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Influence of Financial Leverage on Financial Sustainability. A Case of a Microfinance Institution in Kenya

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Abstract

Microfinance institution plays a crucial role in economic development and financial inclusion. Financial sustainability is the key dimension to microfinance institutions growth. Which further indicate the importance of which Financial sustainability is. Therefore, the present study investigated the effect of financial leverage on MFI financial sustainability. The specific objective was to establish the effect of financial leverage on the financial sustainability of MFIs. The study was guided by agency theory and life-cycle theory. The study adopted an explanatory research design where a panel approach was used as well as the positivist paradigm. The study adopted the census approach method. Panel data was drawn from 30 MFIs for a period between 2010 and 2018 from mix market database using the data collection schedule. The study used both descriptive and inferential statistics to analyze data with the help of STATA software. Fixed effect model based on Hausman test (X^2 = 45.41, p= $0.000 \leq 0.05$). Based on the findings of the study financial leverage ($\beta1 = 0.27, p - value = 0.001$), the study had a positive and significant effect on the financial sustainability of MFIs. The study recommended MFIs managers to engage in the prudent use of financial leverage so that they enhance their overall profitability and boost investor confidence in their strategic decision-making resulting in financial sustainability. The results have an implication to business managers and policymakers given the vital role in service delivery and the challenges hindering the sector from the realization of financial sustainability in the economy.

Keywords: Financial Leverage, Financial Sustainability, Microfinance Institutions, Microfinance Information Exchange.

1. Introduction

Microfinance institutions (MFIs) are feted and perceived as a panacea to economic development and a key contributor to financial inclusion, especially in developing nations (Lopatta, Jaeschke, & Chen, 2017). Access to finance is essential for socio-economic initiatives and programs aimed at poverty alleviation, wealth creation and improved standard of living in developing and emerging economies (Henock, 2019). MFIs are modeled to serves economically active people who have been excluded from conventional banking (Marwa & Aziakpono, 2015). Scholars have attributed financial exclusion to factors such as high transaction cost, inadequate collateral, information opacity and higher default rates (Olomi, 2009). Besides, there is a tactical failure by conventional financial institutions to provide credit services to the poor and microenterprises in the developing nations, since they are viewed as un-bankable because of their low disposable income. Thus, Microfinance institutions are intended to bridge the financing gap created by mainstream banking institutions. Interestingly, with increased competition banking institutions are gradually expanding their financial services, through diversification and innovation of financial, products tailored for the low-income earners (Blanco, Pino-Mejías, Lara, & Rayo, 2013).

Equally, the poor have largely demonstrated that they are bankable; they can save, borrow and pay just like any other investor (Abate, Borzaga, & Getnet, 2013) which has motivated microfinance institutions to continue serving the poor through approaches such as solidarity lending, progressive lending with regular repayment schedules as a dynamic incentive and loan guarantees (Thapa, 2006). Due to their historical background, serving the underprivileged, MFIs are largely reliant on donor's funds, however, these funds are highly volatile and inadequate leading to financial unsustainability which is likely to erode the quality of future services. Thus, MFIs must strive for financial sustainability to meet their goals (Ghosh & Van Tassel, 2013; Helms, 2006). This can be achieved through commercialization and competition of micro-lending services focusing on financial sustainability (Abate et al., 2013).

Financial sustainability is considered as a way of securing the future beyond subsidies and donations as an essential ingredient for their success (Pylypiv & Chakravarty, 2015). The main challenge facing the MFI sector is how to finance its services without undermining financial sustainability (Awaworyi Churchill, 2018). In sub-Saharan Africa (SSA) MFIs have been employing different types of financing, including multilateral grants and loans, deposits (micro-savings) and commercial loans (Chikalipah, 2019). Over the years, microfinance institutions have evolved and broadened their funding structure. Currently, in the pecking order, deposits, debt, and equity are the main sources of finance to microfinance institutions

(Sapundzhieva, 2011). Arguably, the financing order conforms with the Agency theory. This theory is based on the agency costs hypothesis, whose main proposition is the separation of ownership from control (Jensen & Meckling, 1976). Agency theory suggests that through debt financing the interest of management and stakeholders are aligned (Jensen, 1986; Myers, 1977). Equally, Kar (2012) argues that leveraged MFIs are profitable than unleveraged ones, implying they are more financially sustainable. According to Kyereboah-Coleman (2008), financial leverage serves to reduce moral hazards and adverse selection, which is synonymous with free cash flows, owing to monitoring by external lenders. Hence, the use of debt may improve MFIs cash-flow and ultimately guaranteeing sustainability.

Other than the use of debt to enhance financial sustainability, researchers have proposed additional interventions. First, MFIs can increase their interest rates to meet transaction costs, however, this move may deny low-income earners access to credit (Dehejia, Montgomery, & Morduch, 2012). Globally, MFIs endeavor to remain financially sustainable (Lensink, Mersland, Vu, & Zamore, 2018). This is because financial sustainability is the yardstick of its success (Baumann, 2004). Second, MFIs should adopt modern financial technologies. Third, the regulator should ensure a favorable regulatory environment for MFIs to thrive (Hermes & Lensink, 2011). Though studies have largely explored the demand side which looks at how MFIs are beneficial to the clients (Gopalaswamy, Babu, & Dash, 2015), little is known about what sustains these institutions in terms of their long-term sustainability.

1.1 Problem Statement

Financial sustainability has recently captured the attention of many scholars and policymakers owing to its importance to firm profitability and survival (Nyamsogoro, 2010). In the context of MFIs, financial sustainability is vital to the effective realization of the poverty alleviation agenda (Kabeer, 2005; Mahjabeen, 2008). However, since inception, MFIs have been struggling to serve a significant size of the underprivileged population, while at the same time remain financially sustainable (Lensink *et al.,* 2018). Though MFIs have grown impressively over two decades, through innovative lending practices, experience, government, and donors support, financial sustainability remains the biggest challenge to their survival (Hartarska & Nadolnyak, 2007). Researchers claim that institutions which are financially sustainable grow bigger and stable. Financially sustainable institutions finally integrate into local financial systems (Schneider & Greathouse, 2004).

Despite the significance of financial leverage to financial sustainability, extant literature shows mixed results. Several studies have indicated that financial leverage had a positive significant association with financial sustainability (Berger & Di Patti, 2006; Champion, 1999; Roden & Lewellen, 1995). Furthermore, other scholars have found a negative relationship (Abate et al., 2013; Booth, Aivazian, Demirguc-Kunt, & Maksimovic, 2001; Deesomsak, Paudyal, & Pescetto, 2004; Fama & French, 2002; Hou, 2019). The discrepancy of the finding is owed to the fact that most studies were undertaken in advanced economies (USA, Europe and Asia Pacific) with high financial inclusion rate and high disposable household income, which implies that MFIs are of less significance as compared to banks (Berger & Di Patti, 2006; Hou, 2019; Roden & Lewellen, 1995). However, in developing economies MFIs plays an important role in bridging the wide gap created by conventional banks, hence financial sustainability requires special attention. Therefore, this study seeks to examine the effect of financial leverage on financial sustainability in less developed economies, Using Kenya as a case study.

2. Literature Review

2.1 Theoretical Literature: Agency Theory

This study is grounded on Agency theory that was advanced by Jensen and Meckling (1976), in their seminal paper *"Assessing the Theory of the Firm: Managerial behavior, agency costs, and Ownership Structure."* The theory claims the existence of a conflict between the principal and the agent, where the managers (agents) engage in self-seeking behaviors at the expense of stakeholders (principal). Jensen and Meckling (1976) posit that a firm's choice of capital structure may help lessen the agency conflict. Presumably, the theory emphasizes the need for separation of ownership from control. Jensen and Meckling (1976), the theory was later reviewed by Myers (1977) who suggested that higher financial leverage eases the conflicts between shareholders and managers regarding the choice of investment. Similarly, Grossman and Hart (1982); Williams (1987), advocated that high leverage limits managerial discretion and lessens firm's exposure to liquidation while subjecting managers to loss of salaries, reputation, and perquisites. Moreover, piling pressure on the manager to generate sufficient cash flow for debt repayment (Jensen, 1986).

Theoretically, a firm's optimal financial structure is a mixture of debt, preferred stock, and common equity (Harris & Raviv, 1991). It is worth mentioning that deposits are a unique source of funds to MFIs, which permits the mobilization of micro-savings from customers (Chikalipah, 2019). It is a statutory requirement

for MFIs to meet specific capital requirements before being licensed to engage in deposit collection and lending (Cull, Demirgüç–Kunt, & Morduch, 2011). Therefore, with the low saving levels and high demand for loans, debt capital is inevitable to MFIs. However, debt has been pronounced as a double-edged sword because it can magnify either the firm's potential gains or its potential losses (Hou, 2019). This means that a firm can either end in financial sustainability or distress which calls for optimal leverage. Firms' that employ leverage benefit from tax shields since interest on the debt is an allowable expense in corporate taxation (Modigliani & Miller, 1963). Conversely, extreme leverage might lead to financial distress thus lowering the firm's value (Ross, Westerfield, & Jaffe, 2002).

In line with the theoretical review, this study argues that MFIs should consider financial leverage for two reasons. First, finance theories have confirmed that financial leverage aligns managerial interests to those of the shareholders (Hudon & Traca, 2011). Secondly, through external debt, MFIs will have sufficient and cheaper source of capital which will improve their financial sustainability, however, management should consider the firm's optimal debt level to avoid financial distress.

2.2 Empirical Review

2.2.1 Financial Leverage and Financial Sustainability

Financial sustainability is crucial to MFI development and long-term survival. With the emergence of capital markets, firms are more accessible to innovative financing options. However, there appears to be a consensus in favour of debt financing due to its role in monitoring free cash flows and agency problem. Despite, the importance of debt financing, it is argued that financial leverage might compel the firm to spent future cash flows to meet debt obligations to prevent financial distress that might lead to liquidation or takeover (Towo, Mori, & Ishengoma, 2019). In the recent past institutions have resolved to utilize financial leverage to deepen their outreach (Hartarska & Nadolnyak, 2007). Furthermore, MFIs have been pressurized to reduce the reliance on subsidies and grant funding.

The link between financial leverage and firm financial sustainability has attracted substantial interests among scholars, practitioners, and policymakers. However, existing literature shows that the findings are largely mixed up. A study by Berger and Di Patti (2006) in the US banking sector found that financial leverage had a positive and significant effect on financial sustainability. similar findings were reported by Champion (1999). On the contrary, a few researchers established a negative relationship between financial leverage and financial sustainability, a study by Booth et al. (2001) that used a sample of 10 countries; India,

Pakistan, Thailand, Malaysia, Turkey, Zimbabwe, Mexico, Brazil, Jordan, and Korea. These findings are similar to Hartarska and Nadolnyak (2007), who studied 114 MFIs from 62 countries and panel data for the period between 1999- 2001. The debate on financial leverage and financial sustainability is further intensified by Kinde, (2012) study that used balanced panel data set of 126 observations from 14 MFIs over the period between 2002-2010, and found an insignificant effect. Given the empirical literature, it is apparent that the financial leverage and financial sustainability nexus requires further investigation; particularly in developing countries where MFIs play a crucial role in socio-economic development despite the recognizable financial and legal impediments. Thus, based on theory and extant literature this study hypothesis is developed as follows;

> *H_o: Financial leverage has no significant influence on MFIs financial sustainability.*

> *H_a: Financial leverage has a significant influence on MFIs financial sustainability.*

2.3 Conceptual Framework

The main objective of the study is to examine the effect of financial leverage on MFI financial sustainability. Hence, the outcome variable is financial sustainability while the predictor variable is financial leverage. Further, the study controls for firm age and firm size. The theoretical relationship between the variables is depicted in a conceptual framework as shown below.

Independent Variable   Dependent Variable

Financial leverage	→	**Financial sustainability**

Control Variables

Firm age
Firm size
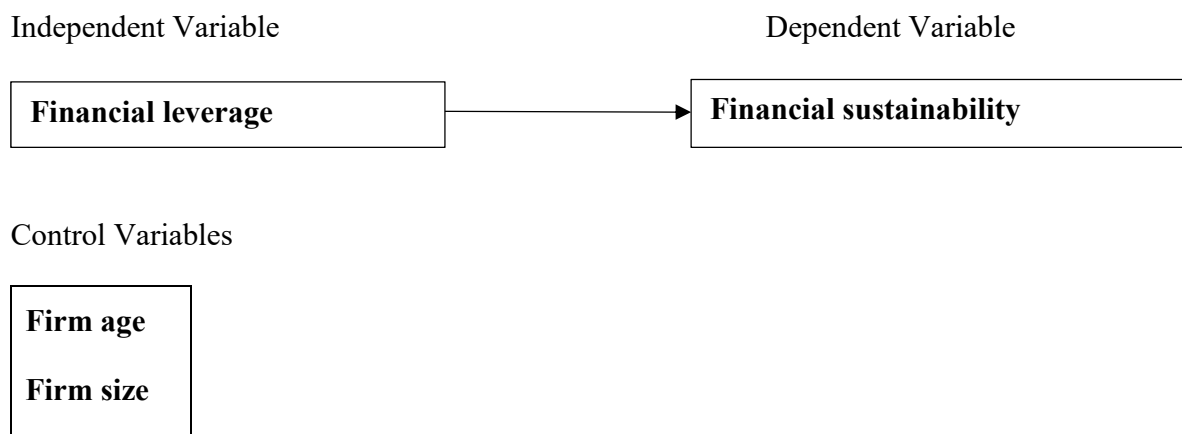
Source: Research author, (2019)

Figure 1: Conceptual Framework

3. Research Design

This study is guided by the explanatory research design since it seeks to establish the causal relationship between financial leverage and financial sustainability. The research methodological issues are discussed in the subsections.

