakeholder management view, resource dependence theory, and cognitive theoretical perspectives, especially in the context of developing countries.

CONCLUSION AND IMPLICATIONS

This study extended the theoretical framework on the link between stakeholder management and organisational resource allocation on the hotel industry of Indonesia. As many as 127 managers from 127 hotels from major cities in Indonesia participated in this study, and 102 responses were found to be valid, yielding a valid response rate 80.31%. Four hypotheses were tested and several conclusions could be drawn.

First, from the result, it can be concluded that stakeholder pressure has a strong and positive relationship on the dynamic managerial capabilities in the context of hotel industry in Indonesia ($\beta = 0.45$). This result supports Hypothesis 1. Participating managers were asked about how stakeholders put pressure to ensure implementation of environmental responsibility in their hotels. The results show that managers perceived all the stakeholder groups to be putting high pressures, with the highest coming from external social stakeholders consisting of society, mass-media, and non-profit organisations (NGOs). This is followed by external economic stakeholders consisting of group of guests, suppliers, competitors, on-line travel agents, and event organisers

for Meeting, Incentive, Convention, and Exhibition (MICE) programmes.

Findings also show that dynamic managerial capabilities have strong positive relationship on the environmental proactiveness of the firm (β = 0,81). This study has additionally shown stakeholder pressure cannot directly affect environmental proactiveness without the mediating role of dynamic managerial capabilities (β = 0.01) on the relationship between stakeholder pressure and environmental proactiveness of the firm. Thus, Hypothesis 2 and Hypothesis 3 are supported. From the three dimensions of dynamic managerial capabilities, managerial cognition has the highest mediating role in determining the effect of stakeholder pressure upon environmental proactiveness of the firm in the context of Indonesia's hotel industry.

Finally, this study has found a strong and positive relationship between environmental proactiveness and firm performance. It indicates that a firm which proactively implements green strategies as a proxy of its environmental responsibility will boost its firm performance. This causal model adequately represents the observed relationships. The parameter of interest is valued at 0.65 (β = 0.65). This result leads to accept Hypothesis 4, as it confirms the existence of a strong and positive effect of environmental proactiveness on the firm performance.

From a practitioner's perspective, this study has three practical implications for managers in the Indonesia's hotel industry. First, there are at least five groups of stakeholders that should be managed wisely by the operating hotels, while each of the group has certain inquiries regarding the environmental sustainability issues. Indonesian hotels should place greater emphasis on developing trust between the hotel and its key stakeholders. This requires persistent effort from managers and also employees in building a good communication and relationships with the customers and other key stakeholders. The aim is to gain greater access to competitive resources and information, increase positive behaviour, and strengthen the relationship with stakeholder, leading managers are suggested to be more focused on the green business campaign. It can be accomplished through seminars, staff orientation initiatives, and/or employee booklets in order to communicate firm's commitment on sustainable development. Frontline managers are required to implement such strategies and must fully understand the processes required to better manage key stakeholders. It is frontline managers who implement strategy.

The results of this study also indicate that the higher the pressure from stakeholder, the higher the degree of dynamic managerial capabilities required to build, integrate, and reconfigure organisational resources and competences to achieve congruence to changing environmental conditions. It shows the significant role of leading managers in tackling the inquiries from those stakeholder groups that will impact on the strategies. Those firm level decisions are the result of managerial human capital, social capital,

and the relevance of managers' subjectivity perceptions in defining sustained superior performance. Planned training and development strategies, clarity of career advancement, competitive reward strategies, are among the options in managing human capital within the service sectors such as hotel industry.

Third, the results of this study show a strong positive effect of environmental proactiveness on firm performance. What is new in Indonesia is the relatedness of the two constructs. This study found at least 14 aspects of proactiveness strategies regarding environmental friendly business movement that could enhances firm performance. Operating hotels shall experience positive firm performance towards environmental proactiveness through strategic investment on the use of environmental friendly products, both in public services and every guess rooms, including a green campaign brochure or notification to pursue visiting guests to reduce the use of electricity, saving the water, or reduce water pollutions that came from washing detergent by reusing bath towel. From the operational aspect, it will also reduce money spent in those areas. The operating hotels are also suggested to implement high quality control management systems such as water and sanitation systems, waste management systems, and the use of safe and eco-friendly electricity-based equipment. This study shows that the higher the environmental proactiveness of the hotel, the higher the likelihood to achieve positive firm performance.

Finally, from the findings of the study, implications regarding policy implementation can be drawn. First, there should be a consistency in law and regulations in order to protect the natural resources between the local government and central government of Indonesia. It is recommended the local and central government develop environmental sustainability-based policies as a guidance in the implementations of their sustainable development. There has to be requirements regarding control management system to contain negative impact of business operations in the hotel industry. This will have an impact on water and sanitation management, and waste management systems including electrical equipment wastes that might harm the environment.

Local and central government are also suggested to develop a mandatory requirement for all the operating hotels to develop periodic report regarding their business environmental sustainability plans and implementations, including the environmental sustainability audit in order to evaluate the consistency of their programmes. The government shall strengthen the control management through the use of information system to facilitate the hotels to update their current information regarding waste management system, natural resource purifying policies, or achievement of business environmental sustainability certifications. Additionally, local and central government are must strictly regulate the number of hotels operating in one area, including the requirement on the distance between one hotel to another, especially in major cities where the supply of new

hotels are on the increase. The higher the number of hotels, the higher the potential risk of environmental and natural resource damages.

Study Limitation and Future Research Direction

This study has limitations. Only 127 responses were received, and only 102 could be included in the testing stage for various reasons, such as incomplete filling, especially on the part of the firm's performance, which indicated doubts and concerns that confidential information would be exposed. Further, there is a response with patterned answers; thus, the research team decided not to include it for further tests. Incomplete demographic data is another limitation. As this study is only focused on the hotel industry in Indonesia, generalising the findings to other countries, particularly those in Asia, will require further investigation.

This study also did not examine the conceptual model on different ownership patterns (e.g. SOEs and non-SOEs). Further research should look at the differences on ownership and their impact upon stakeholder management practices. Issues regarding cultural diversity in Indonesia's hotel industry is also interesting and should be explored, considering the large number of cities, local areas, and local cultures as the contextual background for the operating hotels. Finally, future research shall elaborate control variables in the model, such as market share, profitability, years of operation, and physical location to enrich the analysis.

The addition of measurement variables, which are possible antecedent factors affecting dynamic managerial capabilities, should be considered especially in relation to managing pressure from different social groups. The effect of environmental proactiveness as organizational responses and firm financial performance should be tested for their reliability and patterns of relevance in different contexts. It also shall be cross-industrial and tested to determine the heterogeneity and generalisation capabilities of the models. The results of this study ought to be interpreted carefully, considering the different types of environmental response that cannot apply to all possible specific cases (Hunt & Auster, 1990). In addition to the type of business, potential environmental problems, size of the organisation, the organisational structure, it is also important to consider the organisational and local-national culture.

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The Impact of Information Transmission and Liquidity toward Indonesian Corporate Bond Yield Spread

Antonius Siahaan[1]*, Irwan Adi Ekaputra[2] and Buddi Wibowo[2]

[1]*Faculty of Business and Humanities, Swiss German University-Indonesia, Alam Sutera Tanggerang, Banten 15143, Indonesia*
[2]*Faculty of Economics and Business, Universitas Indonesia, 16424 Depok, Indonesia*

ABSTRACT

This research aims to investigate whether information risk and liquidity become yield spread determinants of Indonesian corporate bond market. This study uses market microstructure approach. Previous research had revealed the impact of Volatility Model or the information effect on transaction (Balduzi et al., 1999; Brandt & Kavajecz, 2004; Green, 2004) and the sequential trade models used by Easley et al. (2002). In this research, information risk is measured by Probability of Informed Trading (PIN) model, liquidity is measured using Lesmond-Ogden-Trzcinka (LOT) model, and the Pastor and Stambaugh model is used to measure systematic liquidity risk. Using intraday transaction data of Indonesian corporate bonds during 2006-2011, all three main variables were found to influence Indonesian corporate bond yield spread. The average PIN of Indonesian corporate bonds is 7.98%, which is lower than that of the US market. The average LOT for the Indonesian corporate bond is 310 bps, which is less than that of the US market, and investor demand of illiquid bonds is more sensitive to systematic liquidity than liquid bonds.

Keywords: Indonesian corporate bond, information risk, Probability of Informed Trading, systematic liquidity, yield spread

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E-mail addresses:
antonius.siahaan@sgu.ac.id/antonius.siahaan@yahoo.com (Antonius Siahaan)
irwan.adi@ui.ac.id (Irwan Adi Ekaputra)
wibowo_buddi@yahoo.com (Buddi Wibowo)
* Corresponding author

INTRODUCTION

Asset pricing of corporate bonds is not only influenced by default factors but also by non-default ones. Initially, experts stated that the risk derived from a corporation's bonds is from the risk of default only (Collin-Dufresne, Goldstein, & Martin, 2001; Huang & Huang, 2003), which means the higher the risk of default of a corporate

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bond, the higher the yield and the cheaper the bond prices. However, subsequent research proves that the asset pricing of a corporate bond is also influenced by factors other than the risk of default (Chen, Lesmond, & Wei, 2007). These factors are classified as non-default risk. Among the dominant non-default factors is liquidity risk (Duffie & Singleton, 1999). O'Hara (2003), Easley, Kiefer and O'Hara (1996a) explain some determinants of yield spreads in the market, namely inventory (liquidity), market power and information-based factors. In addition to liquidity, Easley et al. (1996a) suspect that information risk is a non-default factor affecting asset pricing of securities in the market. Information risk is defined as the risk of error in setting the price and direction of the order faced by the market maker, because informed traders have private information that the market maker does not have (Easley, Kiefer, & O'Hara, 2002; Paperman, 1996b). When an informed trader places orders, the market faces great risk of loss if the trader is wrong in setting prices (Li, Wang, Wu, & He, 2009). In addition, there is empirical evidence that rare bonds of transactions tend to have greater price variability (Alexander, Edwards, & Ferry, 2000).

Information risk faced by the market maker in every transaction in the bond market differs, depending on the perception and interpretation of the informed trader on the impact of market information disclosure on the price of the bond (Green, 2004). As a buffer of liquidity in the market, market makers often must absorb information risk and then convert it into price and direction of transactions, either to informed traders who place orders based on information or to uninformed merchants whose orders are based on liquidity factors (Easley et al., 1996a). It was initially difficult to sort out non-default factors consisting of liquidity and other factors, including information risk (Easley et al., 2002). However, various structural models have been constructed to sort out the effects of information, as Green (2004) did via structural models and Easley et al. (1996a, 1996b, 2002) did with the Probability of Informed Trading (PIN) model. In parallel, the theoretical models of Easley and O'Hara (1987) were developed by Easley et al. (1996a), Easley et al. (1996b), and Easley et al. (2002). This theoretical model is known as the Probability of Informed Trading (PIN), which is a structural model that measures the risk of disclosure of information. The PIN is a ratio of the portion of arrival of informed trader to the total arrival of the order faced by the market maker. The researchers developed the theoretical model based on assumption of adverse selection of informed and uninformed traders arising from the asymmetric information in the market. This asymmetric information is caused not only by the unevenness or prevalence of public information dissemination in the market, but also by uneven analysis and prediction ability of market participants as the basis for responding to information in the flow of orders and prices they set (Brandt & Kavajecz, 2004; Green, 2004). As a measure, the PIN can be empirically

applicable to the ITC (order driven and continuous auction) stock market as shown by Easley et al. (1996a, 1996b, 2002) and on the government bond market in the United States as conducted by Li et al. (2009), who explain that PINs are derived from microstructure models that focus on individual securities and are estimated from transaction data from individual securities. Therefore, the PIN can be used to measure risk information both in the stock market and bond market. Furthermore, the PIN represents risks of securities-specific information. By observing the flow of investor orders, dealers know the intentions of their customers that provide valuable information to predict the next short-term price movement, although the transaction does not provide any fundamental information about the value of the securities being traded (Li et al., 2009). In addition, bond transactions are over the counter (OTC), making bond transactions more vulnerable to opposing information. Li et al. (2009) assert that the PIN is a neutral measure and can be used for various securities, such as stocks and government bonds, as long as the information on the microstructure of the transactions is known; i.e., the direction and size of the order flow. Based on the results of the literature review, it is clear researchers have not studied the measurement of information risk and its effect on the yield spread on intraday data on corporate bonds in Indonesia. Non-default determinants of empirical studies on the yield spread of corporate bonds are still focused on liquidity factors and have not considered any information risk whose existence affects the pricing of securities (Chen et al., 2007; Easley et al., 2002; Li et al., 2009). As an additional analysis, the present study will test the relationship of yield spread to country risk, systematic market liquidity risk whose existence affects bond yields (Alquist, 2010; Pastor & Stambaugh, 2003), certain bond-specific characteristics (i.e., maturity and amount of bonds outstanding), and the characteristics of bond transactions (i.e., transaction volume, price variability, transaction frequency, and bid-ask spread). All of these factors are indicators (or determinants) of liquidity required to assess yield spreads.

LITERATURE REVIEW

The Role of Information on Price Determination

When traders have inside information, they do not need to revise their beliefs regarding asset values from time t-1 to t when new information comes to market (Madhavan, 2000). Conversely, when new information comes along and traders do not have that information beforehand, their confidence revisions will be reflected in the order flow sign. Informed traders will buy when the price is below fair value and sell when the price is above its fair value. On large orders, asymmetric information causes the actual cost of the transaction to exceed half of the bid ask spread. Transaction costs are economically significant because large transactions will shift prices. In the market

microstructure, the market maker will buy or sell securities on demand. Because market makers take a central position and become price makers, market makers are often used as a starting point in conducting pricing studies on the market (Glosten, 1989; Stoll, 1989). Market makers will continuously provide liquidity to the market and enable transactions to occur continuously by balancing the timing of unsynchronised investor orders (Madhavan, 2000)

Structural Model Based on Information

The implications of the inventory model used to examine market price behaviour are transaction costs (including inventory costs) that determine bid ask spreads. Bagehot (1971) states that market prices depend not only on transaction costs, but also on the role of information. This model of information sets out from the adverse selection theory to demonstrate how bid ask spread persists, albeit in a competitive market with no explicit transaction costs.

Liquidity Measure

Lesmond, Ogden and Trzcinka (1999) introduced an alternative method of indirect estimation of liquidity based on the absence of zero yields, which is known as Lesmond Ogden Trzcinka (LOT). The LOT is a comprehensive liquidity cost estimate by including spreads and other costs borne on informed transactions, such as commission fees, opportunity costs, and cost-impact costs. The premise is, if the true value of a bond is affected by many stochastic factors, the new information will be reflected by the measured price only if the value of information from the marginal trader exceeds the total cost of liquidity. This implies that a liquidity cost limit exists for each asset, which equals the minimum value of information for a transaction. The probability of zero yield observation is higher within the liquidity cost limit than outside the liquidity limits. The model estimation is done through the maximum likelihood method to combine the estimation of risk factors related to the information in market and limit of liquidity cost.

Market Systematic Liquidity

According to Chordia, Roll and Subrahmanyam (2000) a market phenomenon indicates a market liquidity risk of all traded assets. Among the sources of occurrence are volume of transactions, inventory costs, market rates, and funds of various institutions that have similarities in investment behavior. Transaction volume is the main determinant of the dealer supply level. The variation in transaction volume leads to a mutual movement in determining the optimal inventory levels that dealers must reach. The mutual movement at the optimum inventory level will lead to mutual movement of individual bid ask spreads, quote depth, and other liquidity measures. Equal investment behavior of institutional investors leads to an interconnected pattern of trade, ultimately affecting the inventory levels of all dealers in the market. If inventory fluctuations are interrelated to each existing asset, the liquidity level of each asset in the market will also be related

(Chordia et al., 2000). Thus, within the risk faced by the dealer due to having inventory, there is a market liquidity component.

METHODS AND DATA

Empirical Research Model

In order to test the hypothesis, an empirical model was developed that explains various factors that researchers consider to influence the bond yield rate as a variable for price formation in the OTC market of Indonesian bonds. Specifically, the test of each determinant factor is done through the model parameter test contained in the research model. For each bond i on day t, the general empirical model constructed in this study is:

$$\begin{aligned} r_{i,t} = {} & \beta_0 + \beta_1 CountryRisk_{i,t-1} \\ & + \beta_2 Liquidity_{i,t-1} \\ & + \beta_3 InformationRisk_{i,t-1} \\ & + \beta_4 LikuidityRisk_{i,t-1} \\ & + \beta_5 PriceVariability_{i,t-1} \\ & + \beta_6 Maturity_{i,t-1} \\ & + \beta_7 BidAskSpread_{i,t-1} \\ & + \beta_8 OutstandingBonds_{i,t-1} \\ & + \beta_9 TransactionVolume_{i,t-1} \\ & + e_{i,t} \end{aligned} \quad (1)$$

Where for each bond i and day t:

$r_{i,t}$ = the average daily bond yield reduced by the corresponding maturity government bond yield;

$CountryRisk_{i,t-1}$ = credit default swap of daily state bonds corresponding to rating and maturity of bonds;

$Liquidity_{i,t-1}$ = measure of liquidity reflecting transaction costs;

$InformationRisk_{i,t-1}$ = the size of the risk of daily information reflecting the arrival rate of the order informed;

$LiquidityRisk_{i,t-1}$ = measure of systematic liquidity risk of daily market of OTC bonds in Indonesia;

$PriceVariability_{i,t-1}$ = daily price variability sizes weighted by volume of transactions;

$Maturity_{i,t-1}$ = the remaining age of the bonds until maturity in the year;

$TransactionVolume_{i,t-1}$ = average volume per transaction in a day weighted by total par value of issued bonds; and

$OutstandingBonds_{i,t-1}$ = natural logarithm of total par value of bonds issue

Data and Research Data Sources

In order to perform calculations on various measures of liquidity, following data is used: intraday transaction data reported by the dealer through Centralized Trading Platform (CTP) containing information including bond type, time, price, and transaction volume; settlement data of each bond transaction owned by KSEI-CBEST containing related information including end buyer, end seller, bond type, time, price, and transaction volume; bond reference price data announced by PHEI (or called IBPA); bid-ask spread data obtained from KSEI-CBEST; and the credit swap premium data of government bonds as a proxy for the country's risk premium, derived from KSEI-CBEST.

Measuring the Liquidity of Corporate Bonds

Measures of transaction costs with variants of the LOT model (1999). The LOT model can be used as an alternative to measure the transaction costs of bonds. The main advantage of the LOT model is that it requires only time series data on daily bond yields, making it easier and more efficient to estimate transaction costs for all bonds and the period of time for which daily data on yields is available. Additionally, the LOT model can be used to link transaction cost estimation with various theories and empirical studies of market efficiency and market structure analysis, so that traders and other market participants can use this model to justify the realised transaction costs and competitive profit expectations. Furthermore, marginal time traders in making decision rules when information is disclosed in the market can be regarded as transaction costs, whereas the price impact upon the executed order belongs to the transaction costs and should be recognised in measuring the performance of the market transaction strategy (Lesmond et al., 1999).

However, continuous bid-ask spreads on all bond series are very difficult, especially in the emerging market OTC market like Indonesia. Moreover, in Indonesia's OTC bond market, bonds are often traded on a small volume (thinly traded bonds), and therefore, bid-ask spreads become less suitable (Chen et al., 2007). To that end, the present study will use a modification or variant of the LOT model. With this model, researchers can avoid the limitations of using the bid-ask spread, because the effect of transaction costs is reflected directly on the daily bond yields. In this model, transaction cost effects are modelled through zero yield events. The hypothesis used is that if the information signal value is not more than the transaction cost, the marginal investor will decrease the transaction or not transact, causing zero yield. This model uses the roots of the theory of adverse selection and tries to estimate the cost of effective transactions for marginal traders. The marginal investor will transact on the arrival of new information (or accumulated information) that is not reflected in the bond price only if the transaction generates profit beyond the transaction cost. Transaction costs become a limit that must be passed before bond yields reflect new information. Bonds with high transaction costs will have a frequency of rare price movements and more zero yields than bonds with lower transaction costs.

Measuring Information Risk

It is assumed at the start of every day, there is an α probability of the arrival of new information, a signal of the value of the traded asset. Good news means high asset value ($\bar{V}_i$), and bad news means that the asset value is low (V_i). Good and bad news happens with $1-\delta$ and δ probabilities. On every trading day, traders come independently to the Poisson process throughout the day. The market maker sets the price when the traders arrives, based on the information at the time of the transaction. Orders from informed

traders come at the μ level (on the days of the information incident), and orders from uninformed buyers and sellers come at the ε_b and ε_s levels. Informed traders buy if they see good news and sell if they see bad news. The structural parameters of the model are estimated using transaction data. Easley et al. (2002) indicate that the likelihood function of the model for one day of transaction is:

$$L(\theta|B,S) = (1-\alpha)e^{-\varepsilon_b}\frac{\varepsilon_b^B}{B!}e^{-\varepsilon_s}\frac{\varepsilon_s^S}{S!} + \alpha(1-\delta)e^{-(\mu+\varepsilon_b)}\frac{(\mu+\varepsilon_b)^B}{B!}e^{-\varepsilon_s}\frac{\varepsilon_s^S}{S!} + \alpha\delta e^{-\varepsilon_b}\frac{\varepsilon_b^B}{B!}e^{-(\mu+\varepsilon_s)}\frac{(\mu+\varepsilon_s)^S}{S!} \quad (2)$$

Where B and S are the total number of buy and sell orders for that day, and $\theta = (\alpha, \mu, \varepsilon_b, \varepsilon_s, \delta)$ are vector model parameters. The likelihood function has an interpretation. On a day without any news, happening with a $1-\alpha$, probability, pure buy and sell orders come from uninformed traders who come with intensity ε_b for buyers and ε_s for sellers. On a good news day, happening with the probability of $\alpha(1-\delta)$, an informed trader who comes with the intensity of μ will buy the asset. Thus, buy and sell orders will come with intensity $\mu+\varepsilon_b$ (buyer informed and uninformed) and ε_s (uninformed seller). On a bad news day, happening with the probability of $\alpha\delta$, an informed trader who comes with the intensity of μ will sell the asset. Thus, buy and sell orders will come with intensity ε_b (uninformed buyers) and $\mu+\varepsilon_s$ (informed and uninformed sellers).

By incorporating an independent structure throughout the transaction days, the likelihood function for observation for I day is obtained:

$$L(\theta|M) = \prod_{i=1}^{I} L(\theta|B_i, S_i) \quad (3)$$

Where (B_i, S_i) is the transaction data for day $i = 1, \ldots, I$.. Estimation of model parameters is done by maximising the likelihood function above. From the above model, the arrival of unobserved private information can be presumed through transactional data observed, among them the portion of an informed transaction (PIN) that represents the risk of information and is defined as:

$$PIN = \frac{\alpha\mu}{\alpha\mu + \varepsilon_s + \varepsilon_b} \quad (4)$$

Where $\alpha\mu + \varepsilon_s + \varepsilon_b$ is the arrival rate of all transactions and $\alpha\mu$ is the transaction arrival rate based on the information.

Measuring Systemic Market Liquidity Risk

To measure the risk of systematic liquidity of the market, researchers used the framework proposed by Alquist (2010), Chordia, Roll and Subrahmanyam (2001), Li et al. (2009),

and Pastor and Stambaugh (2003). Due to the relatively short observation period of bond transactions, September 2006 to June 2011, and since not all bond series are within the observation period, data availability for time series modelling is limited. Therefore, to obtain a measure of systematic market liquidity risk, liquidity measures are converted first into daily bases. In this study, market liquidity on the day counts as an aggregation of the liquidity of individual bonds transacted on that day:

$$S_t = \frac{1}{N_t}\sum_{i=1}^{N_t} Liquidity_{i,t} \tag{5}$$

Systematic liquidity risk is measured as a bond yield sensitivity to innovation / unexpected changes in market liquidity. To that end, the researchers will estimate the time series selected by Scwarz information criterion (SIC). The ARMA model (K, M) can be written as:

$$S_t = \rho_0 + \sum_{k=1}^{K} \rho_k S_{t-k} \cdot + \sum_{m}^{M} \rho_{K+m}\eta_{t-m} + \eta_t \tag{6}$$

If the S_t series is non-stationary, it needs to be stationary by taking the differencing form and a time series model according to the SIC criteria as follows:

$$\Delta S_t = a_0 + \sum_{p=1}^{P} a_p \Delta S_{t-p} + \sum_{q=1}^{Q} a_{P+q} e_{t-q} + e_t \tag{7}$$

It is estimated throughout the sample period to build a series of liquidity shocks. Unexpected changes in market liquidity on a day are defined as:

$$LiquidityRisk_t = -\frac{\hat{\eta}_t}{\hat{\sigma}_\eta}$$

or

$$LiquidityRisk_t = -\frac{\hat{e}_t}{\hat{\sigma}_e} \qquad (3.8) \tag{8}$$

RESULTS AND ANALYSIS

Testing of the Yield Spread Model of Corporate Bonds

The researchers estimate the regression model in Equation 3.1 and using the panel regression analysis, model estimation results are shown in Table 1.

Table 1
Determinants of Indonesian corporate bonds yield spread

Panel A: Test the best panel method

Statistical Test	**Regression 4**
LM Test	123.864***
Hausman Test	10.087

Panel B: Estimate Model of Determinant of Corporate Bonds Yield Spread

	Random Effect Method	**PLS Method**
Variable	**Regression 4a**	**Regression 4b**
Constant	0.176**	0.164***
	(2.497)	(22.415)
$CountryRisk_{i,t-1}$	-0.005***	-0.005***
	(-70.428)	(-68.553)
$Liquidity_{i,t-1}$	0.340***	0.296***
	(55.289)	(63.485)
$InformationRisk_{i,t-1}$	-0.003***	-0.001
	(-4.774)	(-1.596)
$LiquidityRisk_{i,t-1}$	-2.17E-04	2.13E-04
	(0.000)	(-1.395)
$PriceVariability_{i,t-1}$	0.002***	0.002***
	(9.603)	(9.023)
$Maturity_{i,t-1}$	0.001***	4.44E-04***
	(7.374)	(6.878)
$BidAskSpread_{i,t-1}$	0.011	-0.012
	(0.993)	(-1.016)
$TransactionVolume_{i,t-1}$	-0.026**	-0.040***
	(-2.087)	(-3.029)
$OutstandingBonds_{i,t-1}$	-0.005*	-0.004***
	(-1.814)	(-15.553)
Adj. R-squared	0.296	0.304
F-Statistic	1,010.552***	1,049.858***

Source: Regression 4 (a, b) is estimated from Equation 3.1. In regression 4, liquidity is included in the calculated market of the data aggregation (differencing) LOT size. The values in parentheses show 't-statistic'. The *** sign indicates significance at the 1% level. The ** sign shows significance at the 5% level. * Signs indicate significance at 10% level. The observation period was from October 17, 2006, to June 29, 2011.