3.1 Data and sample

The target population was the 52 MFIs in Kenya (CBK, 2015). However, due to the availability and completeness of data, only 30 MFIs qualified for further statistical analysis. Panel data for the period between 2010 to 2018 was extracted from the MIX market database, compiled by the World Bank, with the aid of the data collection schedule. In total, the study had 270 year-end observations.

3.2 Research model

The study hypothesis was tested using the results of multiple regression analysis. Since panel data was used, the choice between fixed effect and random effect regression model was based on Hausman test. Two regression models were used; where model 1 tested the controls and model 2 the main effect as illustrated below.

$$FSS_{it} = \alpha_{0it} + \beta_{1it}Fage_{it} + \beta_{2it}Fsize_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Model\ldots\ldots\ldots\ldots\ldots(..1)$$

$$FFSS_{it} = \alpha_{0it} + \beta_{1it}Fage_{it} + \beta_{2it}Fsize_{it} + \beta_{3it}Flev_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots Model\ldots\ldots\ldots\ldots\ldots\ldots(..2)$$

Where:

FSS_{it} = MFI financial sustainability for … i in year t

$Flev_{it}$ = MFI financial leverage for … i in year t

$Fsize_{it}$ = Firm size…. i in year t

$Fage_{it}$ = Firm Age …i in year t

α_{0it} = *constant*

$\beta_{1it} - \beta_{3it}$ = *coefficients of regression*

ε_{it} = *error terms*

3.3 Data analysis

Data was analyzed using descriptive and inferential statistics. The data was summarized into mean, standard deviation, minimum and maximum values of the research variables. Further, the nature and the magnitude of the relationship among variables was tabulated using pairwise correlation analysis. Additionally, several diagnostic tests were conducted before testing the hypothesis through regression analysis. The results of the diagnostic tests are shown in tables 1-3, which confirms that the data was suitable for multiple regression analysis.

4.1 Panel Unit Root Tests

The study tested for unit root to establish whether the variable was stationary with the aid of Phillip – Perron's test unit root. To establish the presence or absence of unit root. The following hypothesis was considered for this test.

Null hypothesis (Ho): All panels contain unit root.

The alternative hypothesis (H1): At least one panel is stationary.

Looking at the *p*-values in Table 1, the null hypothesis was rejected, which means that none of the variables had unit root.

Table 1: Unit root

	Inverse chi-squared(58)	Inverse normal	Inverse logit t(144)	Modified inv. chi-squared
	P	Z	L*	Pm

Financial Sustainability	155.46	-3.52	-6.31	1.15
p-value	.00	.00	.00	.00
Financial leverage	188.05	-4.59	-7.74	12.07
p-value	.00	.00	.00	.00
Firm age	52.28	.39	.14	-.71
p-value	.00	.00	.00	.00
Firm size	215.27	-5.36	-8.84	14.60
p-value	.00	.00	.00	.00

Source: Research Author, (2019)

4.2 Test for Heteroskedasticity

Heteroskedasticity was tested using the Breusch-Pagan test. The error term mean was constant over time if not constant it will affect the association between financial leverage and financial sustainability. Heteroscedasticity test was run to test whether the error terms are correlated across observation in the time series data. The study findings revealed that Chi2 (1) was 0.50, a p-value of 0.4808 implying that the hypothesis was not rejected hence revealing that the assumption of constant variance was not violated. The findings are presented in table 2.

Table 2. Breusch-Pagan / Cook-Weisberg Test for Heteroskedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of Financial Sustainability

chi2(1)   =   .50

Prob > chi2 = .4808

Source: Research Author, (2019)

4.3   Test for Autocorrelation

This study used the Wooldridge test to check the presence of autocorrelation in the data; whether or not the residual is serially correlated and the results as shown in table 3. The test statistic as reported by the F-test with one and 7 degrees of freedom, value of 6.597 and p-value of 0.0671 indicated the absence of autocorrelation.

Table 3. Wooldridge test for autocorrelation

Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F(1, 7) =   6.597

Prob > F =   .0671

Source: Research Author, (2019)

4.4 Hausman Test

Hausman test was done to determine the suitability of either fixed effect or random effect regression model. The standard hypothesis of this test is that random effect estimator in the panel data, whereas the alternative is that the fixed effect model is the appropriate estimator. Based on the findings, chi-square value of 45.41 and p-value = 0.000, the null hypothesis was rejected implying that fixed effects was the most appropriate model of testing the hypothesis.

4.5 Results and discussion

Table 4 shows the means, minimum, and maximum values and the standard deviation of the research variable and data for a period between 2010-2018. Based on the table, the mean of financial sustainability was 0.351 with a minimum of -.864, a maximum of 4.91 and standard deviation of 0.93, whereas, the average financial leverage was 1.04 with a minimum of -3.91, a maximum of 4.82. and a standard deviation of 1.33. Furthermore, the MFI age and size had a mean of 1.86 and 0.736, as the standard deviation was 0.181 and 0.46 respectively. These indicate the variability of variable changes over some time.

Table 4: Descriptive Statistics

Variables	Obs	Mean	Std.Dev	Min	Max
Financial sustainability	270	0.35	0.93	-0.86	4.91
Financial leverage	270	1.04	1.33	-3.91	4.82
Firm size	270	1.86	0.18	1.15	2.24
Firm age	270	0.74	0.46	0.00	1.09

Source: Research Author, (2019)

4.3 Correlation Analysis

The study used correlation to examine the nature of statistical relationship between financial sustainability, financial leverage, firm age and firm size. The correlation matrix is illustrated in table 5, where the results show that financial sustainability and financial leverage had a positive significant correlation (r= 0.162; p<0.05). Further, the correlation between financial sustainability and MFI age (r=.039, p<0.05), financial leverage and MFI age (r=.315, p<0.05), financial leverage and MFI size (r=.383, p<0.05), MFI size and MFI age (r=.459, p<0.05) was positive. While, financial sustainability and MFI size (-.271, p<0.05) were negatively correlated.

Table 5: Correlation Matrix Results

Variables	Fsn	Fl	Fa	fs
Financial Sustainability (Fsn)	1			

Financial leverage (fl)	.162**	1		
Firm age (fa)	.039**	.315**	1	
Firm size (fs)	-.271**	.383**	.459**	1

** Correlation is significant at the .05 level * Correlation is significant at the .01 level

Source: Research Author, (2019)

4.4 Regression Analysis

The study's hypothesis was tested using a fixed-effect regression analysis. The hypothesis stated that financial leverage had no significant effect on MFIs financial sustainability in Kenya. The findings reported a beta coefficient of 0.1713 and a p-value= 0.000 <0.05, therefore, the null hypothesis was rejected implying that the alternative hypothesis was adopted. Thus, a unitary change in financial leverage led to a 0. 1713 unit change in financial sustainability. The overall regression model had an explanatory power of 0.235, which implies that the model predicts 23.56% variability in the financial sustainability of MFI.

Table 6. Results of fixed-effect regression analysis

MFI financial sustainability	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
Firm Age	0.524	0.174	3.02	0.003	0.1799	0.868
Firm Size	-0.481	0.108	-4.49	0.000	-0.693	-0.269
MFI financial leverage	0.171	0.054	3.19	0.002	0.065	0.277
_cons	2.986	0.691	4.32	0.000	1.617	4.354
R squared	0.236					
sigma_u	0.525					
sigma_e	0.631					

F statistic	F(28,123)
Prob(Chi2)	0.000
No of Obs	270

The study found a positive relationship between financial leverage and financial sustainability. Consistent with these findings, Hassan & Bashir, (2003) postulated that profitable firms borrow more because their repaying capacity is guaranteed. In a similar case, Harelimana, (2017) elucidated that financial leverage is a driver of MFIs sustainability. The findings are further supported by (Akhtar *et al.*, 2011), who contend that financial leverage signifies a positive expectation on financial returns. Levered firms have a higher market value due to the benefits arising from tax shield (Modigliani & Miller, 1963). Though, excessive use of debt capital might lead to financial distress thus lowering the firm's value (Ross et al., 2002). Hartarska and Nadolnyak (2007), confirmed that MFIs with less debt have better financial sustainability. Therefore, managers should craft policies that guide optimal financial leverage to enhance MFIs' financial sustainability. This is so, especially in developed nations where MFIs have a high potential of growth but they suffer from low deposit levels and underdeveloped external capital market.

5. Conclusions

The findings of this study revealed that financial leverage had a positive significant effect on MFI financial sustainability. Based on these findings, the study concluded that financial leverage would lead to financially sustainable MFIs. Accordingly, MFIs should consider using debt to finance their operations besides mitigating possible agency conflicts. Further, the study confirms that, though finance theories advocate the usage of debt, financial leverage is a double-edged sword since it can either improve MFI financial health or sink these institutions into financial distress.

6. Recommendations and suggestions for future research

Microfinance institutions have been feted and perceived as a panacea to poverty alleviation and financial inclusion. However, MFIs are largely financially challenged. To address this problem, and based on the findings, the study recommends that management should give priority to external financing to improve

financial sustainability since debt improve firm value and it a cheap source of finance. In addition, shareholders should consider debt financing since it aligns managerial goals to those of the firm, principally shareholders' wealth maximization and profit.

Also, the study recommends that MFIs should develop borrowing strategies to guide managers to ensure prudent borrowing that contributes to the overall profitability and boost investor confidence. Finally, the study recommends that future studies can consider other subsectors such as banks, Sacco's and insurance companies, which might shed more light on the relationship between financial leverage and financial sustainability.

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Service Learning: Benefits of Another Learning Pedagogy

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Abstract

The Service Learning is an articulated, consistent and coordinated teaching-learning methodology. It resorts to unique assumptions, integrates the learning of technical and scientific knowledge with the personal, social and community development. This methodology permits the student to realise interdisciplinary work and produce plasticity on his/her creativity whilst producing cognitive, personal, social, emotional and transcendental knowledge. This process allows for the development of interpersonal, intrapersonal relations, communication, it fosters joint work and networking, leadership, cooperation and negotiation, personal effectiveness, self-knowledge, self-esteem and self-motivation. It also sensitises students to address humanitarian issues and for the everyday life of the community and social responsibility. This study reflects on the importance of teaching-learning methodology based on Service Learning and it discusses the relevance of its inclusion in the academic curriculum. It uses qualitative methods of data collection and analysis, favouring group interviews with content analysis.

Keywords: Service-Learning, University, Methodology, Student's holistic development, Alternative learning pedagogy

1. Introduction

The Service Learning (SL) is generic concept with many brands and each region gives it an importance and a specific designation (Tapia, 2013). Hence the existence of different names to signal the Service Learning is as diverse as Solidarity Schools, Schools of Good-living, Learning- Service, Learning + Service, Service-Learning, Active Learning in the Community Social Services; Ethics and Citizenship Training, Mandatory Social work; Community Social Practices, Social Educational Practices. Celio et al (2011: 168) also share the same feeling and feature names such as: "service-learning," "community service," "experiential learning," "public service," "civic engagement," and "civic involvement". It is another pedagogical methodology which establishes other objectives (Ballesteros-Sola, 2017) and exceeds the specificity frontier and spreads to most of the questions, as it is the case of soft skills that are cross-cutting to function, time and society. It focuses itself upon sustainable development and it intends to identify, understand and solve social disagreements that affect the community. It is a dynamic and interactive process of applying scientific knowledge to the problems of the students' development and communities and it rises as a good multiplier of tacit knowledge (Rutti et al, 2016).

Despite the significant benefits derived from Service-Learning as a learning teaching methodology for the development of the student, the university, the local community, the economy and society, higher education institutions, especially in the sphere of the Economic and Business Sciences, still rely highly upon traditional learning teaching methodologies, which are vertical top-down ones and of expository and independent nature of the community. They are a lot more based on specificity rather than general approach and focus a lot on the specific technical and instrumental skills. However, they neglect other key skills that value the knowledge economy, as it is the case of emotional and spiritual skills. In this way, learning present weaknesses and flaws in the training of more ethical students for business and everyday life. In this sense, in the opinion of Moorer and Christian (2009), business schools have been slow in implementing alternative pedagogical practices and more appropriate to the community and have failed to include service learning in their curricula. This pedagogy is globally important and it should be disseminated and applied to all areas of knowledge (Moorer and Christian, 2009). Lawler and Joseph (2009) do also consider that service learning, while a learning pedagogy, seems to be very suited to graduate interdisciplinary courses, particularly those of the areas of the humanities. However, while a pedagogical instrument and inclusion, service learning is being broadened and studied in a wide range of areas of knowledge, such as Economics, Management, Business, Finance, Engineering, Psychology, Mathematics, Accounting, Nursing, Sociology, Political Science, Education, Geography,

Communications, Computer Technologies, Urban Geography, Planning, *inter alia* (Rutti et al 2016), which underlines its importance in any area of knowledge.

The Service Learning offers interesting pedagogical benefits. Therefore, this study envisions to address the feasibility and relevance of including the SL in the curriculum of the Undergraduate Degree Programme in Economics. In this sense, we sought to determine the sensitivity of a group of faculty from the University of Minho, in the economic area, about the relevance of adopting this teaching-learning methodology. We resorted to the use of qualitative methods of data collection and analysis, in particular, group interviews with content analysis. The group interviews were conducted using a semi-structured interview guide. Two Focus Group were conducted and we observed the homogeneity of the participants to ensure fairness/equity in the intervention, participation and discussion.