DISCUSSION

Testing of Information Risk

The hypothesis of this study is PIN values negatively affect yield spread. Table 1 shows that PIN has a significant negative effect on bond yield spread. This suggests that the hypothesis built related to the negative effect of PIN on the yield spread of corporate bonds can be statistically accepted. In the context of information risk model developed by Easley et al. (1996a,

1996b, 2002), PIN reflects probability of the arrival of an order from an informed trader to a market maker. As a result, a market maker may experience the risk of incorrect decision making in addressing the order flow placed in the informed trader and may incur losses. To cover losses from transacting with an informed trader, the market maker will exploit transactions with uninformed traders, where they typically trade because they are driven by liquidity and not the result of information. The market maker will seek to profit from the difference of the transaction price (market excess return) with uninformed traders. Thus, the relationship between "market excess return" and the PIN as a measure of information risk is positive. This supports the hypothesis and is empirically proven by Li et al. (2009) on government bond markets in the US and by Easley et al. (2002) in the US stock market. The profit earned from the transaction ("market excess return") can only be obtained by the market maker when the difference between the selling price of a bond and the purchase price is positive, meaning that there is a price increase between buying and selling. When the selling price of the bond rises, the yield to maturity of the bond held by the market maker will fall, because prices and yields to maturity have a negative relationship. Therefore, it can be said that when the risk of information reflected on the PIN increases, the market maker will make a profit by raising the bond sale price, and then the yield to maturity of the bond will fall. That is, the relationship between yield to maturity and risk information is negative. In this study, researchers used the proxy yield spread instead of market excess return as shown by Easley et al. (2002) or Li et al. (2009). Empirically, researchers also found the results to be consistent with the negative relationship between yield to maturity with information risk; in other words, when the PIN increases, then the yield spread will decrease. However, when yields to maturities on government bonds are independent of corporate bonds, the rising yield to maturity of corporate bonds also means an increase in the yield spread, thus indicating the risk of information has a negative relationship with the yield spread.

Testing of Bond Liquidity

Table 1 shows that liquidity had a significantly positive effect on yield spread. This suggests the positive effect of illiquidity on the yield spread of corporate bonds. This study used LOT to measure the amount of marginal cost that investors need to be willing to transact, in either buying or selling bonds. By definition, liquidity is the size of a bond quickly transacted at a large quantity, at a low cost, and without significantly altering the price (Amihud, 2002; Pastor & Stambaugh, 2003). Thus, the more liquid, the lower the transaction costs and the lower the yield obtained by investors, because the price is fixed or down but not significant. Based on the model of Lesmond et al. (1999), the greater the marginal cost investors demand for transactions, the less liquid a bond is, and the yield to maturity demanded by investors is also increasing. The results of

the empirical model estimation in Table 1 show the positive and significant direction of the effect of bond illiquidity on yield spread. The rising cost of bond transactions in the market will lower the level of bond liquidity and encourage investors to increase their liquidity premiums as compensation for the uncertainty of bonds. Thus, based on this explanation, the hypothesis that LOT has positive effect on yield spread is supported and consistent with the concept of transaction costs discussed by Lesmond et al. (1999) and Chen et al. (2007). These findings support the results of previous studies, such as Chen et al. (2007), Jankowitsch, Mösenbacher and Pichler (2003), and Longstaff, Mithal and Neis (2005) who found a negative effect of liquidity on bond yields. They found the more liquid an asset is, the lower illiquidity risk demanded and the lower the required yield.

Testing of Systematic Market Liquidity Risk

Table 1 shows that Liquidity Risk has a negative effect on bond yield spreads and is significant with proxies that measure using bid-ask spread. These findings suggest negative effects of systemic liquidity risk on the market yield spread. Price and yield to maturity have a negative relationship (Ross, Westerfield, & Jaffe, 2003), therefore, these findings support those of Longstaff (2004), Pastor and Stambaugh (2003), Li et al. (2009), and Alquist (2010), who found that systematic market liquidity risk increased market excess return from government bonds. Investor demand on less liquid bonds is more sensitive to market systematic liquidity than liquid bonds and have an impact on the high price sensitivity on less liquid bonds (Chung, 2008; Longstaff, 2004). In times of crisis, investors will balance portfolios to more liquid bonds, although they have to sell less liquid bonds at a higher cost (Chung, 2008). Systematic market liquidity risk can be measured by standardised innovations of market liquidity, such as those proposed by Alquist (2010), and Pastour and Stambaugh (2003). The greater the innovation, the more sensitive a bond will be to changes in market liquidity; hence, the higher systematic market liquidity risk an investor faces when holding this bond (Li et al., 2009). Therefore, investors will ask for higher compensation on this bond. This compensation will be reflected in the high market excess return of the price difference (Alquist, 2010; Li et al., 2009) and the low yield spreads demanded. This is because, theoretically, prices have a negative relationship with yields to maturity (Ross et al., 2003). Thus, the higher the systematic liquidity risk of a bond market, the lower yield spread the investor will demand. In the bond market, as market conditions worsen, government bonds are relatively more active than corporate bonds. Moreover, the risk of default when holding government bonds is relatively lower than corporate bonds, so a phenomenon known as flight to quality (Longstaff, 2004). As a result, the corporate bond market liquidity will disappear and shift to the government bond market; this phenomenon is known as flight to liquidity (Alquist, 2010; Chung,

2008; Longstaff, 2004). The next impact is the price discount on the government bond market that seems much higher than the corporate bonds. When the market in general worsens, the price discounts on corporate bonds will be very high (due to quality and liquidity), so investors will choose to sell government bonds to meet their liquidity requirements rather than selling corporate bonds. As a result, government bond prices will move down (discounted) and cause yields to maturity to rise. At the same time, the price of corporate bonds is relatively silent because of the hold action of investors, resulting in a relatively fixed yield to maturity. Thus, the yield spread of corporate bonds will be inverted, and this negative yield spread gets bigger along with falling government bond prices due to the worsening market conditions.

CONCLUSION

There is very limited analysis of information risk in the market microstructure literature on Indonesia. Based on the results of the study on the impact of risk information and liquidity on the yield spread of corporate bonds in Indonesia using intraday data, this research can draw several conclusions as follows. First, liquidity has a negative effect on the corporate bonds yield spread. The lower the liquidity, the greater the cost of the requested transaction, thus causing the bond to become less liquid and driving up the yield spread demanded by investors. Liquidity measured by Lesmond Ogden Trzcinka model reflects the marginal cost demanded by investors in order to transact. Therefore, the larger LOT value actually reflects the low liquidity or increased illiquidity so that the LOT value will have a positive effect on the yield spread of corporate bonds. The liquidity of Indonesian corporate bonds is quite low when compared with the bond market in the United States. By using the LOT proxy, the average transaction cost in Indonesia reached 3.10% (or 310 bps), while in the US, it reached only about 26-54 bps for investment category bonds and 22.5-95.5 bps for speculative bonds (Chen et al., 2007). This shows that Indonesia's corporate bond market is still less liquid than that in the United States. Second, information risk negatively affects the corporate bonds yield spread. As the risks of information increase due to the increased arrival of informed transactions, the market maker will make a profit by raising the bond sale price. When the sale price of the bond increases, the yield spread of the bond held by the market maker will decrease. Thus, when the risk of information as estimated by Probability of Informed Trading (PIN) increases, it will cause the yield spread of corporate bonds to decline. The average value of Indonesian corporate bond issuance is 7.98%, and this value is lower than government bonds in the United States according to the findings of Li et al. (2009), which is 26%. The low PIN value of the Indonesian market indicates that the informed trader's exploitation rate is lower than that of the US bond market. Third, systematic liquidity risk of the market negatively affects the yield spread of corporate bonds. Investor demand on less liquid bonds is more sensitive to systematic

liquidity of the market than liquid bonds and has an impact on the high price sensitivity on less liquid bonds (Chung, 2008; Longstaff, 2004). Thus, the higher the systematic liquidity risk of a bond market, the lower yield spread the investor will demand.

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Roles of Owner-Managers in Achieving SMEs' Dual Goals

Valentinus Ricky Sjofyan[1] and Ruslan Prijadi[2]*

[1]Graduate School of Management, Faculty of Economics and Business, Universitas Indonesia, 16424, Depok, Indonesia.
[2]Department of Management, Faculty of Economics and Business, Universitas Indonesia, 16424, Depok, Indonesia.

ABSTRACT

Small and Medium Enterprises (SMEs) play an important role in the Indonesian economy. Not only do they generate jobs, they also nurture a culture of innovation and entrepreneurial skills that enable small firms manage economic downturns with minimal fallouts. Because of the SMEs' unique management characteristics and mixed business-personal goals, they are an interesting subject of research. This study examined if the strategy of SMEs executed by owner-managers affected their performance (financial/economic vs. non-economic). One of the strategies pursued by SMEs is a differentiation strategy, characterised by a unique product that is hard to imitate and results in customers' willingness to purchase goods or services at higher prices. Using a small sample size and applying SEM-PLS, this research attests to the strategic role of owner-managers for achievement of their non-economic goals, but not the SMEs' economic/financial goals. These results imply the presence of non-financial goals that may be considered to be important or perhaps more important than the financial goals. Small sample size and self-assessed performance measures are among the limitations of this research.

Keywords: Financial goals, non-financial goals, owner-manager, small enterprise, strategy

INTRODUCTION

Small and Medium Enterprises (SMEs) are considered to be one of the most flexible types of business especially during economic challenges (Nugroho, 2015). He finds that SMEs in Indonesia survive global economic challenges because of their flexibility. During the 1997-1998 crisis, 96% of SMEs survived whereas many large enterprises

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E-mail addresses:
ruslan.prijadi@ui.ac.id. (Ruslan Prijadi)
v.ricky.sjo@gmail.com (Valentinus Ricky Sjofyan)
* Corresponding author

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collapsed (Bank Indonesia, 2015). The lean structure of SMEs allows them to adapt faster in a fast-changing economic environment. Healthy SMEs contribute significantly to the economy by creating more employment opportunities, generating higher production volumes, increasing export and introducing innovativeness and entrepreneurship. The SMEs' contribution to Indonesia's GDP has increased from 57.84% to 60.34% in the past five years. In 2015, SMEs represent 60.7 million units (99.9%) and accounted for approximately 130 million workers (Badan Perencanaan Pembangunan Nasional, 2016).

Despite their success, only 30% of SMEs have access to formal financial sources which contributes to some of their traditional problems (Bank Indonesia, 2015). Earlier Winarni (2006) indicated that Indonesian SMEs still face various fundamental weaknesses, including lack of capital and marketing ability, plain organisational structure, low management quality and poor human resources quality. They have no financial reports nor legal status and low technological capacity. These has led to both weak business network and market penetration as well as low market diversification. They do not have economies of scale as they are unable to lower production cost and this means most SMEs do not have a competitive advantage.

Porter (1980) has long identified three generic strategies that are applicable to the majority of firms: a) cost leadership, which focuses on increasing profits by reducing costs and increasing market share through lower prices; b) differentiation, where firms pursue competitive advantage by differentiating their product or services, making them more attractive than that of their competitors' and creating hard-to-imitate products or services Thus, the customers have a less comparable alternative and therefore are less price sensitive (Armstrong, 2013). The third alternative is a focus strategy, a combination of cost leadership and differentiation, where the firms target niche markets. By understanding the dynamics of the market and the uniqueness of customers, the firms develop uniquely low-cost or well-specified products for the market.

The SMEs tend to pursue a differentiation strategy because quality of service is their strength (MacLaran & McGowan, 1999). Armstrong (2013) reports that SMEs will differentiate their products and services through creating the highest possible quality, and/or providing better services. By providing the highest possible quality to customers, SMEs improve their survivability. Firms that pursue better services, on the other hand, will build perceived brand awareness through reputation and word-of-mouth promotion.

This research aims to examine if the differentiation strategy of SME owner-managers leads to higher performance. For most of the SMEs, this strategy is not as easy as *cost leadership*, but not as difficult as a *focus strategy*. This strategy choice should make the current research relevant and timely (Li & Tan, 2013; Thomas & Ramaswamy, 1996). This research presumes

that SMEs have two different sets of goals: economic/financial and non-financial goals (such as social responsibilities and personal satisfaction). The results confirm that owner-managers play a crucial role in achieving non-financial goals, directly or indirectly, through the firm's strategy. However, the results cannot verify the important role of owner-managers in achieving economic/ financial performance. Thus, this research contributes to our better understanding that SMEs' achievement might not be correctly measured in financial terms alone.

The remaining sections are arranged as follows. The next section synthesises important ideas through a literature review, followed by the description of research methodology. Subsequently, findings of the research are presented and discussed. In the last section, conclusion and recommendations are provided.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Goals of SMEs

Thus far, there is no single criteria to measure the performance of SMEs due to the multi-dimensional aspects of their performance (Gerba & Viswanadham, 2016). Usually, a firm's performance is measured based on staff strength or financial performance, such as profit, turnover or return on investment (Forsaith & Hall, 2001). These measures assume that all small business owners want to 'grow' their businesses (Walker & Brown, 2004).

However, there is another side to the success story of SMEs. Previous studies have recognised the importance of non-financial performance of the firm, including job and personal satisfaction, independence and work- life balance (Buttner & Moore, 1997; Kuratko, Hornsby, & Naffziger, 1997; Walker & Brown, 2004). Similarly, Jennings and Beaver (1997) argue that success is more than money and pursuit of financial goals; it involves some aspects of intrinsic reward for the entrepreneurs themselves.

Owner-Managers and Strategy

Strategy is a key aspect of management in large organisations (Gibcus & Kemp, 2003). Large firms often have written or formal statements of their strategies. In contrast, strategies are less formal in small firms and originate from owner-managers who are the key decision-makers (McCarthy, 2003). Because small firms do not normally write statements of strategy, these are inferred from evolving patterns of owner-managers' behaviour and resource allocation (Schindehutte & Morris, 2001). Strategies are based on the owner-managers' interpretations of and reactions to the situations faced by the firm (d' Amboise, 1993; Williams & Tse, 1995).

This research will examine if owner-managers' characteristics have a positive and significant influence on differentiation strategy. The SMEs' owner-manager characteristics are represented by indicators such as innovativeness, planner, the use of new technology, risk taking, and work independently. Differentiation strategy on the other hand will be represented by indicators such as firm offer highest possible

quality, better service, and customised products.

Hypothesis 1: Owner-manager's characteristics influence their differentiation strategy.

Firm's strategy and economic/financial performance. A differentiation strategy (Porter, 1980) is where a firm offers something different from its competitors. One of the characteristics that a differentiation strategy possesses is that it can lead to a higher performance when the price premium for the differentiation exceeds its additional costs. Firms can achieve differentiation by varying the product characteristics individually or simultaneously. In practice, they are frequently changed in combination (Leitner & Güldenberg, 2010).

Hypothesis 2: Differentiation strategy influences a firm's financial performance.

Firm's strategy and non-economic/financial performance. The SME owner-managers have multiple goals that are not limited to economic growth (Beaver, 2002). This research attempts to seek evidence that the owner-managers' choice of strategy influences the non-financial performance of their firms, such as their personal satisfaction and pride.

One of many factors that influence someone to start a business and become owner-managers is their characteristic of being a risk taker and a preference to work independently (Kuratko et al., 1997) or other entrepreneurial characteristic, such as innovativeness and pro-activeness. Although the strategy may not initially show an economic value such as return of capital or employment growth, the owner-managers will already feel successful to a certain extent.

Hypothesis 3: Differentiation strategy influences firms' non-financial performance.

Owner-managers and firms' financial performance. In SMEs, usually the owners act as managers who implement the strategy. Therefore, their characteristics influence the success of the strategy. This research uses measures developed by Blackburn, Hart and Wainwright (2013) where the owner-managers were asked to rate themselves against statements showing their likelihood to innovate, act opportunistically and independently, use new technologies, assume risk, become bored easily, or seek out publicity.

Although specific managerial skills and behaviours associated with a differentiation strategy were not directly addressed by Porter, Szilagyi and Schweiger (1984), they inferred that a differentiation strategy requires product engineering and creative skills and ability, which implies the use of new technologies, taking risks and behaving opportunistically. Therefore, the owner-manager's characteristics significantly influences the relationship between differentiation strategy and a firm's performance.

Hypothesis 4: Owner-managers' characteristics influence firms' financial performance.

Owner-managers and non-economic/ financial performance. This research assumes owner-managers' characteristics indicate their level of satisfaction, pride, and social recognition. Since owners who have characteristics such as being innovative, a risk taker, planner, and preference for working independently are strongly affiliated with entrepreneurial traits, they are also aggressive and concerned about social recognition (Kotey & Meredith, 1997).

This study suggests that when these owner-managers own a business, being a boss and generating employment, business ownership increases their personal satisfaction as well. Therefore, this study proposes a causality between these characteristics (innovative, a risk taker, planner, and preference for working independently) and non-financial performance.

Hypothesis 5: Owner-managers' characteristics influence firms' non-financial performance.

Conceptual model. This research adopts Armstrong's conceptual (2013) model by looking at the SMEs' generic strategy in differentiation and combining it with Blackburn et al. (2013), who focus on owner-manager characteristics. This research attempts to verify the strong causality between owner-managers of SMEs and their business strategy. According to Sarwoko, Surachman and Hadiwidjojo (2013), the stronger the characteristic, the greater the performance of the firm. Agbim, Oriarewo and Zever, (2014) found a significant moderating effect of the entrepreneur's characteristic towards the relationship between interest and frequency of scanning towards entrepreneurial performance. This relationship implies the entrepreneur characteristic has a strong influence towards the owner-manager's decisions and the operation of their business.

While previous research correlates the choice of business strategy between competence-based and flexibility-based strategy to a firm's growth and survival (Armstrong, 2013), this research focuses on the differentiation strategy (competence based), as suggested in earlier research, whereas the flexibility-based strategy is too difficult to be identified in SMEs' business.

According to earlier research, success can be interpreted according to a specific performance measure (Brush & Vanderwerf, 1992), while others interpreted success as high performance (Brooksbank, Kirby, Tompson, & Taylor, 2003). The debate regarding what constitutes success and the way to define and measure performance in SMEs is unresolved (Leković & Marić, 2015). Success and performance of small businesses are very narrowly connected (Brooksbank et al., 2003). For businesses to be successful, financial measurements require increases in profit or turnover and/or increased numbers of employees. Walker and Brown (2004) argue that the most obvious measures of success are

profitability and growth. In economic terms, this is considered to be profit maximisation (Jennings & Beaver, 1997). For SMEs, goals do not necessarily coincide, nor are they comparable and a real success statement is difficult.

Based on the above arguments, this research proposes an overall conceptual model as shown in Figure 1.

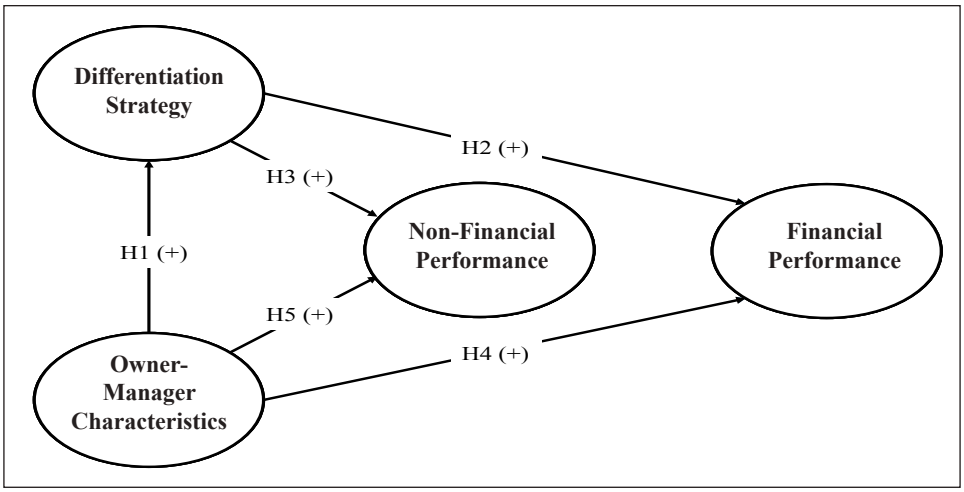

Figure 1. Conceptual model
Source: Authors' formulation

METHODS

Sample

Respondents of this research were SMEs located in Jakarta and Depok, West Java. The of SMEs in Indonesia according to Law No. 20/ 2008 are: (1) Micro businesses whose net assets are up to Rp.50 million, excluding land and buildings, or an enterprise with annual revenues less than Rp.300 million (net); (2) Small businesses whose net assets are between Rp.50 and Rp.500 million, excluding land and buildings, or an enterprise with annual revenues between Rp.300 million and Rp.2.5 billion; (3) Medium businesses whose net assets are more than Rp.500 million up to Rp.10 billion, excluding land and buildings, or an enterprise with annual revenues more than Rp.2.5 billion up to Rp.50 billion. Using the above criteria and the convenience sampling technique, this research surveys 162 SMEs with a final sample size of 131. The sample size is relatively small but is expected to still the able to document the existence of the relationship among the variables. A follow up research with a larger sample size will be conducted in the future.

Variables

The variables used in this research are adopted from several earlier researches (see

Table 1). For each of variables, this research utilises three and five indicators that are measured using a Likert scale where 1 = strongly disagree, 2 = disagree, 3 = almost agree, 4 = somewhat agree, 5 = agree, and 6 = strongly agree.

The variables indicated in Table 1 are converted into questionnaires. Table 2 shows the operationalisation of the construct "Owner-Managers Characteristics," which include six indicators. Due to limited space, however, other variables are not discussed or elaborated in this paper.

Estimation Method

The research is carried out using a quantitative methodology, namely Structural Equation Model (SEM). To accommodate the structural equation analysis, this research uses PLS (Partial Least Square). First, PLS is suitable in research that focuses on areas where theory is not yet well developed, or in other words, is exploratory based. Second, PLS is easier operationalised in applied settings. Third, PLS is useful for research with relatively small sample sizes. Fourth, it is also appropriate when there are limited participants and when the data distribution is skewed, e.g. micro sized enterprise.

Table 1
Description of variables

Variables/Constructs	Description	Reference
Owner-Managers' Characteristics	Owner-managers of the SMEs were asked to rate themselves against statements that reflected their likelihood to innovate, act opportunistically and independently, use new technologies, take risk, and whether they could become bored easily.	Blackburn et al. (2013).
Differentiation Strategy	A competitive strategy that is characterised by a unique product that is hard to imitate by competitor, resulting in customers having a less comparable alternative and thereby less price sensitive.	Armstrong (2013); Porter (1980)
Firm's Financial Performance	Self-assessment using common indicators used to measure business performance, financially or economically. Reported SMEs' financial data is not available.	Reid & Smith (2000); Paige & Littrell (2002); Greenbank (2001).
Firms' Non-Economic/ Non-Financial Performance	Personal satisfaction, pride and flexible lifestyle as non-financial goals or consideration of SMEs' owners when they run the business.	Walker & Brown (2004).

Table 2
Operationalise of variable

Variables	**Definition**	**Indicators**	**Source**
Owner-Managers' Characteristics	Owner-managers are asked to rate themselves against either/or statements that reflect their likelihood to innovate, act opportunistically and independently, use new technologies, take risk, and become easily bored.	Innovative Planner Uses new technologies Restless and easily bored Risk taker Work Independently	Blackburn et al. (2013)

RESULTS

Descriptive Statistics

The following is a description of business sectors, location, size, and business experience by the respondents. The home industry sector had the largest representation (35% of the respondents). Most of these SMEs produce snacks, milk-based products, and clothing. Retail is the second largest, 31%, followed by food culinary, 18% (see Table 3).

Table 3
Respondents profile by sector

Sector	Number	Percent (%)
Manufacture	46	35%
Retails	41	31%
Food Culinary	24	18%
Services	15	11%
Others	5	4%
Total	131	100%

Based on the business size, the respondents were primarily micro-sized enterprises, accounting for 49% of the sampled population. This type of enterprise is characterised by a revenue that is less than Rp.10 million per month and has no more than two employees. About 34% of the respondents who represent small sized enterprises, have revenue between 10 million and 50 million a month and medium sized enterprises had revenue more than 50 million per month (Table 4).

The survey was conducted in Jakarta and Depok. About 35% and 34% of the respondents were from Jakarta and Depok respectively. The rest were from satellite cities near Jakarta, such as Tangerang (10%), Bogor (8%) and Bekasi (7%) (Table 5).

Based on their business experience, most of the SMEs surveyed in this study, 47%, are new ventures, being 2 years old or less. This is followed by enterprises that have been established for three and five years (31%) and the rest are more than 5 years (22%) (Table 6).

Table 4
Respondent profile by size

Size of Enterprise	Number	Percent (%)
Micro	64	49%
Small	45	34%
Medium	22	17%
Total	131	100%

Table 5
Respondent profile by location

Location	Amount	Percent (%)
Jakarta	46	35%
Depok	44	34%
Tangerang	13	10%
Bogor	10	8%
Bekasi	9	7%
Other cities in West Java	9	7%
Total	131	100%

Table 6
Respondent profile by business experience

Business Experience	Amount	Percent (%)
2 Years or less	62	47%
3 – 5 Years	41	31%
More than 5 years	27	22%
Total	131	100%

Validity of the Model

In order to validate the model, this research used Goodness of Fit (GoF) measures. The overall GoF of the model should be the starting point of model assessment. If the model does not fit the data it means the latter contains more information than the model conveys. There are many measures of validity obtained from the SEM-PLS, but not all are reported here. The GoF values of above 0.35, 0.15, and 0.02 can be regarded as strong, moderate, and weak respectively. Based on the results of our model, GoF value is 0.380, greater than 0.36 and therefore, the model is sufficiently valid.

This research uses loading factors to evaluate construct validity. The minimum eligible loading factor point required is 0.7 (Fornell & Larcker, 1981), while the minimum eligible Cronbach's Alpha is 0.7 (Fornell & Larcker, 1981). To evaluate convergent validity, AVE was assessed. The required AVE is above the level of 0.5 (Hair, Ringle, & Sarstedt, 2011). Based on these criteria, some of the owner-managers' indicators (risk taker, work independently and restless and easily bored) do not pass the validity and reliability measurement tests, and therefore are dropped from further analysis. Similarly, among non-financial performance measures, only NFP_3, NFP_4, and NFP_5 (which indicate prides and personal satisfaction) are considered valid. The rest do not fit the validity and reliability criteria.

Structural Model

The structural model exhibits all possible relationships among variables or constructs in the model. This model is used to test the hypotheses. Figure 2 shows the t-values of the model after excluding all indicators that do not pass the validity criteria. The values equal to or higher than 1.96 indicate that the causality is statistically significant. Thus, in this research, two paths are not statistically significant, i.e. from owner-managers to financial performance.

Table 7
Goodness of fit result

Latent Variable	Communality	R-Square
Differentiation Strategy	0.670	0.329
Owner-managers' Characteristics	0.638	-
Non-Financial Performance	0.671	0.225
Financial Performance	0.743	0.089
Average Value	0.680	0.214
GoF $\sqrt{AVG(Communality) * AVG(R-Square)}$	0.380	

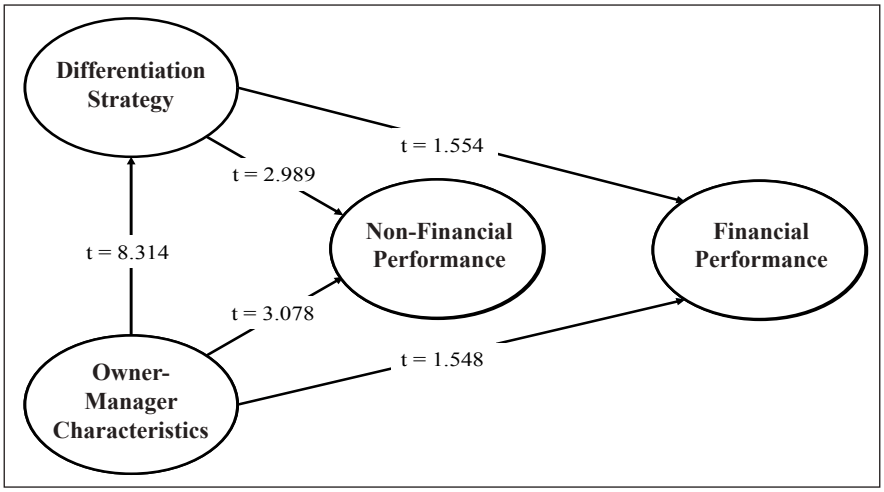

Figure 2. Structural model

DISCUSSION

The results suggest that owner-manager's characteristics have a positive impact on differentiation strategy. This finding supports previous research by D'Amboise (1993), and Williams and Tse (1995) who showed that owner-manager's subjective behaviours and characteristics affect firms' strategy.