2.   Service learning: Strategic learning methodology

Service learning, hereinafter referred to as SL, is not a new methodology (Sedlak et al, 2003). It is a pedagogical conciliatory strategy that nurtures collaboration, mutual respect, relations between people and endeavours to establish the bridges between the University, the students and the community (Petracchi et al, 2010). Is a pedagogical approach and it addresses education from an experience perspective. It has been applied to various disciplines, courses and various levels of education, by several universities worldwide (Yorio & Ye, 2012). It allows for reconciling school practices with the community work and improves the skills and the citizens' civic responsibilities (Andrews, 2007). It translates itself in the art of teaching the interaction between the University, the community and the student and it embodies diverse branches of personal and social enrichment, namely undertaking of civic responsibility, social cohesion, community development and the feeling of happiness throughout the learning and teaching processes and being an active molecule within the community. It works the human intelligence and it merges the relational, emotional, intellectual, spiritual, interpersonal and intrapersonal bits of intelligence. In this light, it is a possible alternative to humanise organisational institutions and society in general. This process of humanisation can foster the materialisation of a new culture where companies become closer to citizens and society. It may also stimulate companies to be more and more involved in social projects and assume and implement entrepreneurship and their social responsibility.

There are many definitions of SL, though not always convergent as regards results, objectives and importance (Billig, 2000). According to Williams and Lankford (1999: 37) s*ervice learning is experiential education engaged in by students. These experiential activities address human and community needs and are*

accompanied by structured opportunities specifically designed to promote student learning and development. It is a powerful pedagogical tool for the individual's personal and social development and it orients the students toward the essence of their root as human beings, causing them to dive in a pool of personal values and civic responsibility (Bringle et al, 2016).

As such, it is a process that makes the students more active, positive and cooperative with society (Billig, 2000). The SL can be assumed as a philosophy of education, as a method of teaching or as a tool for school inclusion. Its implementation will lead to structural changes in the institutions and in the relations of partnership they will establish amongst the productive market, the market of education, behaviour and involvement of stakeholders, including civil society in general. It is a beneficial learning pedagogy (Tiger and Parker, 2011) and it involves the student, the school and the community in an interactive learning process. The symbiosis of those elements creates an atmosphere of trust among the parties involved. This process is an opportunity for students to improve their education administered within the school context (Kenworthy-U ' Ren & Peterson, 2005; Tiger & Parker, 2011) because the community functions as a classroom where the citizens are excellent mentors. However, the SL is still little used as a learning strategy and it is almost non-existent in the management and business course units, although it has seldom been used in higher education, in an isolated and sporadic manner. (Gujarathi & McQuade, 2002; Desplaces et al, 2006; Kenworthy-U'Ren & Peterson, 2005; Elwell and Bean, 2001; Williams and Lankford, 1999).

Although it is still a novelty to most higher education institutions, the SL is a didactic and pedagogical tool available to any educational institution and there is already some positive evidence of its results (Petkova, 2017). Its formal introduction in the curriculum seems to foster a structural change of the programmes and it might achieve the expected results for the betterment of society. This implies a preliminary reflection on the mission of universities, as well as the service that will be provided to the community. However, evidence suggests that the student learns more and better when he/she is part of the co-creation of knowledge porocess (Mpofu, 2007), as this it amalgamates assumptions of cognitive, civic, social, relational, emotional, and spiritual learning.

3. Service learning Benefits

Although it is important to delve deeper in this area to further support the relationship between the SL and the universities performance, the available literature is already rich in this related area. (Furco and Root, 2010). However, the SL is considered as a pedagogy of success for the teaching of entrepreneurship (Calvert, 2011) and as the methodology of SL comes in universities, the culture and

climate of these change naturally (Bringle and Hatcher, 1995). It is an educational pathway that helps to consolidate learning through reflective self-examination (Dunlap, 2006; Petkus, 2000) and it gives the student autonomy and control over his/her own learning process. It does also nurture the feeling of competence, self-efficacy, better social relations and sound connections (Billig, 2010) and it gives the student a sense of well-being at work. It is a learning methodology that involves the student and the community in a process of mutual interdisciplinary development and facilitates the access to knowledge (Tiger and Parker, 2011; Kenworthy-U ' Ren & Peterson, 2005; Mpofu, 2007; Al-Rashid and Walker, 2004; Conway, Amel & Gerwien, 2009). It creates social capital (Laura, 2014), fights poverty (Ebrahim, 2012), commits students with fairness (Heffernan, 2001), promotes social justice (Wang and Rodgers, 2006) and it renders students ever more altruists (Hegarty and Angelidis, 2015).

The application of the SL by educational institutions is one way to achieve a fairer and more sustainable society because it resorts to a teaching-learning process focusing upon justice and social commitment (Gaete, 2011). Therefore, Gaete believes that the SL is a cutting-edge transformational tool. It has power over the person, transforms his/her attitudes, actions and behaviours and it is an asset at the reach of humanity. When integrated thematically in the courses, it becomes an instrument of sustainability of society and it focuses people upon their concerns (Cheese and Hills, 2016; Dmochowski et al, 2016).

According to Bringle and Hatcher (1995), the SL should be expanded by the universities through direct development of the curriculum. These authors believe that there are many ways to implement it, in particular *through their involvement in the community, personal advocacy for an issue, political engagement and activism, or experience in related pedagogies* (Bringle and Hatcher, 1995: 112). However, they add that service learning could integrate subjects with more sensitivity and susceptibility to ethics and to the practice of service, pointing it as an example of social work. It should be noted that the SL cannot be confined to a discipline, because it is across all disciplines and it is a reflective, participatory, collaborative and humanitarian learning, which underlines the importance of ethics in the process.

 For the institutionalisation of the philosophy of SL, the development of planning is important due to: (i) Common Vocabulary, (ii) Academic Integrity, (iii) Increase Support and Confidence, (iv) Institutionalisation (Bringle and Hatcher, 1995: 113), furthering the need for the change of the culture and mission of the University, and the SL should be developed within the characteristics of the culture of the institution (Heffernan, 2001). Which is why it should be well planned and integrated into the courses because it enhances the indexes of altruism and pedagogy (Hoffernan, 2001). It also improves and renders life more exciting for the performance of students and of organisations and for taking responsibility for a healthy citizenship (Dunlap, 2006; Petkus, 2000) because, as an experiential learning process, the SL stimulates actions like planning, design, structure, implement and evaluate courses

(Petkus, 2000). The SL should also be a tool for pre-university teaching, which would mean a rewording of the study plans and a redefinition of the mission of educational institutions (Appelbaum et al, 2017). Despite the initial effort the adoption of this methodology implies, it favours the sustainability of human life through the creation of a more sensitive society to the collective goods, while the macro threshold for every citizen. In this way, the issues of sustainability should be formally integrated into the academic curriculum, as it must occur within organisations and in every moment of citizens' lives (Dmochowski et al, 2016; Rusinko, 2010). Although it is complex and interdisciplinary, its integration has clearly defined goals, which, resorting to Lee, (2012) we list below:

1. grasp and understand interdisciplinarity and theoretical knowledge of a discipline,
2. understand, apply and adjust strategies to solve problems by means of appropriate methods and technologies,
3. communicate and work in group and in front of audiences,
4. understand professional responsibilities to the ethical, legal, and security level and draw a solution,
5. understand social aspects and give them appropriate solution,
6. raise awareness for the continuous acquisition of relevant knowledge.

If one compares to traditional education, reflections on the SL within higher education, outshine that students involved in this system are more positive, committed, responsible and sensitive to social issues and concerned with other people. They also unveil that these students trust more in the values and general principles governing life in society, which shows that the SL has a strong impact on the student, on the University and on the community at the personal, moral, social, relational, cognitive and spiritual level (Markus et al., 1993). Hence, there are many benefits which inspire us to defend the introduction of SL in the academic curriculum, among which, and according to García García and Cotrina García (2015: 18), we can list:

a) it allows students to link themselves with future labour performance contexts;
b) it raises their pedagogical awareness;
c) it favours the development of a more realistic perception of the teaching profession;
d) it builds their confidence when peforming their profession;
e) it promotes the educational dialogue with teachers, *et cetera.*

According to Newman and Hernandez (2011) and Hernandez and Newman (2006), the educational institutions that implement an SL programme demonstrate good performance. These authors have delivered the course "Minding our Business" (MOB), in 1997, and they were supported by the College of Business Administration. They concluded that students who attended the course demonstrated an outstanding performance, namely in decreasing absenteeism, increased interest in belonging to their institution, unveiled a high drive to start their own business, they were eager to acquire more skills for their personal development and build their self-esteem, among others. They also consider that students have developed their communication skills, interpersonal development, teamwork, leadership, open-mindedness for thinking and problem-solving skills, concluding that the MOB is an excellent SL programme. In this sense, they indicate that the main objectives of the Minding our Business Learning are summarised in table 1:

Table 1. Minding Our Business Learning Goals

The highest thinking level it requires or whether it refers to affective/moral or skill development follows each learning goal.
1. *Develop a strong sense of social responsibility for the youth of the partner middle school. AFFECTIVE/MORAL*
2. *Understand the basic principles associated with the operation of an effective team. COMPREHENSION*
3. *Become a more effective team player. SKILL DEVELOPMENT*
4. *Develop mentoring and team facilitation skills. SKILL DEVELOPMENT*
5. *Improve leadership and communication skills. SKILL DEVELOPMENT*
6. *Develop sensitivity and respect for social class, ethnic and racial diversity. AFFECTIVE/MORAL*
7. *Understand some of the main issues and concerns of pre-adolescent development. COMPREHENSION*
8. *Apply the basic concepts of entrepreneurship to a student run business. APPLICATION*
9. *Facilitate the process of starting and running a business. APPLICATION*
10. *Set up a projected income statement for a small business. APPLICATION*

Source: Newman and Hernandez (2011: 41)

Newman and Hernandez (2011) and Hernandez and Newman (2006), summarise evidence demonstrating that the results of the courses based on SL are not all the same and that they depend on some variables, among which we underline the culture of SL and its alignment with the mission of the institution. Hence, the mission of the institution feeds the culture of a university based on SL.

Despite the importance of Newman and Hernandez (2011) and Hernandez and Newman (2006) research, the SL should not be confined to a course but a part of the academic curriculum because the SL is across all areas and all courses. However, the courses related to the social area (case of social work

and social economy) seem to be more sensitive to SL than other courses. Nevertheless, regardless of the area and course, according to Conway, Amel & Gerwien (2009), the outcomes of the SL can be grouped in four blocks: academic outcomes, personal outcomes, social outcomes and citizenship outcomes: *academic outcomes*: enshrines academic and cognitive changes, the ability to apply knowledge, skills and learning to motivate and foster the individual accountability.

1. *Personal outcomes*: underlines the interpersonal skills, values and personal beliefs. It also outshines behaviours and attitudes that will improve the well-being of the individual,

2. *Social outcomes*: emphasises the interpersonal, group and social skills. It focuses upon the interaction with others, respect for others, respect for the community, empathy, thoughts and beliefs about the other are part of this block of results,

3. *Citizenship outcomes*: focuses on democratic participation, awareness and social responsibility, personal participation, justice, ethics and civic movements. Those are results to be embodied in the process service-learning.

In this manner, there are endless benefits of SL, whose results are hardly visible or measurable. Overall, its benefits and challenges for the stakeholder are identified by Ballesteros-Sola (2017:20-21) in table 2.

Table 2. Summary of benefits and challenges by stakeholders

	Benefits	Challenges
Students	• *Experiential hands-on learning* • *Connection to community* • *Sense of purpose* • *Tangible experience "sellable" for internships & jobs!*	• *Tim consuming hard for students juggling many demands* • *Managing expectations not a course for an easy A* • *Apathy and lack of continuity* • *Short terms mindset – "Will this get me a job?"* • *Inexperience not all students can rise the occasion* • *Uncertainty "spoon feeding" temptation* • *Feelings of frustration when social business doesn't materialize*
Community Partners	• *Free "consulting"/ access to business skills* • *Learning about YSB and earned income strategies* • *Closer ties to the university* • *Networking opportunities* • *Positive PR*	• *Time consuming: "I am running a nonprofit or social business, no time for this"* • *Managing expectations: "Can undergrads really deliver"?* • *Lack of project continuity: "What happens when semester is over?"* • *"We aren't a business, we can't understand the lingo"*

Professor	• *Engaged & motivated students* • *Tangible results* • *Positive PR* • *"Meaningful" teaching* • *Research opportunities*	• *Time consuming* • *Managing expectations / "high performance" pressure* • *Lack of project continuity* • *Lack of control over unforeseen factors* • *Institutional support/recognition (does it really count for tenure?)* • *Communication and coordination challenges too many stakeholders*
SCORE Counselors	• *Advising with a purpose* • *Working with students* • *New connections & networking opportunities* • *Exposure to a new way to think about business*	• *Time consuming* • *Understanding Yunus Social Business and the idea of merging purpose and profit* • *Working with unmotivated students*

Source: Adapted by Ballesteros-Sola (2017: 20-21)

4.   Methodology

The empirical study uses qualitative methods of data collection and analysis, in particular, group interviews with content analysis. The group interviews were conducted using a semi-structured interview script. We conducted two Focus Group composed of six elements in the first and five in the second, and with faculty of the Department of Economics, School of Economics and Management, University of Minho. The study considered the social representation of participants, seeking to articulate the objective with the subjective of the discussion, in accordance with the recommendations of War (2006). The in-depth interview including the "focus group", allows to collect data enriched by the experience of the participants (Patton, 2002) and realise a structured discussion with a small group of participants, moderated by one or more facilitators (Prince and Davies, 2001; Marczak and Sewell, 2007 cited by Masadeh, 2012. The biggest advantage of this technique lies in the characteristics of inquiry and discussion through questions fully open with a potential of possibilities that other techniques do not allow to, namely by means of inquiries where the questions should be, by nature, closed. The groups in focus group formats should ensure some homogeneity with regard to their profile (Dreachslin, 1999) in order to be more equal to the contribution of the participants in the discussion of the topics under discussion (Gibbs, 1997; Boddy, 2005).