While it is already known that owner-managers of small firms determine the direction of strategy, differentiation strategy in this research is proven as the strategy that is favourable and influenced by owner-managers who are innovative, planners, and characterised by the use of technology. Given this relationship, it is clear that this characteristic and differentiation strategy would lead to better performance. Previous research by Linton and Kask (2017) also found that the best configuration among Porter competitive strategy and entrepreneurship orientation (owner-managers' characteristic) is the strategy that focuses on differentiation combined with innovativeness and pro-activeness.

In this study, data suggest that most of the small firms pursue a differentiation strategy based on providing the best possible product quality, followed by better service. This is consistent with Armstrong's findings (2013), while the strongest characteristic among the owner-managers is being a planner, followed by innovativeness. This indicates that the owner-managers' try to innovate their products and services by making well-planned changes to achieve the highest possible quality and r service. Therefore, this research concludes that owner-managers' characteristics would fit into a firms' differentiation strategy. For a firm to deliver high quality and a customised product with better service, innovativeness or creativity is required. Moreover, when supported with a proper plan and new technology, this combination would boost the company's performance.

The research result also suggests that the differentiation strategy and owner-manager characteristics have a positive impact on a firm's performance. However, results show that the significant relationship is towards non-financial characteristics instead of more commonly assumed financial measures characteristic of larger firms that are not owner managed. This finding is in contrast with Armstrong's (2013) where the highest possible quality and better service was found positively and significantly related to a firm's growth and survival.

The results show that the differentiation strategy has a positive and significant impact on non-financial performance, which was indicated among others by owner-manager's personal satisfaction. Satisfaction is a major factor that influences the owner-manager's decision to pursue the financial aspect in business (Cooper & Artz, 1995). Previous research also found that many of the small business owners are not financial-minded (Baines, Wheelock, & Abrams, 1997). This finding is affirmed by Soesilo (2016) who showed that many SME owner-managers do not want to develop their business further because they are afraid of taxation problems that diminish the benefit of expansion. As almost half of the sample are young enterprises, this could conceal the importance of financial performance. Thus, they might be concerned about financial performance as well, but do not express it because they have not yet achieved a significant financial level.

The present study's data show that SMEs' owner-managers innovative, planners and use new technology. The results suggest that these characteristics are related to respondents' educational background (most of them are well educated) According to Altinay and Wang (2011) education equips owner-managers with the skills and mindsets of understanding customers and responding to their needs and making a positive impact towards the entrepreneurial characteristic that is characterised by innovativeness, planning, and the adoption of new technology.

CONCLUSION

The research study revealed how the owner-manager's' unique characteristics influence SMEs' strategy execution. Owners who are innovative, good planners and are aware of technology have a positive and significant direct and indirect impact on firms' non-economics/financial performance. Surprisingly, these characteristics have no impact on their financial performance. The results must be interpreted cautiously. It might be true that SMEs have shown no significant improvement in their financial performance, and thus, there is no clear effect of owner-manager's actions. This could also be likely due to insufficient records on financial performance, so they will not claim their financial success confidently. Managerial implications of these results strongly suggest that SMEs should prepare decent financial reports to complement the owner's claims about their success. Regardless of the explanation, this research has pointed out that personal satisfaction, pride, and social recognition are

considered important, if not more important than financial performance, for SMEs. Still, the owner-manager's characteristics are very important not only because they influence the firm's performance but also its direction. Despite this, there are limitations to this study principally related to its small sample size and self-assessment for data collection.

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Impact of Entrepreneurial Proclivity on Firm Performance: The Role of Market and Technology Turbulence

Yunia Wardi[1], Perengki Susanto[1], Abror Abror[1]* and Nor Liza Abdullah[2]

[1]*Faculty of Economics, Universitas Negeri Padang-Indonesia, Indonesia*
[2]*Faculty of Economy and Management, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia*

ABSTRACT

This study was aimed at examining the impact of entrepreneurial proclivity on business performance of SMEs in West Sumatera, Indonesia. The moderating variables of this study were role of market and technology turbulence. Data was collected from survey of selected managers or owners of SMEs and later analysed using Moderated Regression Analysis (MRA). Findings show dimensions of entrepreneurial proclivity have significant effects on business performance. There is no significant moderating effect of the role market and technology turbulence on entrepreneurial proclivity of SMEs. Therefore, this study contributes to literature by highlighting the relationship between entrepreneurial proclivity and business performance. Managerial implications are discussed as well.

Keywords: Business performance, entrepreneurial proclivity, market and technology turbulence, SMEs

INTRODUCTION

The small and medium enterprises (SMEs) have a strategic role to play in promoting Indonesia's economic growth. According to Central Agency for Statistics (BPS), the SMEs are the dominant actor in national trade and industry in Indonesia. Its contribution to the nation's gross domestic product (GDP) is 55.56%. The SMEs employ almost 97.22% of the workers, across various regions and remote areas (Bank Indonesia, 2012). However, according to ASEAN Investment Report (2016), the performance of Indonesian SMEs is comparatively weaker than Malaysia, Thailand, Filipina, and Vietnam, which was confirmed by The Employers' Association of Indonesia (2012), indicating inherent problems, such as: (1) lack of innovation capabilities; and (2) lack of flexibility and competition adaptability;

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E-mail addresses:
yuniawardi@yahoo.co.id (Yunia Wardi)
perengki.unp@gmail.com (Perengki Susanto)
abror094@gmail.com (Abror Abror)
iza@ukm.edu.my (Nor Liza Abdullah)
* Corresponding author

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third, limited business network resulting in lack of access to information, market and input; and finally, limited capability in accessing financial resources.

These weaknesses may be related to entrepreneurial proclivity, which refers to the SMEs' strategy and how they deal with the business risks in finding new market opportunities (Covin & Slevin, 1989; Miller, 2011; Zhou, Barnes, & Lu, 2010). Previous studies have pointed to the moderating role of market and technology turbulence on the relationship between entrepreneurial proclivity and SME performance (Rauch, Wiklund, Lumpkin, & Frese, 2009; Zhu & Matsuno, 2015). Market and technology turbulence related to changes in the environment may have a moderating effect on the relationship between entrepreneurial proclivity and business performance. This study therefore, investigates the role of market and technology turbulence as moderating variable on business performance of selected SMEs in Indonesia

Entrepreneurial Proclivity

Previous studies in strategic management had tended to focus on the entrepreneurial process, namely methods, practices and styles in decision making (Lumpkin & Dess, 1996). This study however, focuses on entrepreneurial proclivity on performance with the role market and technology turbulence as a moderator. According to Stevenson and Jarillo (1990), entrepreneurial proclivity is a concept of entrepreneurial management which describes the processes, methods, and organisational style acts. Dess and Lumpkin (2005) emphasises that companies who want to improve the success of corporate entrepreneurship should be oriented towards entrepreneurship.

Entrepreneurial proclivity is a characteristic of a corporate strategy which reflects the behaviour of firms (Matsuno, Mentzer, & Özsomer, 2002). Orientation or entrepreneurial proclivity are used interchangeably in the literature. In this study, the term entrepreneurial proclivity is used to explain the phenomenon of managerial behaviour in the context of SME. Miller (1983), and Covin and Slevin (1989), categorise entrepreneurial proclivity into three dimensions: innovativeness, proactiveness, and risk-taking. Innovativeness is a willingness to introduce a new idea or novelty through a process of experimentation and creativity in the development of new products and services or new processes. Proactiveness is a forward-looking characteristic on opportunities and demand. Risk-taking on the other hand is willingness of companies to decide and act without exact knowledge of the potential revenue and possible personal, financial and business risks (Dess & Lumpkin, 2005). Studies on SMEs use these three dimensions of entrepreneurial proclivity, namely innovativeness, proactiveness and risk-taking when discussing firm behaviour (Covin & Miller, 2014; Covin & Slevin, 1989; Kreiser, Marino, & Weaver, 2002; Slevin & Terjesen, 2011; Wiklund & Shepherd, 2011).

Entrepreneurial Proclivity and Performance

Previous studies indicate firms with entrepreneurship orientation show better performance (e.g., financial performance) (Rauch et al., 2009; Slevin & Terjesen, 2011). In addition, non-financial performance indicators, such as increasing owner satisfaction is not directly related to entrepreneurial proclivity (Rauch et al., 2009). In the context of SMEs, entrepreneurial proclivity has a strong relationship with the former's performance (Li, Zhao, Tan, & Liu, 2008) and this enables them to respond quickly to threats and market opportunities (Chen & Hambrick, 1995). This capability allows SMEs to maintain and improve its performance. Therefore, SMEs are able to win the competition, have a better entrepreneurial orientation, such as an ability to respond threats and opportunities in the market. In fact, entrepreneurial proclivity is an important consideration for managers in improving their business performance (Pehrsson, 2016). This study suggests the dimensions of entrepreneurial proclivity have significant impacts on company performance:

H1a: Proactiveness has a significant impact on SMEs' Performance.

H1b: Innovativeness has a significant relationship with SMEs' Performance.

H1c: Risk-taking is a significant influence factor in SMEs' Performance.

The Role Market and Technology Turbulence as a Moderator

Jaworski and Kohli (1993) refer to technological turbulence as technological development rate, and market turbulence as dealing with the rate of change in the composition between customers and their preferences in the product demand. The relationship between entrepreneurial proclivity and performance was assumed to be strengthened or weakened by market and technology turbulence (Rauch et al., 2009). Several studies have employed this variable as a moderator. For instance, Tsai and Yang (2014) studied 452 manufacturing firms in Taiwan and found the link between innovativeness and performance was stronger when they had a higher market and technological turbulence. Sundqvist, Kylaheiko and Kuivalainen (2012) found the role of market and technology turbulence as moderator of the relationship entrepreneurial proclivity and performance. The environmental factors may become significant in moderating the relationship between entrepreneurial proclivity and performance. Thus, the market and technology turbulence has a moderating effect on the link between entrepreneurial proclivity dimensions and business performance (H2):

H2a: Market and technology turbulence has a significant moderating effect on SME proactiveness.

H2b: Market and technology turbulence has a significant moderating effect on SME innovativeness.

H2c: Market and technology turbulence has a significant moderating effect on SME risk taking.

METHODS

This was a quantitative research and data was collected through a survey method using closed-ended questionnaire, in addition to observations. Each variable obtained the power of research 0.8 with alpha 0.05 (Hair, William, Babin, & Anderson, 2014). The population of this study was all 296 small and medium enterprise (SME) owners or managers in West Sumatra. Purposive sampling technique was used and data analysed using Moderated Regression Analysis (MRA). The SME measurement instruments for variables, and market and technology turbulence were derived from Covin and Slevin (1989), and Jaworski and Kohli (1993) and Wiklund and Shepherd (2003) respectively. Furthermore, respondents' perception of their performance was used to compare with their major competitors in the last three years. Likert scale ranging from strongly disagree, 2) disagree, 3 neutral, 4) agree and 5) strongly agree were used to measure the response.

In order to test the moderating effect, the Moderated Regression Analysis (MRA) was used. Two stages were applied: testing the main and interaction effect. The main and interaction effect can be formulated in three models/equations as follows:

$$Y = b_o + b_1x_1 + b_2x_2 + b_3x_3 \quad (1)$$

$$Y = b_o + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 \quad (2)$$

$$Y = b_o + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_6(x_1.x_4) + b_7(x_2.x_4) + b_8(x_3.x_4) \quad (3)$$

In model 1, Y indicates the SMEs' performance, X1 = proactiveness, X2 = risk-taking, and X3 = Innovativeness. Model 2 was the model 1 plus market and technology turbulence variable (X_4) as an additional variable. Model 3 shows the interaction effect of market and technology turbulence as a moderating variable. Figure 1 shows the research model.

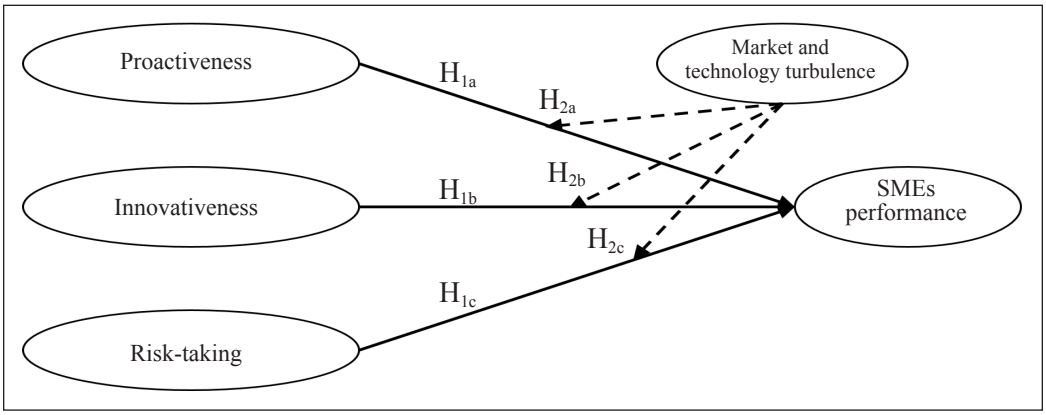

Figure 1. Research model

RESULTS AND DISCUSSION

Most of the respondents are owners or managers of companies which have been established for more than 5 years (65.88%) and. A total of 50.34% of the respondents were from the food industry (cake and snacks). The largest respondents were from the craft industry, such as applique and embroidery business (19.93%). About 72.27% of the respondents were focused on producing local products of West Sumatra.

Table 1 is the description of variables, including means, standard deviation, and their correlations. Proactiveness and risk-taking have high scores, 4.08 and 4.0 respectively. It means the respondents perceived that their SMEs are proactive and do not shy away from risk taking. The variables are also significantly correlated, although there is no indication of multicollinearity problem (correlation ≥ 0.9) (Hair et. al., 2014).

Before using MRA, preliminary tests, such as normality, homogeneity and multicollinearity were conducted (Wardi, Abror, & Trinanda, 2018). Based on the normality test , it was found that the kurtosis values for all variables were still in the range between -3 and +3, which means the data is normal (DeCarlo, 1997). In homogeneity of variance test using Glejser, it was found that the significant value of variables is greater than 0.05 (Glejser, 1969; Hair et al., 2014). Multicollinearity test was conducted using Variance Inflation Factor (VIF) value. Table 2 shows that the VIF values were less than 10. There was no multicollinearity problem consistent with the findings of Hair et al. (2014). This study examined the moderating effect of market and technology turbulence. Though it was free from multicollinearity problem, the standardised variables in the MRA was used to anticipate multicollinearity problem due to the moderating variable effect, in line with Li, Lu, Mittoo and Zhang (2015).

Table 3 shows the findings of the study using MRA. It was found that in the equation 1, all independent variables were significantly related to SMEs' performance. Hence, H1a, H1b and H1c were accepted. The R^2 value estimated was 0.162, means that 16.2% of SMEs' performance was explained by three independent variables.

Table 1
Description of statistics and correlation among variables

No	Variables	Mean	S.D	1	2	3	4
1.	SMEs performance	3,62	,216				
2.	Proactiveness	4,08	,453	.326**			
3.	Innovativeness	3,94	,419	.188**	.188**		
4.	Risk-taking	4,00	,464	.275**	.261**	.121*	
5.	Market and technology turbulence	3,80	,504	.211**	.113	.442**	.160**

S.D is standard deviation
* *Correlation is significant at the 0.05 level (two-tailed)*
** *Correlation is significant at the 0.01 level (two-tailed)*

Table 2
Multicollinearity diagnostic

Model	Unstandardised Coefficients		Standardised Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
Proactiveness	.124	.027	.260	4.640	.000	.907	1.102
Risk-taking	.044	.029	.085	1.515	.131	.914	1.094
Innovativeness	.082	.028	.176	2.918	.004	.785	1.274
Market & technology turbulence	.039	.026	.090	1.503	.134	.793	1.261

a. Dependent Variable: Performance

Table 3
Summary of hypothesis testing

Variables	Model 1	Model 2	Model 3
Proactiveness	0.261*	0.260*	0.263*
Innovativeness	0.215*	0.176*	0.173*
Risk-taking	0.094**	0.085	0.089
Market and technology turbulence		0.090	0.086
Proactiveness *x* market and technology turbulence			0.071
Innovativeness *x* market and technology turbulence			0,019
Risk-taking *x* market and technology turbulence			-0,004
R^2	0.162	0.168	0.174
R^2(*Adjusted*)	0.153	0.157	0.154
F	18.795	14.722	8.693
Sig F Change	.000	.134	.545

* *Significant at the 0.05 level*
** *Significant at the 0.1 level*

Moreover, the model 1 statistically has a high goodness of fit with F value of 18.795 on significance level at $\alpha = 0.05$. Model 2 added market and technology turbulence. The findings in model 2 showed that only two independent variables were significant: proactiveness and innovativeness. The R^2 was increased to 0.168. However, the increase of R^2 was not significant. Model 3 shows the effect of market and technology turbulence as the moderating variable. It was found the moderating effect of market and technology turbulence was not significant for all entrepreneurial proclivity dimensions with $R^2 = 0.174$. Therefore, H2a, H2b and H2c are rejected. The R^2 had been increased from model1 to model 3; however, the R^2 changes were not significant.

Based on the findings, it is clear the SMEs' performance in West Sumatra was influenced by proactiveness, innovativeness and risk-taking. There is a positive and

significant influence of proactiveness on SMEs' performance. It can be seen from the ability of SMEs in seeking and exploiting existing business opportunities. According to Brouthers, Nakos and Dimitratos (2015), proactiveness is one of the most important dimensions in entrepreneurial proclivity. It determines the performance of SMEs in many respects. Therefore, SMEs have to boost their ability in proactively capturing business opportunities (both local and international market).

Furthermore, the performance of SMEs is significantly influenced by innovativeness. This finding is in line with Terziovski (2010), who finds that innovation is a key driver of SME performance. Research on the food industry sector found that innovation has a strong relationship with SME performance (Jenatabadi, 2014). In other words, a SME should be able to create good atmosphere and innovative actions in achieving a better business performance.

Moreover, the SMEs' performance is also affected by their risk-taking. Managers who dare to take risks have a chance to get better results. Kraiczy, Hack and Kellermanns (2014) suggest the SME performance is largely determined by risk-taking, especially in uncertain situations. They opine that SMEs should not adopt the 'wait-and-see' attitude but rather develop a risk-taking attitude. Therefore, the SMEs managers/owners have to take risk if they want to survive in their business competition. The finding is also consistent with that of earlier studies that risk-taking can expand the scope of business or market (Dai, Maksimov, Anitra, & Fernhaber, 2014).

The link of entrepreneurial proclivity to business performance of SMEs was not significantly moderated by market and technology turbulence. This is in contrast with the direct effect of entrepreneurship proclivity on performance. The SMEs surveyed in this study are labour intensive and thus, the production process relies less on new technology adoption. The rapid technological change has no significant impact on the performance of SMEs in West Sumatra. Even though this finding does not support that of previous studies, it is in line with Scott's (2006), who reported that industries with low technology have a strong relationship to economic development, especially in the context of job creation. Therefore, SMEs play a role as a provider of job opportunities to increase the national growth of economy. Hence, this can explain why market and technology turbulence has no significant moderating effect on the entrepreneurial proclivity-performance relationship.

CONCLUSION

Based on the findings and discussion, it can be concluded the performance of SMEs performance in West Sumatra is significantly affected by their entrepreneurial proclivity such as innovativeness, proactiveness and risk-taking. However, the role of market and technology turbulence has no significant moderating effect on the relationship between entrepreneurial proclivity and SME

performance in West Sumatra. Therefore, the SMEs may be concerned about the use of new technology in the future. Most of the products sold by the SMEs in West Sumatera are local products which have a lower adaptability to technological change. However, to compete in the global arena, the SMEs should be innovative. Their managers have to improve on their innovation and they have to be more proactive in seeking market opportunities for the new business and taking a variety of business risks that may occur as a consequence of innovative and proactive activities. As a result, they can increase their company performance.

However, this study has some limitations. Since data was obtained via purposive sampling method, findings of the study cannot be generalised. Furthermore, as this was a cross-sectional study, it cannot portray the phenomena comprehensively. This study only focused on entrepreneurial proclivity, and role market and technological turbulence as the antecedents of SME performance. However, there are some other factors that can influence business performance, such as the business environment. For further research, a probability sampling method and a longitudinal study are suggested so that the results can be generalised. This study also recommends a consideration of other factors, such as business environment.

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Empirical Analysis of Oil Price Volatility and Stock Returns in ASEAN-5 Countries Using DCC-GARCH

Edbert Surya and Sigit Sulistiyo Wibowo*

Department of Management, Faculty of Economics, Universitas Indonesia, Depok 16424, Indonesia

ABSTRACT

This paper examines the dynamic correlation between oil volatility and five ASEAN stock markets using the DCC-GARCH approach. The oil volatility index (OVX or CBOE crude oil volatility index) was used and realised variance (RV) derived from WTI (West Texas Intermediate) crude oil prices. The aim was to examine optimal oil volatility measures between these proxies and to investigate the OVX index as a volatility measure for emerging countries. Findings show that both proxies had a negative correlation to these stock markets between 2007 and 2017, with the exception of the Philippines' stock market. Furthermore, results suggest RV is still a better measure compared with OVX for ASEAN-5 stock markets.

Keywords: ASEAN-5, DCC-GARCH, crude oil volatility index, oil volatility

INTRODUCTION

Oil is an essential commodity for an economy. For firms, future cash flows may depend on oil price as an input to the production process whereby higher oil prices will increase cost of production. For households, changes in the price of oil may have an impact on oil-related spending. Higher oil prices will affect household expenditures on such needs. Many studies on oil volatility and stock markets mainly focus on developing countries. For example, Hamilton (2003) revealed that oil prices tended to remain stable until 1973 for the US economy. However, after 1973, oil price shocks had stronger impacts on the economy. Elder and Serletis (2010) showed that a structural break in the relationship between oil prices and macroeconomic variables in US happened in 1986 due to excessive supply of oil. Herrera, Lagalo and Wada (2011) reported that an increase

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E-mail addresses:
edbert.surya@gmail.com (Edbert Surya)
sigit.sw@ui.ac.id (Sigit Sulistiyo Wibowo)
* Corresponding author

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in oil prices will be more significant in affecting macroeconomic variables rather than decline in crude oil prices. Driesprong, Jacobsen and Maat (2008) claimed that oil price volatility has little impact on developed countries. However, similar studies, which focus on emerging countries, remain limited, particularly on a specific region. Narayan and Narayan (2010) showed that the Vietnam stock market has a positive correlation with oil prices. Wei and Guo (2017) reported an unstable relationship between oil price shocks and China's stock market.

This study examines the relationship between stock markets in five Southeast Asian countries (henceforth referred to as the ASEAN-5) and oil price volatility. Two indicators are used, namely oil volatility index (OVX) and realized variance (RV) derived from WTI (West Texas Intermediate) crude oil prices. The OVX index, published on May 10, 2007 by The Chicago Board Options Exchange (CBOE), is used as an oil price volatility proxy for emerging countries. . It is an option index of the United States Oil Fund (USO), which measures oil price volatility over 30 days. The USO is a collection of crude oil commodities comprising options for oil futures and forward contracts and traded on the New York Mercantile Exchange. This study employs the bivariate dynamic conditional correlation GARCH, proposed by Engle (2002), to examine the relationship between stock market prices and oil volatility. Realized variance (RV) estimates were used to compare against OVX estimates. From the theoretical perspective, this paper contributes to the modern portfolio theory such as Markowitz (1952, 1959) by examining the empirical aspects of oil as a hedging instrument, particularly in the context of investment in ASEAN-5 stock market.

The rest of this paper is organised as follows. Section 2 is a literature review of studies on oil volatility and emerging markets. Data and methodology are presented in Section 3 while Section 4 discusses the research findings and implications. Section 5 summarises and concludes the paper.

LITERATURE REVIEW

The relative importance of oil price to stock market has been widely studied. Arouri and Rault (2012) examined the long-run relationship between oil price volatility and stock markets in Gulf Cooperation Council (GCC) countries. They find that oil prices was a determinant and a predictor of stock returns for GCC countries that are major energy market players. Oil price increases have a positive relationship with stock markets, except Saudi Arabia. Other research focuses on the relationship between oil exporting and importing countries. Using BEKK GARCH models, Filis, Degiannakis and Floros (2011) reported no difference between oil-importing and oil-exporting countries regarding time-varying correlation. They also found that lagged oil prices have a positive relationship with those markets. However, during economic crises,

oil commodity does not serve as hedge instruments for stock investment.

However, there is still dearth of studies on the integration between stock markets and oil price for emerging countries. Click and Plummer (2005) examined the relationship between ASEAN-5 stock market after the 1998 financial crisis. They found a cointegration between these markets using local currency and the US dollar in terms of daily and weekly data. Using Vietnam as a case study, Narayan and Narayan (2010) revealed a cointegration among stock prices, oil prices, and nominal exchange rates that is not consistent with theoretical models. They also found that internal factors such as local market participants play an important role in explaining this finding. Using G7 country data, Diaz, Molero and de Garcia (2017) showed that oil price volatility has a stronger relationship with stock markets as opposed to oil price volatility. Using Chinese stock market data from 1996 to 2015, Wei and Guo (2017) noted a significant impact of oil price shocks on the stock market. They also reported the shocks have stronger effects on stock return rather than on stock volatility.

There is no consensus on good volatility measures or indicators. Diaz et al. (2017) used different specifications of oil price volatility: nominal and real prices. Andersen, Bollerslev, Diebold and Ebens (2001), and Barndorff-Nielsen and Shephard (2002) argued that RV is a good measure of volatility modelling as it is an unbiased and highly efficient estimator of volatility of returns based on quadratic variation theory. Degiannakis and Filis (2017) used RA to forecast oil prices using information channels from several assets such as exchange rates, stock markets, government bonds, and other commodity markets. Using different tests and specifications, they found that realised volatility estimators are robust. Luo and Qin (2017) showed that OVX is a more accurate measure of oil price volatility because it is forward-looking at the market's expectation against WTI price volatility.

Engle (2002) developed univariate GARCH models into multivariate GARCH models known as dynamic conditional correlation or DCC GARCH models. Laurent, Rombouts and Violante (2012) argued that the DCC GARCH is a cost-effective model because conditional volatility and multivariate model GARCH correlation analysis are limited to dimensional dimensions. Ferli and Husodo (2013) employed DCC GARCH to determine the correlation between oil price volatility and stock markets in 13 Asia Pacific countries and five Latin-America countries. They found substantial interdependence between several countries where the contagion effect emerges. Kuper (2007) argued the DCC model has an advantage because it assures a definite positive on the conditional correlation matrix for the time-dependent. Syllignakis and Kouretas (2011) showed that DCC GARCH models can obtain all possible pairwise correlation coefficients from the return index on the sample and at times of unusual events such as the financial crises.