The group discussion permits access to the perceptions, the meanings and the assignments that the faculty members who participated in this research build on their understanding of the teaching of economics and how they perceive humanisation. The intervening professors' lines of investigation include Environmental Economics, Development Economics, Social Economics, Economics of

Education, Labour Economics, Regulation Economics, Econometrics and Financial Economics. The size of the groups considered the guidelines recommended by researchers using this methodology. According to Masadeh (2012), researchers indicate a number of participants that will vary between 4 and 12. However, Leitão and Vergueiro (2000) Marczak and Sewell (2007), cited by Masadeh, 2012, indicate 7 participants and Greenbaum (2003) between 8 to 10 participants.

Once we completed the transcription of each interview, these were carefully read, looking for the core contents of each interview and underlining the respondents' responses and ideas about such contents. In this stage, we followed the recommendations materialised by Bardin (1977), whereby the first level of the research based on semi-structured interviews consists of what the author means by structural decoding centred in each interview. The drawing was made of the various contents of the interview, thereby attempting to rank them as well the links they might have with other contents.

Finally, we have drawn the synopsis of the interviews by means of the content assessment grids.

5.   Content Analysis of the group interviews

The scope of this investigation is the perception of the Faculty of Economics about the introduction of the Service Learning in the teaching-learning process in the Undergraduate Degree Programme in Economics as a supplementary teaching tool.

In the two Focus groups conducted, teachers stressed that the focus of teaching-learning in the degree in Economics should be built, almost exclusively, on the basis of foundational models and quantitative methods. Which explains why they perceived many difficulties to use the SL model at the level of the first cycle studies. This strict attitude raises obstacles to a possible implementation of the SL methodology. However, teachers admitted the possibility of introducing social content, after teaching the disciplines that they regard as fundamental to the student (mainstream). They claim they saw the possibility of making branches in disciplines belonging to the terminal phase of the degree course for the implementation of the social dimension and stressed: "there are things that are structural which can inspire students to do different things; they are not exceptions in the economic science related field, but rather branches" and they added "we cannot adjust permanently the teaching to reality" because " there is a set that is structural and that everyone needs to know, which is the core of the course and that is independent of what is happening out there in the society ". In this way, participants assumed the need for disseminating knowledge as a method of learning to be followed. Despite this rationale, teachers also recognised the importance of economic sustainability and the trade-off between efficiency and

equity, recognising that they could eventually consider the teaching and learning of the social sphere. They add that, in the future, such a reality could lead to the implementation of Service Learning. However, the teachers reaffirmed that its eventual implementation could only occur in the last year of the degree or 2nd cycle of studies (Master's Degree). Hence, its introduction in the curriculum would need a basis of dialogue between the programmes of the Undergraduate and Masters Courses, stating: "it is necessary to draw a common basis for dialogue and thereafter design the branches or deconstruct". Teachers find it difficult to draw it as the content of a 1st cycle Course Unit due to the current curricula structure and the course units current syllabus they have to deliver in the classroom: "it's too hard to fulfil the course units' contents let alone introduce as evaluation object dimensions are not in the syllabus/content". Given the aforementioned constraints (reservations), it seems more favourable to its implementation at the level of the 2nd cycle courses, stating: "I do not know if these issues should not reflect on a framework of courses after graduation; eventually, it might make more sense in an evaluative form in the 2nd cycle". Teachers consider that eventually they could introduce some of the social issues in optional course units of "social economics" and "environmental economics", which gravitate around problems yet to be solved. However, they reaffirm: "it sounds interesting ... but I fail to see how to fit it in the curriculum".

When talking about how to draw the students of the degree in economics' attention to social issues, it was addressed the importance of an inclusive school as opposed to the current dominant model. Nevertheless, teachers express their concern with social issues, giving preference to the training of the students to enter the highly competitive market. In this sense, it was suggested that the issues of inclusion, citizenship and social commitment should be introduced in the teaching-learning process, in a pragmatic manner, punctually and voluntarily.

Teachers have expressed apprehension and unawareness about the methodology of the SL by stating: "the awareness that there is a world out there, with which we have to worry about, can be done in the same manner as undergone in the environmental and social economics". In view of the lack of knowledge about the methodology in the analysis (Service Learning), there was a confusion with volunteering practices, or services practices already inserted in the University extension or pedagogical practices of learning in the working context (stages). There appeared expressions such as: "the student will be part of society, to any organisation of the real world and he/she has to identify problems". They have also stated that these practices would be identical to volunteering contexts. As such, they considered that the methodology of SL could not be used in the course units because these are evaluated and mandatory as opposed to the SL which would be, in their understanding, volunteering, adding: "one cannot be forced to volunteer, whether we like it or not. It might be a bit perverse the student goes

volunteering to earn points within the format of his/her curriculum". However, the facilitator stressed that volunteering is different from community service and service learning. This rationale raised the question of the social awareness of students, which is considered a key step to understand the community where students live. Whilst stressing again the disciplines of social economics and environmental economics, one of the participants, who profiled the agreement of others, said: "probably it increases more awareness and it might extend itself more to several course units and it seems to be a competence to develop. Another thing is to approach society by following the employers' suggestions, that is, it is the University that should perform this job. In this manner, its implementation should be indicated explicitly in the curriculum. However, the professor thinks that the function of the University education is not to teach someone to work".

Another dimension raised about the introduction of Service Learning was its inclusion in the field of soft skills, which is a programme that already exists in the School of Economics and Management. This rationale was not defended because those skills are not mandatory for the completion of na Undergarduate Degree in Economics. Thus, it was suggested the possibility of its inclusion in University extension projects by invoking that it would also be a good link to the community and a solution that would involve the creation of an additional and obligatory curriculum unit. However, another participant said that the current University extension is just a provision of services by teachers. In this manner, considering the Service Learning within the University extension could only make sense if offered in a completely different format.

According to the teachers, another obstacle to the implementation of the SL lies in the fragile students ' drive for social activities that do not involve a classification and claimed: "they will probably strive to get a good grade on this course unit only, ending their interest here for this discipline". Another teacher, putting himself in the role of the student, invoked "I got tired of working, I have devoted my time, and the other who performed less will have a similar classification". They have also observed that the student community sphere is limited to the University campus, their accommodation and leisure environments located around the campus, seem to render them unaware of the pulse of the city.

These are aspects that request further in-depth discussion because it is a cross-cut assumption of the collective and individual social responsibility and accountability. In the absence of this (co)responsibility, the implementation of social practices and the community aid will struggle with structural problems, which will prevent its natural development.

6. Discussion and Final Remarks

We think that, due to the general unawareness of the teaching-learning methodology of SL learning, teachers have expressed many reservations about this methodology, considering the odds and perhaps the difficulty to apply it. They have even taken it as volunteering practices proxy and other pedagogical practices such as placements and applied existing projects in some disciplines. They have stated that one cannot be constantly adapting the curriculum to present reality. In this light, and considering that the SL is a methodology devised to establish a bridge between the student and the community, and considering the gap between the students and this reality, would not it be appropriate and urgent the introduction of SL in different courses?

Despite their lack of knowledge about the methodology of SL, teachers demonstrate, however, a positive positioning in relation to activities of social nature. Nonetheless, the aspect which seems to hinder back its implementation still are the extensive syllabus designed for the Undergraduate Degree Programme in Economics. Teachers defend the introduction of this methodology in some of the course units, in a pragmatic manner.

Regarding the difficulties of implementing the Service Learning, we understand that:

1. Firstly, it seems necessary to deliver training actions for teachers and in parallel to the student community. These training sessions should explain the methodology of SL and highlight its objectives and benefits. They should also stress the requirements of the method, namely in terms of commitment, responsibility/ accountability and cooperation.

2. The SL is an interdisciplinary learning teaching methodology. As such, we believe it is important to underline that the success of its implementation draws on the changing of each course unit isolated perspective, where the course unit does need to be autonomous and to contribute for the personal development of the student in an integrated manner.

3. The SL is a collaborative and interactive learning methodology between the University, the student and the community within its various social institutions. Hence, it seems relevant to accentuate the social concept within the methodology of SL.

4. It would be necessary to clarify the stereotyped concepts of "volunteering", "social", "responsibility/accountability", "cooperation" and "commitment". Indeed, the social dimension is not synonymous to charitable, of kindness interested or other forms of individual objectives.

5. It seems important to fight back the idea that SL is not a volunteering practice nor the application of course units, such as internships and visits to companies. One cannot confuse this methodology with graduation projects. The SL focuses upon the holistic development of the

student and the community and deviates itself from the methodologies that focus primarily on technical and instrumental skills.

6. The SL is a learning teaching methodology of mutual co-responsibility. It allows the student to address real social problems, to feel and tackle them the way in which he/she handles real issues. In contemplating such situations, the student is aware of a social reality that the University and related activities within the framework of different disciplines conceal. In this sense, the researchers consider that the SL is a humanising Learning-teaching methodology, which is consistent with the available literature.

The University does play a strategic role in the economic and social development. It may be the pivot in connecting institutions and the community. The SL is a crucial instrument for the achievement of those goals. It is a pedagogy of global value and should be disseminated and applied to all areas of knowledge. With the SL, knowledge diffuses and excells itself in interpersonal relationships, continuous and dynamic among all the participating elements of the teaching-learning process and the community.

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Influence of Logistic Service Reliability Capability on Firm Performance in Kenya

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Abstract

Firms integrate logistic capabilities in their operations to improve performance, which is advocated by the resource-based view theory. Many forms of logistic capabilities exist, but the most widely used is the logistic service reliability capability. There are numerous attributes of logistic service reliability capabilities used by firms which could potentially affect the effectiveness of the logistic service reliability capabilities on firm performance. Therefore, this study determined the influence of the attributes of logistic service reliability capability on firm performance of manufacturing firms in Kenya. The independent variables were firm reviews, client services, research for firm performance, reverse logistics operations, logistics service differentiation and logistics solutions. Using an explanatory research design, the study targeted 750 manufacturing firms registered under Kenya Association of Manufacturers from where a sample size of 442 firms was selected. The samples were selected using stratified and simple random sampling approaches. The findings of the study established that there was a positive significant influence of the attributes of logistic service reliability on firm performance (R-squared = 0.6421, $P < 0.05$). Therefore, whenever firms aim at optimizing logistic service reliability capability, the firms must pay more attention to each attribute of the logistic service reliability capability. Therefore, exploring avenues of improving each attribute of logistic service reliability capability of firms may eventually improve the overall performance of the manufacturing firms.

Keywords: Firm Performance; Logistic Capabilities; Logistic Service Reliability Capability; Manufacturing firms, Kenya

1. Introduction

Firm performance are characterized in terms of effectiveness, efficiency, relevance, and financial practicality (Arena *et al.*, 2015). Effectiveness, measures the degree to which the organization is successful in achieving its internal strategy while efficiency refer to how well the organization utilizes its resources in pursuit of its goals, relevance measure to provide information on the degree to which stakeholders believe that the organization is relevant in meeting its needs. There are several measures in firms indicating the performance. Among these, financial outcomes such profit margins, return on assets (ROA), return on investment (ROI), shareholder returns etc. are key considerations (Kharatyan *et al.*, 2016). Emphasis has also been laid on an assortment of non financial aspects such as market share, customer service, social responsibility, employee stewardship etc (Kristjansdottir *et al.*, 2016; Torres *et al.*, 2018; Owens *et al.*, 2019). Strategies that ensure optimal firm performance often strive to couple links between financial and non financial measure in the firm (Ibrahim & Lloyd, 2011; Chiang & Birtch, 2012). Firms employ several strategies to improve their overall performance, including emphasis on logistic capabilities of the firms (Liu & Luo, 2012).

Logistic capabilities include the firm's resources (including assets, competencies, processes, firm attributes, information, etc) that permit them to implement plans that improve business efficiency and effectiveness (Najafizadeh & Kazemi, 2019). Firms engage logistic capabilities in supporting production, building firm's effectiveness, and facilitating profitability in the business environment (Durst & Evangelista, 2018). The capabilities are unique to each organization and may therefore differentially influence the inclusive performance. This include coordinating assets, competencies, organizational processes, information, knowledge etc (Schönsleben, 2018; Zijm *et al.*, 2019). Many firms prioritize to improve their logistics capabilities by giving more attention to logistic service reliability capability.

Logistics service reliability capability form fundamental part of any supply chain management involving designing, implementation, and regulation of forward, and backward flow effectively and efficiently as well as storage of goods, services, and related information (Franceschini & Rafele, 2000; Chapman *et al.*, 2002). The foremost activities of logistics service reliability capability include shipping of raw materials, distribution, warehousing, and quick deliveries of end-products to consumers. Therefore, organizations that intent to achieve better performance emphasize on the logistic service reliability capability of the organization. Logistics service reliability capability enables the logistics firms to generate and set out resources to satisfy their customers and in so doing enhance service performance (Lai, 2004). There are a number of attributes that define logistic service reliability capability within the firms, which may differ among across several organizations. The

widely reported attributes of logistic service reliability capabilities include: firm reviews of service provision, client services quality scores, follow ups on service delivered, reverse logistic operations, speed of service delivery and logistic solutions, among others (Yang *et al.*, 2016; Fernandes *et al.*, 2018).

Firms intending to improve their overall performance. Therefore, need to emphasize the role of individual attribute and how they affect firm performance. However, there are currently few studies that have looked at the influence of each of the attributes singly or in combination on the overall firm performance. Therefore, the aim of this study was to evaluate influence of the attribute of Logistic service reliability capability on performance of manufacturing firms in Kenya, furthermore, test the following hypothesis: H_{01}: There is an association between attribute of firms' logistic service reliability capability and firm performance

This study used the resource-based view which asserts that firms can gain and sustain competitive advantages which results to superior performance by developing and positioning valuable resources and capabilities or through acquiring and controlling the resources (Barney, 2001; Schroeder *et al.*, 2002; Kraaijenbrink *et al.*, 2010). In the context of RBV, organizations are viewed on how their assets, systems and capabilities are used in creating value. In most cases, the firms that gain advantage are those capable of accumulating resources and capabilities that are rare, valuable, non-substitutable and difficult to imitate. Capabilities of the firms take diverse forms such as innovation, organizational learning, and stakeholder integration (Siguaw *et al.*, 2006). Accordingly, the focus has been on those capabilities and resources contained within the organization. Nevertheless, a firm's resources extending beyond their boundaries, is also capable of creating a competitive advantage and should also be considered. There is a relatively large literature in logistics service reliability capability considering the realm of RBV. Therefore RBV, can present a theoretical foundation for this study to examine the relationships between logistic service reliability capability and firm performance.
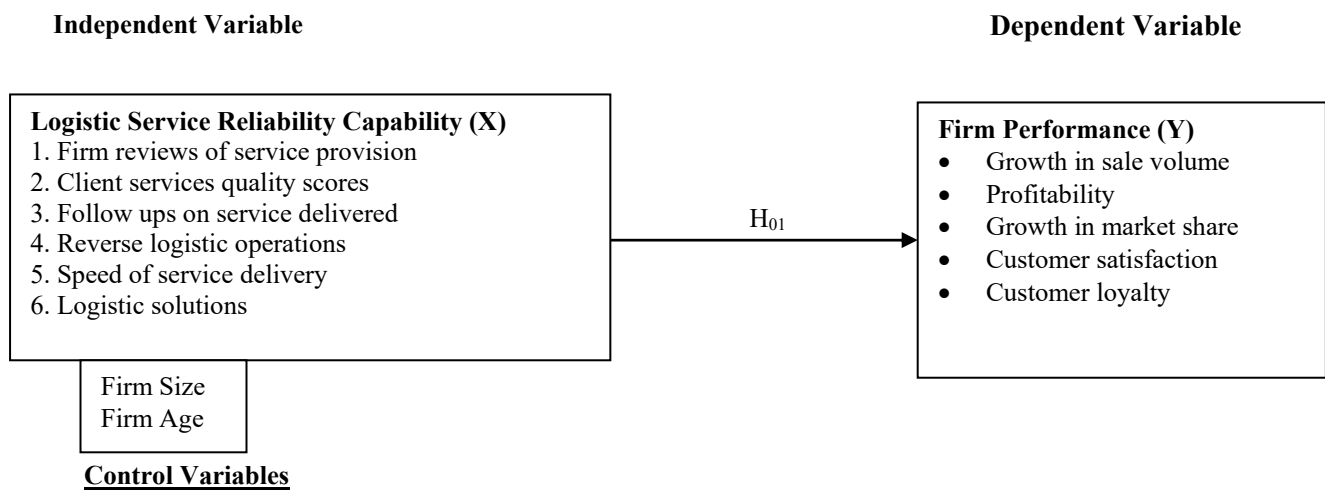
2. Conceptual Model of the study

Independent Variable   **Dependent Variable**

Figure 1: Conceptual Framework

3. Methodology

This study used positivism approach, which sought to use existing theory to deduce and formulate variables. The study was conducted using explanatory research design of a cross sectional nature. Explanatory research design analyzed the cause-effect relationship between two or more variables (Rahi, 2017). Hence the design was appropriate to the study because the research sought to establish a cause-effect relationship on the two constraints which is Logistic service reliability capability and firm performance. The target population was 750 manufacturing firms registered with Kenya Association of Manufacturers (KAM, 2018). The unit of analysis were purchasing and logistic managers of each firm which resulted to a sample size of 442 respondents. Stratified sampling combined with simple random sampling technique was used to select sample size. Structured questionnaires were used to collect data for dependent and independent variables, where each item was subjected to Five-point Likert scale ranging from Strongly Disagree (SD) to Strongly Agree (SA).

The dependent variable was firm performance measured using subjective measures of sales volume, profits, market share, customer satisfaction, customer loyalty and new products over the past three years as described in previous research studies (Farris *et al.*, 2010; Santos & Brito, 2012; Hill & Alexander, 2017). The independent variable was logistic service reliability capability was measured based on literature from previously published method (Fernandes *et al.*, 2018). To reduce the effects of confounding variables, the study included two control variables vis: firm size and firm age.

The reliability of the research instrument was tested using the internal consistency technique by employing Cronbach Alpha value of 0.7. Internal and external validity was assessed to establish whether the research instrument truly measures what it is intended to (Patino & Ferreira, 2018). Descriptive statistics used were the mean and standard deviation; inferential statistics was Pearson correlation coefficient to test the relationship and strength between the variables. Multiple regression models were used to test the hypotheses.

4. Results

4.1. Characteristics of the Respondents

The overall results of the socio-demographic background of the respondents are presented in Table 1. There were a higher proportion of the males compared with females suggesting more male employees in the firms. Most of the employees (45.7%, n = 202) were aged 36 to 55 years followed by 26–35 years. The least but not last is 21.3% (94) are above 18 to 32 years; lastly, 1.4% (6) is above 63 years. In terms of educational status, 43.9% attained Bachelor degree, 27.9% Master degree, 18.3% Diploma, 3.6% (16) of the respondents have Certificate level of education. Majority of firms employed between 50 and 249 employees (46.4%) followed by > 250 employees (24.7%) while 5% had less than 10 employees. Finally, overall age of the firm indicated that most had been operational operation from 10 to 30 years followed by those operating between 51-70 years. 26.2% had operated for a period ranging from 51 to 70 years while 3.6% (16) were in operation for less than 10 years.

Table 1. Socio-Demographic Information (n = 442)

Socio-demographic attributes (n = 442)	Variable attributes	**Frequency**	**Percent**
Gender	Male	235	53.2
	Female	207	46.8
Age	18-25 years	94	21.3
	26 – 35 years	140	31.7
	36 – 55 years	202	45.7
	< 55 years	6	1.4
Level of Education	Secondary school	5	1.1
	College Certificate	16	3.6
	College Diploma	81	18.3
	Bachelor degree	194	43.9
	Master degree	123	27.8
	PhD degree	23	5.2

No. of Employees	1-10	22	5.0
	11-49	106	24.0
	50-249	205	46.4
	> 250	109	24.7
Firm Age	< 10 years	16	3.6
	10-30 years	136	30.8
	31-50 years	85	19.2
	51-70 years	116	26.2
	> 70 years	89	20.1

4.2. Reliability of Research Instruments

The alpha coefficient results of the reliability tests (Table 2) show that follow ups on service delivered yielded the highest reliability (α = 0.945), followed by Speed of service delivery (α = 0.888), client services quality scores (α = 0.812), firm reviews of service provision (α = 0.802), reverse logistic operations (α = 0.798), and finally, firm performance had a reliability score of (α = 0.752). Reliability coefficients above 0.7 are considered acceptable and thus in the current study they were all good.

Table 2. Reliability of the attributes of the variables during the Study

Variable	Cronbach's Alpha	Remark
1. Firm reviews of service provision (x_1)	0.802	Reliable
2. Client services quality scores (x_2)	0.812	Reliable
3. Follow ups on service delivered (x_3)	0.956	Reliable
4. Reverse logistic operations (x_4)	0.798	Reliable
5. Speed of service delivery (x_5)	0.888	Reliable
6. Logistic solutions (x_6)	0.774	Reliable
7. Firm Performance	0.752	Reliable

4.3. Firm Performance

The dependent variable for this study was firm performance. The metric score for the firm performance is shown in Table 4. Based on five attributes of performance, the overall mean of 4.34/5.00 indicated a good firm performance. Among the attributes, Growth in market share, Customer satisfaction and Profitability were the greatest contributors to firm performance.

Table 3. Metrics and Score of Attributes for the Firm Performance

Firm performance	Mean (x/5.0)	SD	Rank (%)
Growth in sale volume	4.18	0.28	83.67
Profitability	4.27	0.29	85.34
Growth in market share	4.47	0.32	89.37
Customer satisfaction	4.44	0.33	88.73
Customer loyalty	4.17	0.24	83.30
Total	**4.34**	**0.29**	**86.78**

4.4. Logistic Service Reliability Capability

Metric scores and ranks of the attributes of logistic service reliability capability are shown in Table 4. The overall score of the logistic service reliability capability is high (3.785/5.00) among the sampled firms. Metrics of logistic service reliability that elicited highest score was firm reviews of service provision (Mean = 4.07 ± 0.21), followed by follow ups on service delivered (Mean = 3.94 ± 0.21), reverse logistic operations (Mean = 3.91 ± 0.17). Meanwhile other attributes of logistic service reliability capabilities ranked lower including Logistic solutions (Mean = 3.85 ± 0.17), client services quality scores (Mean = 3.71 ± 0.51). The speed of service delivery was ranked the lowest in score among the sampled firms (Mean = 2.32 ± 0.14).

Table 4. Metrics and Score of Attribute of Logistic Service Reliability Capability

Logistic Service Reliability capability↑	Mean (x/5.0)	SD	Rank (%)
1. Firm reviews of service provision (x_1)	4.07	0.21	81.49
2. Client services quality scores (x_2)	3.71	0.15	74.20
3. Follow ups on service delivered (x_3)	3.94	0.17	78.87
4. Reverse logistic operations (x_4)	3.91	0.17	78.19
5. Speed of service delivery (x_5)	3.23	0.18	64.62
6. Logistic solutions (x_6)	3.85	0.17	77.00
Total	3.785	0.18	75.7

↑Variables are described in Figure 1.

4.5. Test for the Direct effects of Logistic Service Reliability Capability on Firm Performance

The regression test was done for both the controls and the independent variables (direct effect). The hypotheses tested the effect of logistic service reliability capability on performance of manufacturing firms in Kenya. The results of the study variables were presented in Table 5. The results indicated that the predictors explained 64.2% of the variation change on firm performance (R-squared = 0.6421,

Multiple R = 0.8013, *P* < 0.05). The findings also indicated that the coefficient of determination was significant (F = 129.9890, p-value = <.000). Accordingly, Speed of service delivery (β = 0.1918), Logistic solutions (β = 0. 0.1903) and Reverse logistic operations (β = 0.1804) were the most important attributes that significantly correlated with firm performance. While the least attribute that affected firm performance was Client services quality scores (β = 0.0826).

Table 5. Multiple Linear regression statistics showing the relationship between logistic Service Reliability Capability and firm performance in manufacturing firms in Kenya

Regression Statistics					
Multiple R	0.8013				
R Square	0.6421				
Standard Error	0.3377				
Observations	442				
Durbin-Watson	1.896				
ANOVA	*df*	*SS*	*MS*	*F*	*P-value*
Regression	5	74.1407	14.8281	129.9890	0.0000
Residual	226	25.7803	0.1141		
Total	231	99.9210			
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Beta*
Intercept	0.4275	0.0022	23.3280	0.0000	
1. Firm reviews of service provision	0.0828	0.0288	2.8711	0.0045	0.1023
2. Client services quality scores (x2)	0.0750	0.0336	2.2339	0.0265	0.0826
3. Follow ups on service delivered (x3)	0.0880	0.0277	3.1720	0.0017	0.1087
4. Reverse logistic operations (x4)	0.1460	0.0252	5.7886	0.0000	0.1804
5. Speed of service delivery (x5)	0.1553	0.0264	5.8796	0.0000	0.1918
6. Logistic solutions (x6)	0.1660	0.0252	5.7886	0.0000	0.1903
Dependent Variable: Firm performance					
Collinearity statistics					
Tolerance	1.000				
VIF	1.000				

↑Variables are described in Figure 1.

5. Discussion

5.1. Firm Performance

The dependent variable for this study was firm performance. The metric score for the firm performance is shown in Table 4. Based on five attributes of performance, the overall mean of 4.34/5.00 indicated a good firm performance. Among the attributes, Growth in market share, Customer satisfaction and Profitability were the greatest contributors to firm performance.

Logistic Service reliability capability is characterized by the manufacturing firms' ability to create and deploy resources that would satisfy the logistic needs of their customers (Lai, 2004). The study therefore sought to establish the attributes that contribute to the service reliability capacity among manufacturing firms. Metric scores and ranks of the attributes of logistic service reliability capability are shown in Table 4. Metrics of logistic service reliability that elicited highest score was firm reviews of service provision (Mean = 4.07 ± 0.21), followed by follow ups on service delivered (Mean = 3.94 ± 0.21), reverse logistic operations (Mean = 3.91 ± 0.17). Meanwhile other attributes of logistic service reliability capabilities ranked lower including Logistic solutions (Mean = 3.85 ± 0.17), client services quality scores (Mean = 3.71 ± 0.51). The speed of service delivery was ranked the lowest in score among the sampled firms (Mean = 2.32 ± 0.14).