METHODS

The paper aims to examine the dynamic correlation between oil price volatility with the index return of ASEAN-5 stock market comprising Indonesia (Jakarta Composite Index – JCI), Malaysia (FTSE Malaysia Composite Index – KLCI), Thailand (Bangkok Stock Exchange – SET), Philippine (Philippine Composite Index – PSE), Singapore (Singapore Stock Exchange – SGX). The OVX and RV, derived from the WTI oil price, were used. Data was collected on May 10, 2007, as the day of the launch of the OVX index. All data variables in this study are obtained from Bloomberg and are estimated using OxMetrics 7. The RV and the return, r_t, can be expressed as follows:

$$RV_t = r_t^2 \tag{1}$$

,

$$r_t = 100 \times (\log p_t - \log p_{t-1})$$

where p_t denotes the price at period *t*. Augmented Dickey Fuller tests were used to check stationarity condition for each variable. The DCC-GARCH model was used to examine the relationship between oil price volatility and stock market returns. Let $\boldsymbol{H_t}$ be the variance-covariance matrix as:

$$\boldsymbol{H_t = D_t R_t D_t} \tag{2}$$

where $\boldsymbol{D_t}$ represents an $n \times n$ diagonal matrix of conditional standard deviation in period *t* and $\boldsymbol{R_t}$ is the $n \times n$ matrix of conditional correlation in period *t*. Following Engle (2002), the coefficient correlation matrix of DCC-GARCH model can be expressed as:

$$\boldsymbol{R_t = diag\{Q_t^*\}^{-1} Q_t diag\{Q_t^*\}^{-1}} \tag{3}$$

where $\boldsymbol{Q_t}$ denotes an $n \times n$ symmetric positive definite variance-covariance matrix, $diag(.)$ denotes a matrix that contains the main diagonal elements of $(.)$, *and* $\boldsymbol{Q^*}$ denotes a matrix that takes the square roots of each element in $\boldsymbol{Q}$. The specification are estimated using maximum likehood methods. The coefficient correlation of DCC-GARCH model can be computed as follows:

$$\rho_{12t} = \frac{(1-\alpha-\beta)\bar{q}_{12} + \alpha\mu_{1,t-1}\mu_{2,t-1} + \beta q_{12,t-1}}{\sqrt{\left((1-\alpha-\beta)\bar{q}_{11} + \alpha\mu_{1,t-1}^2 + \beta q_{11,t-1}\right)\left((1-\alpha-\beta)\bar{q}_{22} + \alpha\mu_{2,t-1}^2 + \beta q_{11,t-1}\right)}} \tag{4}$$

To compare the estimated results, we use information criteria such as Akaike information criterion (AIC), Bayesian information criterion (BIC), Hannan–Quinn information criterion (HQ), and Shibata information criterion. These information criteria have advantages compared with the coefficient of determination method (R^2). Finally, we test whether extreme values may have an impact on DCC GARCH estimations for each specification. We use two distribution assumptions: Gauss distribution and Student's *t*-distribution.

RESULTS

Throughout the observation period, world oil markets have experienced dramatic price decreases between 2008 and 2010 due to several factors such as oil production, weather, and government policies. Another price shock came in 2014 as a result of growth in US production, high demand from China and Europe, and political disturbances in the Middle East. Due to these events, ASEAN-5 stock markets experienced a similar pattern during the same period, except in Singapore. Figure 1 provides data used this study and relate them to the stock markets in each ASEAN-5 country.

DCC – GARCH Estimation Results

Table 1 reports the results of DCC-GARCH estimations. All ASEAN-5 stock index returns have significant negative time-varying correlations with OVX and RV. These results are consistent with theoretical expectations. The plots for all DCC-GARCH estimations are provided in the next section.

Indonesia – Jakarta Composite Index (JCI)

Figure 2 (left panel) shows that JCI index returns have a negative correlation with the OVX return index. The time-varying correlation between the Indonesian stock market return and the OVX return is around

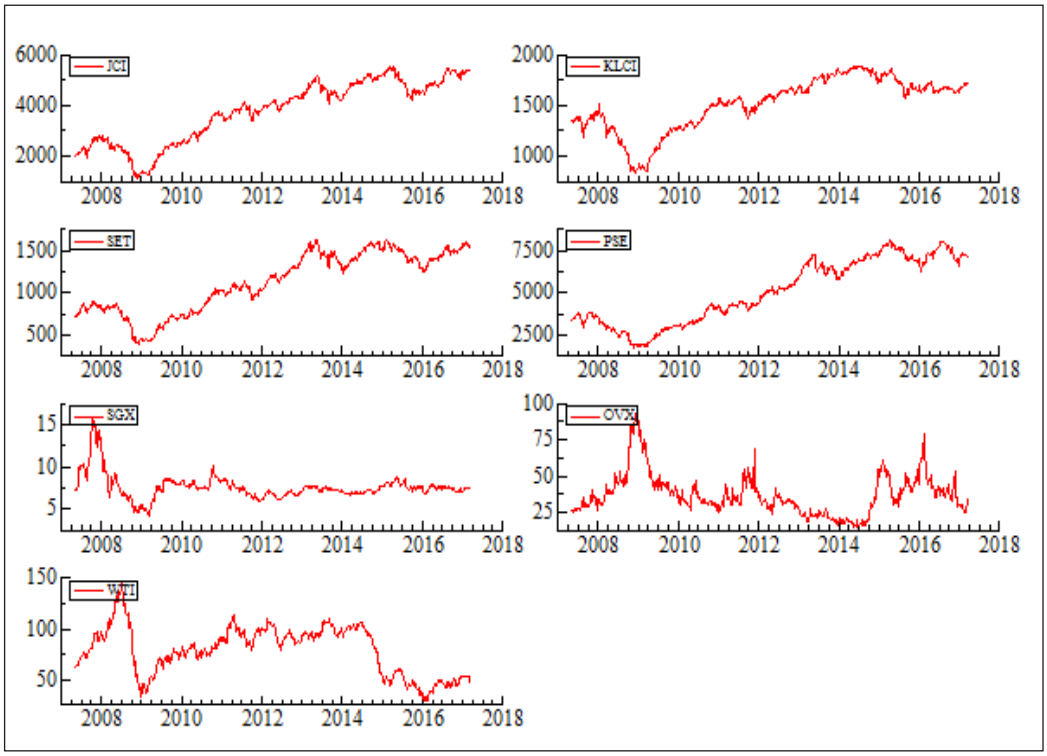

Figure 1. ASEAN-5 Stock Returns, OVX Prices, and WTI Prices.
Source: Bloomberg

Table 1
Results of DCC-GARCH estimations for ASEAN-5 countries

	JCI		KLCI		SET		PSE		SGX	
	OVX	RV	OVX	RV	OVX	RV	OVX	RV	OVX	RV
ρ_{21}	-2.668	-0.167	-0.247	-0.117	-2.668	-0.169	-0.275	-0.199	-2.66	-0.169
	(0.000)	(0.024)	(0.000)	(0.024)	(0.000)	(0.003)	(0.000)	(0.000)	(0.000)	(0.002)
α	0.019	0.006	0.01	0.006	0.019	0.099	0.043	0	0.189	0.208
	(0.394)	(0.878)	(0.478)	(0.613)	(0.000)	(0.077)	(0.295)	(0.911)	(0.000)	(0.008)
β	0.87	-0.818	0.975	0.898	0.975	0.898	0.74	0.817	0.008	0.102
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.024)	(0.043)	(0.978)	(0.398)

Note: t-probability Index in parentheses. JCI denotes Jakarta Composite Index, KLCI indicates Kuala Lumpur Stock Exchange Index, SET denotes Stock Exchange of Thailand Index, PSE denotes Philippine Stock Exchange Index, and SGX denotes Singapore Stock Exchange Index. *Source:* Authors' calculations

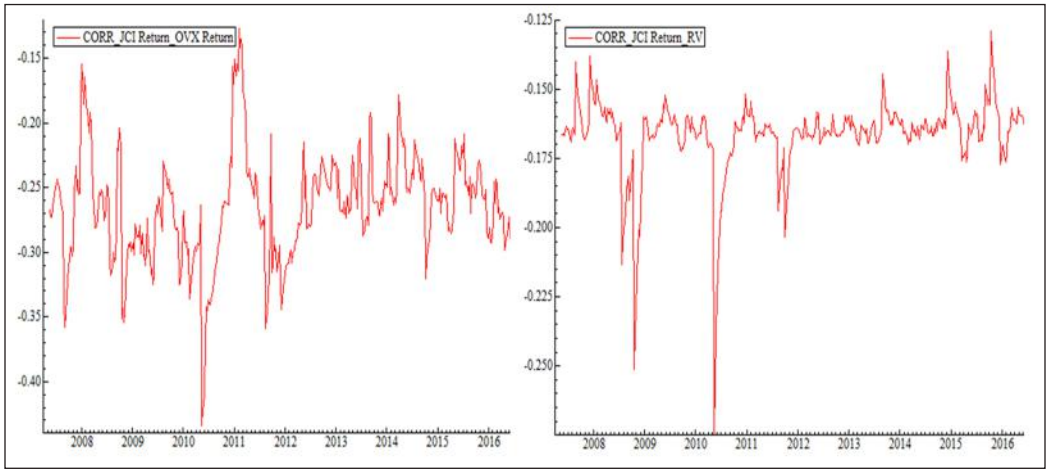

Figure 2. DCC GARCH results for JCI

the 0.25 level. During oil price shocks in 2008 and mid-2014, the former had the highest negative correlation, while in the latter period, the relationship was at an average level.

The correlation between the return of JCI and RV is also negative. However, during the 2008 financial crisis and the oil price shock in mid-2014, the correlation between JCI and RV is higher than between the JCI and OVX index. It can be concluded that the increase or decrease in JCI index returns is different from the OVX return index in the same week. The negative correlations show a distinct movement between JCI volatility with OVX and RV indices not occurring in the same week. The correlation between OVX and JCI volatility is more volatile than the correlation between RV and JCI volatility. This is possibly because OVX contains information across different markets.

Malaysia – Kuala Lumpur Composite Index (KLCI)

Figure 3 shows that the volatility in the KLCI index has a negative correlation to OVX and RV. The correlation between KLCI index volatility with OVX and RV is around -0.250 and -0.12 respectively. The different patterns of the Malaysian stock market index returns with OVX and RV show that the volatility between the two indices does not occur in the same week.

A sharp decline of the Malaysian stock market between 2008 and 2009 which resulted in a negative correlation between KLCI and OVX, can be offset by investing in the stock market. During this period, KLCI may provide a better investment opportunity compared with the Singapore market, according to the correlation between OVX and KLCI. The correlation between KLCI with OVX and RV in 2008 is -0.225 and -0.10 respectively. Therefore, it can be stated that the volatility of KLCI has more correlation with RV, although negatively correlated. The same can be found during the oil price shock in mid-2014, where the correlation between KLCI with OVX and RV is -0.225 and -0.12respectively. Despite the negative correlation, volatility in the KLCI index seems to better correlate with RV than OVX, either overall or in the event of oil price shocks.

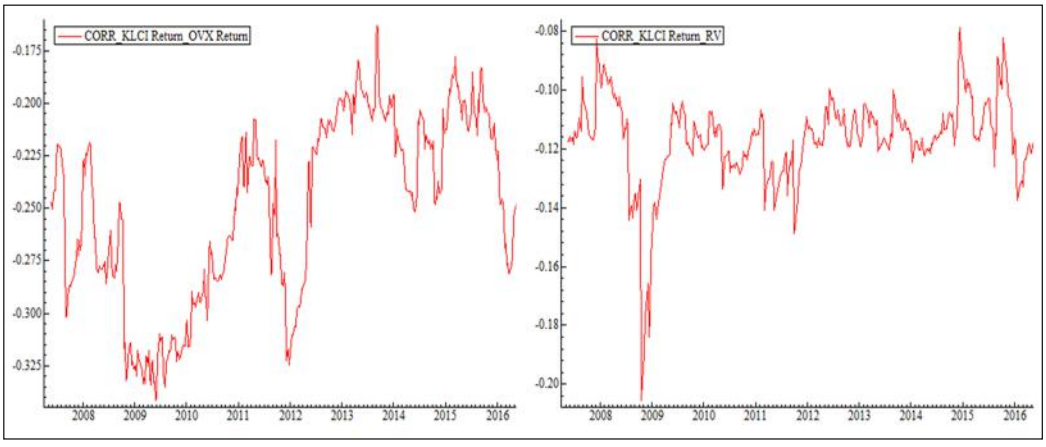

Figure 3. DCC GARCH results for KLCI

Thailand – Stock Exchange of Thailand (SET)

Figure 4 shows a negative correlation between SET with OVX (left panel) and RV (right panel). The correlation between SET returns and OVX is about -0.3, while the correlation between SET and RV is about -0.2. Compared with the results of other markets such as Indonesia, Malaysia, and the Philippines, the Thai stock market seems be more stable. Although there are positive correlations between volatility in the SET index with OVX and RV for several periods, overall it has a negative correlation. Looking at two oil price shock events that occurred in 2008 and 2014, the SET index

shows a different correlation to both events. In 2008, oil shocks that coincided with the financial crisis, both the OVX and RV, show a positive correlation, despite its small value of 0.1. In contrast with the oil price shocks of 2014, SET index returns have a negative correlation value concerning OVX and RV. However, during the period of oil price shocks, there is a time where a positive correlation exists between the SET index and the OVX and RV indices in 2008 but negatively correlated with the oil price shocks of 2014.

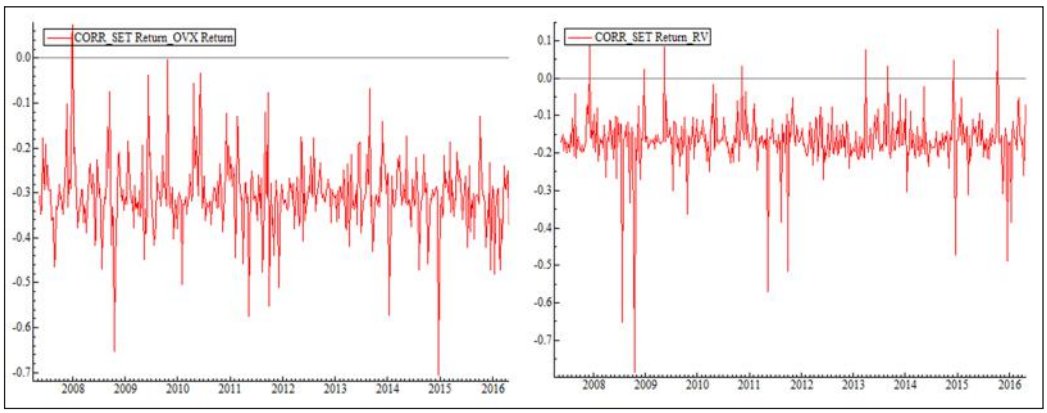

Figure 4. DCC GARCH results for SET

The Philippines – Philippine Stock Exchange (PSE)

Figure 5 shows that the relationship between the return of the PSE volatility and OVX index has a negative correlation with an average value of -0.30 throughout the observation period. However, the correlation between PSE and RV has a positive value in the same period. The correlation between RV and the PSE volatility was positive during the entire study period. It indicates that the increase or decrease in return of the PSE index has the same upward trend or decline in that week. The positive correlation between PSE volatility and RV is possibly due to the Philippines being a net importer.

This study look specifically at two events that occurred during oil price shocks. The correlation between the PSE volatility and OVX is above the average negative correlation and is close to zero during the 2008 financial crisis. However, in regard to the 2014 oil price shocks, the correlation value is average. The correlation between PSE volatility and RV tends to be the same, around 1.998, at the time the two events take place. The correlation between OVX and PSE volatility is still similar to that of other countries. Thus, if we use RV as our volatility measure, it may not be a good idea to invest in the Philippines stock market, especially during an economic turmoil.

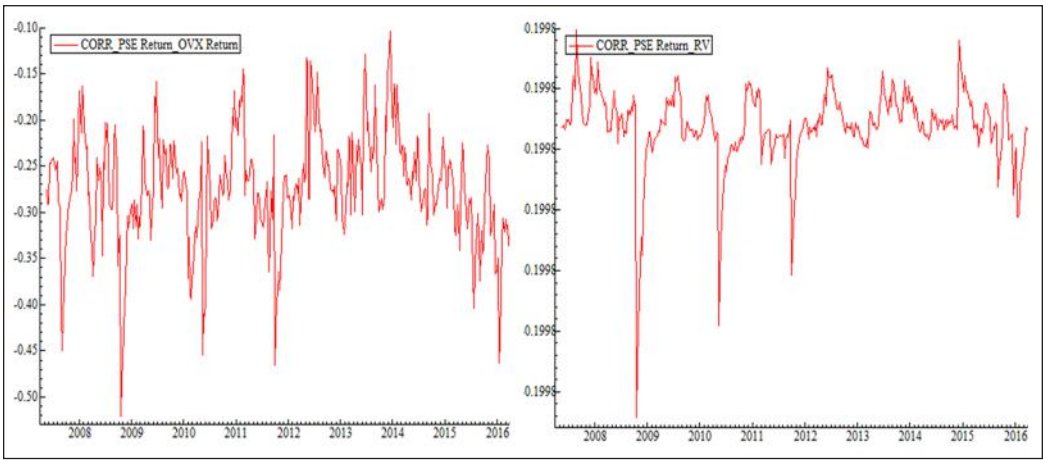

Figure 5. DCC GARCH results for PSE

Singapore – Singapore Stock Exchange (SGX)

Similar to the results for the Thailand stock market, the Singapore stock market seems to have more stable effects with oil price volatility. In Figure 6, the SGX index returns have a negative correlation with OVX and RV during the observation period. For oil price volatility, the average correlation between SGX return and both volatility measures is -0.2.

Furthermore, when observing two oil price shocks in 2008 and 2014, the SGX index has a different response. In 2008, the SGX returns tended to have negative correlations with OVX, but it had a positive correlation at the beginning of 2008. This positive correlation is stronger for the relationship between SGX return and RX. In 2014, the SGX return had a negative correlation with a value equal of -0.2 for the two oil price indices. In summary, the

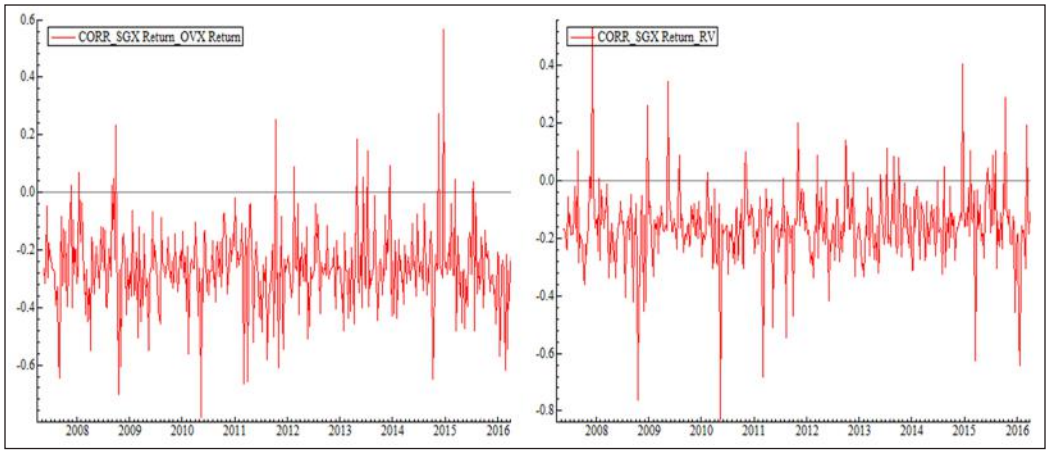

Figure 6. DCC GARCH results for SGX

dynamic correlation between volatility in the SGX index and OVX exhibit a similar pattern to the correlation between SGX volatility and RV.

Information Criterion Analysis

In comparing which oil price volatility measures has better precision with regards to the stock market, we use information criterion for determining the validity of each volatility measure. Table 2 provides the results of information criterion for each specification: JCI, KLCI, SET, PSE, and SGX to OVX and RV index.

Overall, the information criteria (AIC, BIC, HQ, and Shibata) for each specification that uses RV as a volatility measure has a lower value than the results with OVX index on any index in the ASEAN-5 stock market. It shows that RV can serve as a better volatility measure compared with OVX. That is, in volatility measured by the RV approach, it has a cost of information that is more affordable than OVX. Our results are different compared with those of Luo and Qin (2017) who argue that the OVX index is a better in measuring oil price volatility. The difference is due to the stock markets in ASEAN-5 countries. Although the average value difference between OVX and RV is only 0.50, the RV approach retains a low score on each of the ASEAN-5 stock market indexes. Therefore, it can be concluded that in measuring oil price volatility on the market return in the ASEAN-5 countries, the RV approach is a better.

Table 2
Information criterion

	JCI		KLCI		SET		PSE		SGX	
	OVX	RV	OVX	RV	OVX	RV	OVX	RV	OVX	RV
AIC	-6.21	-6.75	-7.3	-7.83	-6.36	-6.89	-6.27	-6.82	-5.94	-6.46
BIC	-6.12	-6.65	-7.2	-7.74	-6.27	-6.8	-6.18	-6.73	-5.85	-6.37
HQ	-6.17	-6.71	-7.26	-7.79	-6.33	-6.85	-6.24	-6.78	-5.9	-6.43
Shibata	-6.21	-6.75	-7.3	-7.83	-6.36	-6.89	-6.28	-6.82	-5.94	-6.46

Note: JCI denotes Jakarta Composite Index, KLCI indicates Kuala Lumpur Stock Exchange Index, SET indicates Stock Exchange of Thailand Index, PSE denotes Philippine Stock Exchange Index, and SGX denotes Singapore Stock Exchange Index. AIC indicates Akaike's Information Criterion, BIC denotes Bayesian's Information Criterion, HC denotes Hannan-Quinn Information Criterion, and Shibata denotes Shibata Information Criterion. *Source*: Authors' calculations

DCC GARCH with Gauss and Student's t-Distribution

In this section, distribution assumption is examined to see if it influences the results due to the presence of fat tails in each specification. Table 3 reports the results of the distribution of Gauss and Student's *t*-distribution for the returns for each ASEAN-5 stock market index with the OVX index. The coefficients of α and β from each specification of the ASEAN-5 stock market index to the OVX index is shown in Table 4.

It suggests that the coefficients estimated by DCC for all indexes of the ASEAN-5 stock market against the OVX index are less than 1. This shows that α and β have positive scalar parameters. The values may vary for each specification.

The results in Table 4 show that the Student's *t*-distribution has a more substantial log-likelihood value compared with the Gauss distribution on the five ASEAN stock market indices. The value of larger log-likelihood is an indication that Student's *t*-distribution is distribution because it can capture the fat tails of an empirical distribution. It can be concluded that extreme events during the observation period have impacts on each market in ASEAN-5 countries with respect to oil price volatility.

Table 3
DCC-GARCH-OVX with Gauss and Student's t-distribution: The correlation coefficients

	Gauss (ρ_{21})			Student's t (ρ_{21})		
	Coefficient	Std. error	Log-likelihood	Coefficient	Std. error	Log-likelihood
JCI - OVX	-0.267	0.049	1603.07	-0.219	0.048	1657.49
KLCI - OVX	-0.247	0.063	1882.36	-0.225	0.052	1915.07
SET - OVX	-0.307	0.047	1642.84	-0.28	0.049	1689.84
PSE - OVX	-0.275	0.049	1620.35	-0.252	0.049	1653.64
SGX - OVX	-0.266	0.057	1534.13	-0.268	0.048	1559.18

Source: Authors' calculations

Table 4
DCC-GARCH – OVX with Gauss and Student's t-Distribution: α and β

	Gauss		Student's t	
	Coefficient	Std. error	Coefficient	Std. error
DCC - JCI (α)	0.02	0.023	0.091	0.049
DCC - JCI (β)	0.87	0.149	0.291	0.132
DCC - KLCI (α)	0.01	0.014	0.011	0.021
DCC - KLCI (β)	0.974	0.041	0.947	0.095
DCC -SET (α)	0.091	0.065	0.093	0.053
DCC -SET (β)	0.208	0.763	0.217	0.316
DCC -PSE (α)	0.043	0.041	0.086	0.055
DCC -PSE (β)	0.741	0.328	0.513	0.365
DCC -SGX (α)	0.19	0.053	0.169	0.058
DCC -SGX (β)	0.008	0.268	0.021	0.241

Source: Authors' calculations

CONCLUSIONS

Using DCC-GARCH methods, the results for each stock market in ASEAN-5 countries are mixed due to different characteristics in each market. The JCI index return has a negative correlation with the OVX and RV for all observation periods. The results for KLCI are similar to the JCI index return and have a negative dynamic correlation to the OVX index and RV throughout the study period. For Thailand, the return of the SET index has a negative dynamic correlation to the OVX index and RV. However, we also find a positive correlation dynamic between the Thai stock market and oil price volatility in 2008. For the Philippines, the volatility in PSE index has a negative correlation to the OVX index but has a positive relationship to RV over the observation period. The SGX index return has a negative correlation to the OVX and RV, but some periods have a positive correlation. Only Singapore has a similar pattern of dynamic correlation between stock market volatility and OVX and RV.

This study finds a negative correlation between the stock market returns of ASEAN-5 countries and oil price volatility, with an exception for the Philippines' stock market estimates with RV as a volatility measure. During an economic turmoil, Malaysia's stock market may provide a better investment opportunity in a portfolio, which comprises oil commodity and equity investments. Findings also show that the RV is a better measure than the OVX index to estimate the relationship between stock market returns for each ASEAN-5 country and oil price volatility. The relationship between oil price volatility and stock market returns is also characterised by extreme events during the observation period. Findings also point to the importance of volatility in commodity and stock markets for asset pricing, investment portfolio, and risk management.

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2. **Review article**

These report critical evaluation of materials about current research that has already been published by organizing, integrating, and evaluating previously published materials. It summarizes the status of knowledge and outline future directions of research within the journal scope. Review articles should aim to provide systemic overviews, evaluations and interpretations of research in a given field. Re-analyses as meta-analysis and systemic reviews are encouraged. The manuscript title must start with "Review Article:".

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Authors' addresses. Multiple authors with different addresses must indicate their respective addresses separately by superscript numbers:

George Swan[1] and Nayan Kanwal[2]
[1]Department of Biology, Faculty of Science, Duke University, Durham, North Carolina, USA.,
[2]Office of the Deputy Vice Chancellor (R&I), Universiti Putra Malaysia, Serdang, Malaysia.

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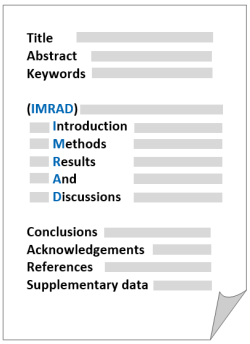

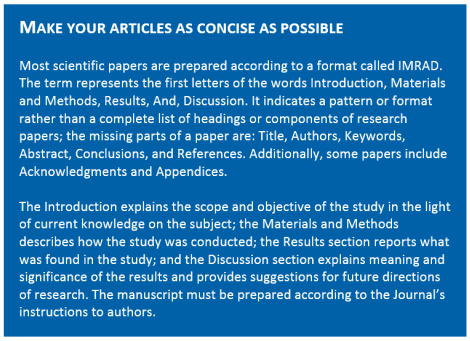

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Office of the Deputy Vice Chancellor (R&I)
1st Floor, IDEA Tower II
UPM-MTDC Technology Centre
Universiti Putra Malaysia
43400 UPM Serdang
Selangor Darul Ehsan
Malaysia

http://www.pertanika.upm.edu.my/
E-mail: executive_editor.pertanika@upm.my
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