The sampled manufacturing firms in Kenya engage in the identification of problem areas in the firm that have led to client loss due to poor services provision, timely delivery of the products and services. Once the weaknesses are inherent in the firm, the firm takes an affirmative action of identifying and the necessary action is taken with emphasis on meeting client specifications. The reason for this is that clients are the most important factor for the firms. Moreover, the firms search for prior solutions for logistic problems enables the manufacturing firms to identify problem before they actually occur by being pro-active. Besides, reverse logistics operations are developed by the firm. The implication is that the firms are more responsive to customers and are likely to exhibit higher productivity because of meeting customer requirements on time.

Therefore, there is a statistically significant effect of logistic service reliability capability on firm performance. The findings concur with those of Yang *et al.*, (2009) who observed that logistic service reliability capability is a core competence in leading to superior performance and creating customer value. Similarly, both Lu and Yang's (2010) and Yang's (2012) were unequivocal that logistic service reliability capability facilitates the coordination of activities and makes use of resources for managing and integrating processes within supply chains which augment customer service performance. Logistic service reliability capabilities have also been previously equated to cost, quality, flexibility, delivery, and innovation, as drivers of superior firm performance (Wang *et al.*, 2015). The findings are also consistent with that of (Yang *et al.*, 2009) which established that liner manufacturing firms' logistics service reliability capability can significantly lead to superior performance. In this study the attributes of logistic service reliability capability had a positive influence on firm performance were speed of service delivery, logistic solutions and reverse logistic operations which concurs with studies elsewhere (Fernandes *et al.*, 2018). While the least attribute that affected firm performance was service

provision, follow up on service delivered and client services quality scores suggesting that clients were not satisfied with the quality of services provided by these firms.

6. Conclusion

The rapid growth of the manufacturing industry in the whole world has boosted the demand for logistics services in order to cater to the movement of manufactured products from the point of origin to ultimate customer/user. This study tested a null hypothesis that there is no significant empirical relationship between attribute of Logistic service reliability capability and firm performance (H_{01}). The study provided evidence that speed of service delivery, logistic solutions and reverse logistic operations were the most important attribute that significantly explained firm performance. However, firm appeared to concentrate on other attributes such as service provision and follow up on service delivered and client service on quality scores which did not have strong effects on the performance.

7. Suggestions

For a long-term development, manufacturing firms should clearly delineate the most important attribute of Logistic service reliability capability and enhance them, while improving those that are not highly rated in the firm. In highly competitive firm environment where differentiation is the key competitive advantage, strong attribute associated with logistic service reliability capability is required to enhance the overall information flow within the supply chain.

The study findings established that better performing manufacturing firms must employ certain attribute of logistic service reliability capability. Therefore, there is need for manufacturing firms to adopt logistic service reliability capabilities that will positively influence performance. Manufacturing firms should invest only on those service capabilities that can create a competitive differentiation strategy for sustainable performance such as improving the service provision, follow up on service delivered and enhancing client service quality scores in order to satisfy the customer requirements. Moreover, managers must not only develop unique capabilities internally, but they must recognize the combined effects of supply chain practices that can generate a total impact on operational capabilities both at upstream and downstream of the supply chain.

In emphasizing the importance of Resource Based view theory, firms are should evaluate potential factors that can be deployed to confer to firm performance including using available resources to add value to their products. It also encourages firms to produce their products in a way that they cannot be imitated or substituted to increase their performance. Therefore, the contribution of this theory is validated by this study since it encourages the management of manufacturing firms to invest in improving Logistic service reliability capability to develop, nurture and maintain key resources and competencies in order to improve the performance of the firm.

In any research, not all existing constructs from literature could be included in the model. For the purpose of this study, only few significant constructs are selected in regards to the issues highlighted. Thus, future researchers are invited to integrate other relevant and significant constructs in the present model in order to reveal a deeper understanding of determinants affecting the performance of manufacturing firms.

10. Conflict of Interest: The author declares no conflict of interest.

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Effect of Entrepreneur Innovativeness on Financial Inclusion among Women Owned Enterprises in Kenya

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Abstract

The main purpose of the study was to determine the effect of entrepreneur innovativeness on financial inclusion among women operated enterprise. The study used positivism approach in explanatory design. Using a survey of 723 women owned enterprises the study used multiple regression framework to test the hypotheses that entrepreneur innovativeness does not have effect on financial inclusion. The variable proxies were obtained from literature review and indices were constructed to measure them. Findings showed that entrepreneur innovativeness emerged as a strong predictor of financial inclusion of women operated enterprises in rural areas. Specifically, the analysis revealed that female entrepreneurs who are innovative are more likely to be financially included. Based on the findings, adopting modern financial technologies such as Mpesa, agency banking, credit cards are more likely to improve financial inclusions among women owned enterprises. Therefore, the study has attempted to contribute to financial innovation theory building through establishment of relationship innovation and financial inclusion. The main contribution of the study was on establishing the pivotal role of entrepreneur innovation as an enabler of financial inclusion. In addition, policy recommendations and areas for further study by finance scholars have been suggested.

Keywords: Entrepreneur Innovativeness, Financial Inclusion, Women Owned Enterprise

1. Introduction

Financial inclusion can be defined as provision and access of financial services by marginalized group such as rural population and people with disabilities at an affordable cost. According to World Bank report (2014) current reforms and development in most sub-Saharan Africa countries have given much attention in financial inclusion (World Bank, 2014). Globally, financial inclusion is on the rise as an important policy

tool in achieving sustainable Development Goals (SDGs) (Klapper & Hess, 2018). As such, policy makers have heightened interest in in enhancing financial inclusion. The Findex 2017 data shows 1.2 billion adults have obtained an account since 2011 representing about 69% of world adults as financially included (World Bank, 2018). In developing economies, the number of included persons has increased 54 percent to 63 percent.

However, women, particularly in developing economies have continuously registered low financial inclusion rates than men with the most recent statistics showing 9 percentage points gap in favor of men than women (United Nations, 2015). In recent randomized experiments shows female operated enterprises, in comparison with the male counterparts underperformed in terms of turnover, growth or survival prospects as results of lack of operating finances (Berge et al. 2013);. It is noted that financial exclusion of female entrepreneurs has impeded the growth of their enterprises, rendering them non-participants to the modern market economy (Reyes 2013). Further, they are unable to take advantage of business opportunities or counter weather systemic or idiosyncratic shocks to their enterprises (Demirgu¨c̦-Kunt et al. 2008). Research by Mertinez (2013) indicates the use of informal finances were rampant among women.

Thus, emphasizing on financial inclusion among women is paramount in reducing poverty as well as economic growth. Hence, delivering affordable and effective financial services for saving money, borrowing money and making payment among rural women especially for women owning small business is important for in their welfare and reducing poverty ((United Nations, 2015). However, the path to greater women's financial inclusion is dependent upon the creation of a more innovative financial system that addresses the barriers such as lack of collateral, distance to formal financial institutions in accessing affordable financial services (Lauer and Lyman, 2015).

Therefore, to ensure women are finically included it is important to find approaches that can harness the untapped potential of women owned businesses that according to world bank are excluded from the formal financial sector or not fully served by financial products and services (world Bank, 2017). Such approaches can enable segments of the population to develop their own capacities, strengthen their human and physical capital, carry out various income-generating activities and manage the risks associated with their livelihoods. Thus, this study looked at entrepreneur innovative as an approach which can enhance financial inclusion among women entrepreneurs.

Financial innovation has marked impact on the emancipation of women in societies that have tended to be highly patriarchal. The use of new technology and innovative business models to improve the supply and

outreach of financial services, and improved financial literacy and capacity by users appear among the most prominent avenues for improved financial inclusion among women entrepreneurs (UNCTAD, 2012). Innovative business models and services have emerged and expanded addressing traditional barriers to access to financial services, both on a for-profit and non-profit basis, and have created new business opportunities.

Technology has gradually improved the provision of financial services in the past, such as credit cards, debit cards, prepaid cards and ATMs. Exponential progress in information and communications technologies has opened the way for new financial services and business models exhibiting a significant potential for financial inclusion (Peterson, 2018). New mobile banking and payment technologies have given rise to technology-based business models that can broaden access to basic financial services through a greater use of correspondent banks (representatives of a bank carrying out transactions on behalf of banks) using existing networks of agents and institutions, such as post offices, supermarkets, grocery shops, convenience stores, gas stations and lottery outlets (Haider, 2018). They offer only elementary transaction services or a broader range of financial services which has had a substantial impact on financial inclusion.

Despite significant improvements in the financial sector's viability, profitability and competitiveness, there are significant concerns that banks have failed to provide basic banking services to a significant segment of the population, especially from among women entrepreneurs (world Bank, 2016). Thus, governments are coming up with strategies to improve financial inclusion that can lift the standard of living of the poor and the disadvantaged (Commonwealth Secretariat, 2014). While there is a growing body of evidence surrounding the impact of innovation on financial inclusion, there remains much to learn about the ways in which innovation among women entrepreneurs can contribute to women's financial inclusion. This study therefore attempted to found put how various technology innovations in financial service overcome some of these barriers to women's financial inclusion.

2. Literature Review (Hypothesis Development)

According to Lauer and Lyman (2015) financial inclusion can be influenced by financial innovations services such as technological policy. Lauer and Lyman (2018) refer to innovations in the financial services as digital access to utilize modern financial services. An increasing number of financial services such as insurance, credit, remittances, payments and savings can be retrieved and conveyed through digital channels where value is kept and conducted in modern technology with no paperwork involved or

physical presence which can enhance financial inclusion. Online financial services not limited to mobile wallets, mobile banking and mobile money transfers are a key element of automated financial services.

As per Singh (2017) high-tech creations are able to withstand geographical barriers, minimize operational costs that come with financial services and encourage openness in so doing cultivate trust within financial systems. By influencing acquisition and accumulation of financial info, modern technology programs can aid in reducing the imbalances between lenders and borrowers that keep huge parts of the poor demography deprived access to financial systems. They can also re-adjust financial independence and privacy for customers and possibly lessen contingencies involving assimilation and seizure of these funds by others.

Regardless of considerable venture capital within online forums and some renowned successes automating transfers and payments, women are more apt to experience challenges when it comes to accessing and interacting with hi-tech financial services. As creative financial services basically depend on telecommunication networks, access to mobile computerization and the freedom to use it whenever desired, are critical factors in establishing digital financial inclusion.

According to GSMA (2015), women have a 14 percent probability of not owning a mobile phone as compared to men. The gender difference is bigger in specific areas around the globe. An example of South Asia where phone ownership among women is unlikely to an estimate of 38 percent. Rowntree (2019) states that the gender gap is minimal in Sub-Saharan Africa, however, this varies regionally, specifically between East Africa, which records high rates of mobile phone ownership for both genders, and states such as Democratic Republic of Congo and Niger, where the number of women owning mobile phones lies at a percentage of 45 and 33 percentage lower than that of men, respectively. A small number of women owning mobile phones translates to fewer women being able to sign up for online financial accounts in their names, subsequently hindering them from fully acquiring certain modernized financial services, for instance, attaining credit, making or receiving money transfers, paying bills and determining the usage.

The worldwide shift in telecommunications and transformations in modernized payment systems has created new ways of ensuring the needy access to low-cost and dependable financial services and products. The current gender inequalities in financial inclusion can be reduced by these creative forums, in turn altering both the demand and supply variables that are behind women's present day bar from financial systems. The World Bank (2018) attests that Modern technology services can also supersize some of the advantages of financial inclusion for women through conventional channels.

As deduced by the World Bank (2018), throughout the past ten years, financial hi-tech innovations have grown popular in the financial inclusion sector and are accredited among institutions like the World Bank, GSMA, BMGF and CGAP as an inexpensive solution for banking the less fortunate. These mediums have shown favorable odds in withstanding some of the gender-based setbacks with regards to usage and access. New findings also speculate endless optimistic results related to innovation and financial inclusion of women that seem to resolve certain impediments brought by conventional financial inclusion methods. Based on Klapper and Hess (2016), gender-specific hindrances to women's complete financial inclusion still exist bearing an effect on innovation systems thus explaining the relentless gender gaps despite the growing innovation. Financial knowledge among women and access to mobile technology are examples of such impediments. Ashraf (2009) , Jakiela and Ozier (2016) claim that there may be issues regarding confidentiality and clarity causing modernized payments to be less safe and at risk of misappropriation by family members for women. Allen et al. (2016) further explains that there also exists possible restrictions with liquidating, that is, their ability to gain entry to kiosks and old fashioned establishments independently without guidance, more specifically when doing so depends on women's considerable higher levels of movement. Thus, this study hypothesized that:

H_1: High entrepreneur innovations improves financial inclusion among women owned enterprises

3. Methodology

The study employed explanatory research design in positivism approach. Data was collected using seven point Likert scale (1 = strongly disagree to 7 = strongly agree) questionnaires from a randomly selected sample size of 723 women owned enterprises drawn from target population of 8000 women owned enterprise in North Rift Region Economic Bloc Counties. The choice of women owned enterprises was bound by the fact that the respondents hailed from developing economies and culturally women were not allowed to own assets and bank accounts. Consequently, their levels of financial exclusion are higher. Moreover, financial access by SMEs have myriad of hurdles which are due to inability of them to be managed professionally and lack of requisite financial management skills thus they rarely have reliable books of accounts for ease of loan evaluation.

3.1. Reliability and validity of measurement of variables

Financial inclusion scale was adopted form the Word Bank (2012) scale and entrepreneurial innovativeness scale was adopted from Goldsmith *et al.,* (1995). ALL item instrument was developed on a seven-point

likert scale of 1–7 (1 = strongly disagree to 7 = strongly agree).. Cronbach's alpha was used to determine reliability, where Cronbach's coefficient, having a value of more than 0.6 is considered adequate for such explanatory work (Hair *et al.,* 2010). Exploratory factors analysis (EFA) was carried out to establish construct, convergent, discriminant validity. All the reliability index values are greater than 0.7 indicating that the level of internal consistency is acceptable. Evidently, the present study results as outlined in Table 1 below demonstrates that all variables had a Cronbach alpha of more than .70 thus stability and consistency of measurement was upheld. Thus, the results met the required threshold for further analysis as documented in the subsequent sections of this thesis document.

The Exploratory Factor Analysis (EFA) showed that Eigen values were above the accepted value of 1 (Hair et. al. 2014; Yong & Pearce, 2013) and cumulative extracted variance above 50% Thus, all the items were considered appropriate to explain the variable. Moreover, from the Table 1 below, Bartlett's Test of Sphericity produced a significant Chi-Square (χ^2) and Kaiser – Meyer - Olkin measure of sampling adequacy above the acceptable value of .50 (Field, 2005), showing that it was appropriate to subject the data on financial inclusion to factor analysis (Leech *et al.,* 2013).

Table 1. Reliability and validity of measurement of variables

	loadings	KMO	%CV	AVE	CR
financial inclusions(Bartlett's Test of Sphericity=6405.45**, Eigen Values=11.101)		0.83	72.67	0.52	0.77
We save our money in mobile money platform	0.57				
We borrow money using money mobile system, M-Mshwari	0.63				
We transact our bank accounts using mobile phones	0.58				
We pay insurance premium using mobile phones	0.56				
We commonly use Mobile Financial services	0.54				
We pay most of our bills through the Mobile financial services	0.54				
We encourage clients to pay for services via the mobile phone	0.62				
Mobile Financial Inclusion	0.58				
I often save business money in the bank account	0.54				
I frequently receive debtors payments by cheques or bank transfer	0.51				
I frequently pay my suppliers through cheques or bank transfer	0.52				
I often borrow loans from the bank to finance my business	0.59				
I prefer borrowing from informal sources such family and friends than the bank	0.56				
I always take new insurance products that concern my kind of business	0.52				

There is usable access road leading to the nearest formal financial institutions	0.56			
The nearest bank is less than 5KM from home	0.57			
I Live within 1 KM of an ATM that I can easily access my account	0.53			
I know which documents which are required to open a bank account	0.51			
I receive prompt information regarding my transactions	0.60			
Traditional Financial Inclusion	0.58			
Entrepreneur innovations(Bartlett's Test of Sphericity=118.242**, Eigen Values=5.601)	**0.87**	**75.28**	**0.57**	**0.89**
We are eager to adopt new way of doing things in our firm	0.79			
We are always among the first to accept something new in the industry	0.63			
We are among the first to adopt the latest technology as compared to our competitors	0.56			
If we heard new products and services we would adopt them	0.87			
We would adopt an innovation, even if I have not heard of it yet	0.90			
Our firm would always seek out new ways of doing things	0.89			
*We perceive innovative as risky	0.74			

3.2. Analytic Model of analysis

Quantitative techniques for information investigation was utilized with both elucidating and inferential insights (recurrence means and standard deviations) being connected to clarify every target of the study. This study tested the validity of the multiple regression models utilizing ANOVA, F-dissemination and T-test. ANOVA is likewise the information examination strategy that is utilized to decide if there are critical contrasts between at least two gatherings or tests at a chosen likelihood level (Mugenda and Mugenda, 2003). To test the essentialness of regression coefficient, t test was performed. The study received an essentialness level of 0.05. The p esteem acquired was the deciphered dependent on the level of criticalness. The investigation dismissed the invalid theory if the p-esteem was be under 0.05 for the elective speculation. In the event that the p-esteem was more prominent than the level of noteworthiness the study won't dismiss the invalid theory. At long last Multiple Linear Regression model was utilized to build up the hugeness of the straight relationship free factors on the reliant variable. The multiple regression model was be;

$Y = \beta_0 + \beta_1 X_1 + \varepsilon$ …………………………….......Model 1

Where:

Y=Financial inclusion.

X_1= entrepreneur innovation

ε = error term

$β_0$ -constant (Y- intercept)

βi - are the regression coefficients of each Xi (i=1)

4. Results

Descriptive statistics of the response variable under this section is financial inclusion, which was the dependent variable of the study. Findings from Table 2 showed that there was high level of financial inclusion (Mean = 4.57, SD=1.26) and innovation among women entrepreneurs (Mean = 4.90, SD=1.22). From this we can presume that with high innovation there is high financial inclusions, this assumption have been partly proofed by correlation results which showed that There is positive and significant relationship between entrepreneur innovation and financial inclusions (r=.594).

Table 2. Descriptive and Correlation results

	Mean	Std. Deviation	Skewness	1	2	3	4	5	6
1	4.57	1.26	-0.32	1					
2	4.90	1.22	-0.58	.594**	1				
3	4.81	1.29	-0.25	.412**	.437**	1			
4	3.27	1.61	0.16	-0.038	-0.065	-0.025	1		
5	4.62	1.81	-0.35	0.052	0.062	0.003	.117**	1	
6	1.28	0.66	2.67	.083*	0.016	.104**	0.03	-.131**	1

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

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

1 =   financial Inclusion
2 =   entrepreneur innovation
3 =   firm performance
4 =   firm age
5 =   industry type
6 =   firm size

4.1. Test of hypotheses

Regression is one of the pertinent and commonly used statistical method in research. It provides a platform for which causal-effect relationships among variables of interest in the study are examined. Findings showed that the R^2 value = 0.385 which shows that the model parameters account for 38,5% in the change of financial inclusion is explained by entrepreneur innovations . The analysis of variance attributed to the model parameters is significant as indicated by the F-ratio = 78.64 with a p-value = 0.000 which implies that the variation accounted for by the model parameters on financial inclusions is significant.

Hypothesis (H₁) postulated that high entrepreneur innovations improve financial inclusion among women owned enterprises. Findings showed that entrepreneur innovations had positive and significant effect on financial inclusions among women owned enterprises (β = 0.53 (p-value = 0.000 which is less than α = 0.05) implying that the hypothesis was accepted and it was concluded that entrepreneur innovations increase financial inclusion. These findings were supported by Singh (2017) who argued that Technological innovation improves financial inclusions among women by overcoming tradition barriers for women access to financial services (Singh, 2017). Similarly, World Bank report (2018) showed that financial inclusions services can also magnify some of the benefits of financial inclusion for women through traditional platforms. Financial technological innovations have increasingly been championed by many in the field of financial inclusion.

Table 3: Regression Results

	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	0.91	0.23		3.92	0.00
entrepreneur innovations	0.53	0.04	0.51	14.61	0.00
Firm performance	0.18	0.03	0.18	5.21	0.00
firm age	0.00	0.03	-0.01	-0.16	0.87
industry type	0.02	0.02	0.03	0.90	0.37
firm size	0.11	0.06	0.06	1.87	0.06
Model summary statistics					
R	0.621				
R Square	0.385				
Adjusted R Square	0.380				
Std. Error of the Estimate	0.989				
Model Fitness					
F	78.64				
Sig.	.000				

a Dependent Variable: FI

5. Conclusion and Recommendation

The study concludes that financial innovations such agent banking, Mpesa, electronic banking among others enhances financial inclusions among women especially in rural areas. The study recommends that financial institutions should focus more on offering banking services through mobile money platforms. The services should not be limited to linking existing accounts to the mobile money but should also include opening bank accounts using mobile money platform. To achieve this, the study recommends those mobile money service providers, financial institutions and the government work closely in ensuring security of the mobile money platforms through enacting the relevant legislations. The study recommends that the government should develop and support initiatives which enhance responsible financial innovations. This will help break away from the traditional banking system as the only way of accessing financial services

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Push and Pull Factors of Japanese's Cross-Border Bank Lending in Indonesia

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Abstract

The empirical debate of cross-border bank lending from a developed to emerging market economies which focused on the benefit and cost has not stopped. The variables are generally divided into the push and pull factors of cross-border bank lending. This paper analyzes the determinants of cross-border bank lending from Japan to Indonesia. The empirical framework based on the OLS and GMM reveals a high impact of the business cycle in Indonesia and Japan as the most significant variables. According to the push and pull factors models, the pull factors model has higher determinants of the dynamic of cross-border bank lending from Japan to the Indonesian economy.

Keywords: cross-border bank lending; push factors; pull factors; Japan; Indonesia

JEL Classification: C36, E44, F34.

1. Introduction

Globalization in the financial aspects can be witnessed by the behavior of banks from developed countries in their participation in emerging market economies. One of the reasons is that the developed countries have led to more strict competition and growing credit to developing countries (Arestis, Demetriades, Fattouh, & Mouratidis, 2002; Claessens, 2001; Eichengreen, 2001). Besides, bank liberalization in developed countries is supported by the deregulation of the financial market in developing countries at the same time. Banks in emerging market economies started changing in their source of financing from the local to global funding (Müller & Uhde, 2012). Emerging market economies decrease their

control of cross-border bank capital flow by decreasing their financial entry barriers. Thus, banks from developed countries can acquire new investment freedom in order to expand their financial markets (Arestis et al., 2002; Claessens, 2001). A mutualism relationship in financial aspects between developed and emerging countries have been advancing through international bank lending. Home countries can expand their markets, and host countries will earn liquidity from developed countries.

The empirical studies investigate the determinants of international bank lending from developed to emerging economies, have developed in the various instruments. These provided literature that divided the determinants into external (push) and internal (pull) factors (Müller & Uhde, 2012; Pontines & Siregar, 2014). According to the bank lending flow factors, Jeanneau and Micu (2002) explained that shocks in an economy affected the lending flow, while a decrease in home countries' business cycle has an ambiguous effect. When the home countries suffered severe financial stress, they will encourage a bank to decrease their lending to emerging economies in order to recover their economy. In another perspective, a decrease in a home country's economy will also push banks out of border lending to averse the default risk of their portfolio diversification motives.

Since the end of 1983, the Japanese banks have flown their international credit to the Southeast Asian economies, especially Indonesia. The data from Consolidated Banking Statistics of Bank for International Settlement (BIS) the lending from the US banks have more increased in international credit and placed the Japanese banks as the biggest lenders in Southeast Asian economies.
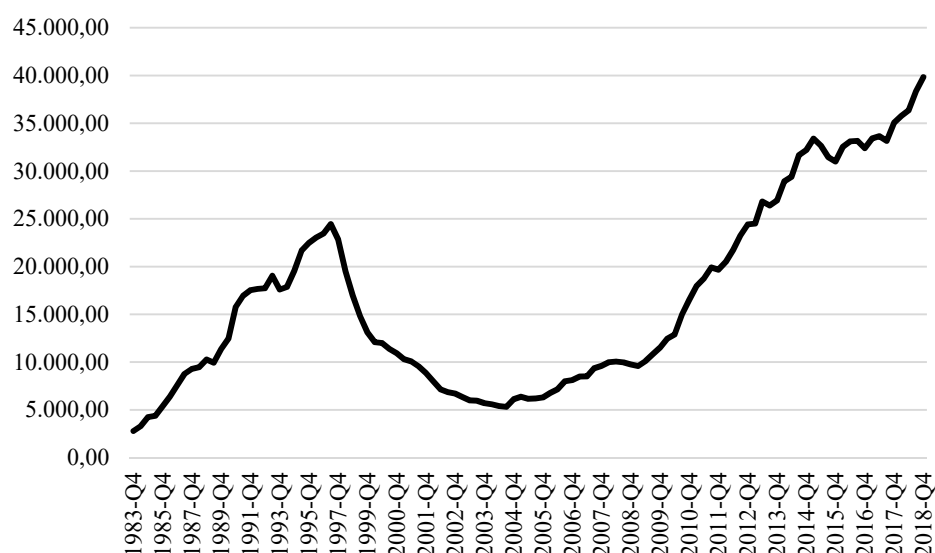

Figure 1. The Movement of Cross-Border Bank Lending from Japan to Indonesia (Source: Consolidated Banking Statistic of BIS, 2019).

Figure 1 shows that the Japanese banks, as the biggest lender countries in the total claims of the international banks in 2018 to Indonesian economies, are increasing. Accurately, Bank for International Settlement (BIS) reported that in the first period, total claims from the Japanese banks to Indonesia around USD 2,794 million. Therefore, the total claims from the US banks are increasing every year. At the end of 2018, the total claim of Japanese bank penetration to the Indonesian economies around USD 39,823.30 million. This financial mutualism relationship between Japan and Indonesia tends to a particular emphasis on the determinants of international bank lending form Japanese banks to Indonesian economies becomes fascinating to explore.

Furthermore, the empirical studies investigate the determinants of international bank lending from developed to emerging economies, have developed in the various instruments. These provided kinds of literature that divided the determinants into external (push) and internal (pull) factors (Müller & Uhde, 2012; Pontines & Siregar, 2014; Siregar & Choy, 2010). The study of Frömmel and Midiliç (2016) result that the fluctuation of the exchange rate is one of the significant channels that pull cross-border bank lending in emerging market economies. This study attempts to analyze the push and pull factors of cross-border bank lending from the Japanese banks to the Indonesian economies. The determinants are divided into push and pull factors, as following the previous literature. Thereby, this study complements and extends the previous empirical study of Pontines and Siregar (2014) by adding the exchange rate variable of the IDR vis-à-vis JPY.

The next part of this study is organized as follows. The second part previews the previous related study of the determinants of cross-border bank lending. The third part explains the research method, including data, measurements, econometric modeling, and strategy, to provide the most appropriate study. The result of this study will be discussed in the fourth part. Moreover, the last but not least is the conclusion that will be summarized in part five.

2. Literature Review

Some of the previous literature focused on the lender and recipient countries' macroeconomic and institution to explain the cross-border bank lending determinants, which divided variables into push and pull factors. Jeanneau and Micu (2002) used panel data and Generalized Least Square (GLS) to analyze the determinants of international bank lending in some largest countries in Asia and Latin America. They divided the independent variables to become a push and pull factor. To prove the future evolution of lending flows, they estimated each of push and pull factors, and international bank lending variable used Granger causality test. In Latin America, the push factor model seems to be the best predictor, and both factors are playing a more significant role in East Asian countries. They found that

GDP as a proxy of the economic cycle in both lender and recipient countries has a positive and significant effect on international bank lending. Furthermore, they provided a positive and significant of the short-term interest rate of lending countries to emerging economies. Particularly, fixed exchange rate regimes encourage more bank capital flow to the emerging market economies.

Papaioannou (2005) used panel data estimation to examine the cross-border bank flow from 19 developed countries, including the United States to 51 emerging market economies, including Indonesia, Malaysia, and the Philippines. The study divided the main result into pooled OLS and alternative estimators. Mainly reported, the gravity model shows the highest significant effect to the international bank lending. Specifically, the real per capita GDP, both home and host countries, has a positive and significant effect on cross-border bank lending activities. Inversely, the home countries exchange rate has a negative and significant effect. However, the inflation rate of host countries showed an insignificant variable.

Cetorelli and Goldberg (2011) adopted the model from Khwaja and Mian (2008), who used a different-indifferent approach. They estimated cross-border lending data from 17 developed lenders to 94 emerging market borrowers across Asia, Latin America, and Europe. They divided the pre-crisis period 2006:Q2 to 2007:Q2, 2007:Q3 to 2008:Q2 as the intermediate period, and the post-crisis period from 2008:Q3 to 2009:Q2. They found that shocks were transmitted through three balance bank channels. A withdrawing credit by foreign banks affected the local lending growth to emerging market borrowers. Foreign-owned and domestically-owned banks actively transmitted their shock by capital outflow.

Silalahi et al. (2012) decided to choose Arrelano-Bond GMM over two other estimation techniques are the pooled OLS and fixed the effect. They argued that the estimation of autoregressive of pooled OLS has an upward bias, and the fixed effect has a downward bias. They employed cross-border data claims from developed countries, namely Japan, the United States, the United Kingdom, and Germany, to Indonesia in all total sectors. The result showed that home countries' growth rate has a negative and significant effect, and host country growth rate showed inversely sign. However, interest rates, both in-home and host countries, showed insignificant in the affecting of international bank lending flow to Indonesia. Correctly, they also used the variable of interaction between home countries' growth rate and exposure to examine the global shock transmission. The variable shows a positive and significant effect on the volatility of their cross-border bank lending in Indonesia.

Siregar and Choy (2010) used panel data OLS, especially the random effect model based on their estimated equation result. They employed seven OECD countries as the lender and nine East Asian countries, including Indonesia, Malaysia, Philippines, Singapore, and Thailand. The result of

estimation based on the three gravity models that they used to analyze the cross-border bank lending determinants. The coefficient of financial centers, such as the ASEAN integration area and dummy variables for colonial history, has a positive and significant effect. Mainly, the case for bilateral trade produces a positive and significant coefficient. Finally, they conclude that a financial risk in East Asian during the 1997 crisis associated with the higher bank lending attraction from OECD countries with a negative sign.

De Haas and Van Horen (2013) used the analysis of panel data OLS to estimate the international bank lending that focused on the crisis period. They used two pairs of bank-country and bank-firm levels of data. They also divided the pre-crisis around July 2006 until June 2007 and the post-Lehman period around October 2008 until September 2009. They generally estimated four models, such as sudden stop, volume, number, and exit. Notably, their result showed less relationship between the international bank lending and the changes in trade and changes in FDI banks as control variables. This insignificant result is showed for the models of a sudden stop, volume, and number.

Pontines and Siregar (2014) built a dynamic macro-panel model and employed bank lending data from Japan, the UK, and the US to Indonesia, Korea, Malaysia, Philippines, Singapore, and Thailand. They estimated the model with the system-GMM due to the endogeneity problem would intend to be controlled. Plugging of the autoregressive cross-border lending variable presented the system-GMM as the appropriate choice of estimation over OLS and fixed effect. The result shows that the home countries' growth rate and the indicator of global transmission shock have the most significant impact on the lending outflow from the six Asian countries back to the home countries.

3. Research Method

3.1. Data Source and Measurement

The data used for the following analysis is quarterly data from 1986:I to 2017:I. The original dataset primarily obtained from the official site of Bank for International Settlement (BIS), International Monetary Fund (IMF), the Organization for Economic Co-operation and Development (OECD), and the Fred Economic Data of Federal Reserve Bank of St. Louis. The dependent variable is the international bank lending from Japan to Indonesia. The data are obtained from the Consolidated Banking Statistics of the official site of Bank for International Settlement (BIS).

<div align="center">**Table 1.** Summary of Data Sources and Measurement</div>

Variable	Data	Description	Source	Expectation
$LogCBL_{i,j,t}$	International Bank lending	Total Claim of lending from the Japanese Banks to Indonesia	Consolidated Banking Statistics - BIS	
Push Factors				
$logGR_{i,t}$	Real GDP	Macroeconomic indicator to capture the business cycle in Japan	World Bank	+/-
$IR_{i,t}$	US 3-months T-Bill rate	Indicator of the rate of return in Japan	International Financial Statistic of the International Monetary Fund (IMF)	-
$logGR_{i,t}.EX_{i,j,t}$	Interaction between the US GDP growth and banking exposure in ASEAN-5	Indicator of the transmission effect of the global shock through the cross-border bank lending from Japan to Indonesia	BIS and the World Bank	+/-
Pull Factors				
$logGR_{j,t}$	Real GDP	Macroeconomic indicator to capture the business cycle in Indonesia	World Bank	+
$IR_{j,t}$	The interest rate of the money market	Indicator of the rate of return in Indonesia	International Financial Statistic of the International Monetary Fund (IMF)	+
$logER_{i,j,t}$	the ASEAN-5 currencies *vis-á-vis* the US dollar	Indicator of the type of the Japanese banks' reaction to response the liability shock in the home country	International Financial Statistic of the International Monetary Fund (IMF)	-

The independent variables are used to estimate the cross-border bank lending movement. Thus study divides the independent variables into two groups: push and pull factors. The push factors are a business cycle in Japan, the interest rate in Japan, and the variable from the GDP growth of Japan and lending exposure of the Japanese banks to Indonesian economies (shock variable). The pull factor variables are a business cycle in Indonesia, the interest rate in Indonesia, and the exchange rate of UDR vis-à-vis JPY. The real gross domestic product (GDP) variables are measured in the current US dollar, which Japan as a home country and Indonesia as a host country which obtained from the official site of the World Bank. Since the data provided in yearly frequency, we employed the linear interpolation method. This data used to explain the business growth cycle in both Japan and Indonesia.

The interest rate of Japan is obtained from the official site of the International Monetary Fund (IMF). This data is used to interpret the home country's interest rate. Additionally, the interest rate in Indonesia, which represented by the interest rate of the money market in percent per annum, is also obtained from the official site of the International Financial Statistic of the International Monetary Fund (IMF). The exchange rate of the IDR vis-à-vis JPY is also obtained from the official site of the International Monetary Fund (IMF). Additionally, in order to analyze the transmission effect of the shock in the economy of Japan through the cross-border bank lending from Japan to Indonesia, we extracted the variable from the GDP growth of Japan and lending exposure of the Japanese banks to Indonesian economies.

3.2. Empirical Model

The main purpose of this study is to analyze the primary determinants of cross-border bank lending. Accordingly, this study adopted the previous model from the study of Pontines and Siregar (2014). We modified the model by including exchange rate volatility from the study of Frömmel and Midiliç (2016). The original model of this study is transformed into econometrics model as outlined by equation (1):

$$LogCBL_{i,j,t} = \alpha_0 + \alpha_1 logCBL_{i,j,t-1} + \beta_1 logGR_{i,t} + \beta_2 logGR_{j,t} + \beta_3 IR_{i,t} + \beta_4 IR_{j,t} + \beta_5 ER_{i,j,t} + \beta_6 logGR_{i,t}.EX_{i,j,t} + \varepsilon_t, \tag{1}$$

Where i denotes the home country or lender of international bank lending, which is Japan, while j denotes the host country or recipient of international bank lending from Japan, namely Indonesia. The $logCBL_{i,j,t}$ represents the cross-border bank lending from Japan to Indonesia in logarithmic term; $logCBL_{i,j,t-1}$ represents the lending in the previous period; $logGR_{i,t}$ represents the business cycle in Japan; $logGR_{j,t}$ represents the business cycle in Indonesia; $IR_{i,t}$ is nominal the interest rate Japan; $IR_{j,t}$ is nominal the interest rate in Indonesia; $ER_{i,j,t}$ represents the exchange rate of the IDR *vis-á-vis* JPY; $GR_{i,t}EX_{i,j,t}$ represents the indicator of the Japanese bank response to the shock; and ε_t is the disturbance term.

Consider to right-hand side variables in eq. (1), the main determinants of cross-border bank lending are divided by home or push and host or pull factors, as figured out by some previous literature of Jeanneau and Micu (2002) and Müller and Uhde (2012). We expect the positive coefficient of the real GDP of host countries as the higher returns will be earned from the higher economic cycle should attract more cross-border lending domestically. Whereas, there are two expected coefficients of the real GDP

of Japan since the lower economic condition in the home country will encourage the bank lender to seek another market, or the bank lender may catch a worsen signal of the capital position of foreign banks the should discourage their lending overseas.

To capture the rate of return in both home and host countries, we expect the negative coefficient of interest rate variable in the home country and a positive coefficient of interest rate in host countries. These expectations reflect that higher interest rates in the home country; banks will decrease their cross-border lending. Inversely, banks will increase more their cross-border lending when they are catching an increase in the host countries' interest rate. Besides, the exchange rate volatility of currency pairs is expected to be negative since the empirical evidence provided by Jeanneau and Micu (2002). Finally, the indicator of the home country's bank response to the global shock is expected to be negative, as the unstable economy, banks will more carefully lend their cross-border lending.

3.3. Analysis Method

We mainly employed Ordinary Least Square (OLS) to estimate the determinants of the Japanese bank's cross-border bank lending, as presented in equation (1). In order to decrease the endogeneity effect of the model, this study also employed the generalized method of moments (GMM) and instrumented all potentially endogenous variables with their own suitably lags. There are two types of GMM estimation, difference-GMM, and system-GMM. The difference GMM as the previous literature has suggested an indication of a transformation effect from the specification Arellano and Bond (1991). This estimator is widely used for modeling using a country-pairs variable. The estimator is based on the first difference variables, in order to eliminate the country-pair specific effect. However, the difference-GMM produced a poorly estimator in the case of small samples. Moreover, under such conditions, lag levels seem to have weak instruments for the different variables and prone to go through from finite sample bias.

For the GMM analysis, we employed the system-GMM, a related dynamic panel estimator developed in 1998 by Blundell and Bond (1998), according to the assumption that change in the using instrumental variables is uncorrelated with the fixed effect. However, the system-GMM is used to earn potentially considerable improvements over the difference-GMM in the case of small samples. System-GMM is composed by the first difference instrument on lag levels, and of levels instrumented on lag first differences. Specifically, the long-run deviation is not systematically related to the fixed effect. The reason for employing the system-GMM is more robust to measure the error cross-section estimation and remains consistent if the endogeneity problem detected.

4. Result and Discussion

4.1. Statistic Descriptive Analysis

The analysis begins from the correlation matrix analysis of each variable based on the data estimated. The result of the correlation matrix among variables is presented in table 2. The result explains that interest rate in Japan, Indonesia, and the exchange rate of IDR vis-à-vis JPY have negative correlation on the cross-border bank lending from Japan to Indonesia. However, the business cycle in Japan, Indonesia, and the shock in Japan have a positive correlation.

Table 2. Correlation Matrix

	$LogCBL_{i,j,t}$	$logGR_{i,t}$	$logGR_{j,t}$	$IR_{i,t}$	$IR_{j,t}$	$ER_{i,j,t}$	$logGR_{i,t}.EX_{i,j,t}$
$LogCBL_{i,j,t}$	1	0.349046	0.3486176	-0.071206	-0.006890	-0.119136	0.241227
$logGR_{i,t}$	0.349046	1	0.750550	-0.719377	-0.553277	-0.835913	-0.319235
$logGR_{j,t}$	0.348617	0.750550	1	-0.738034	-0.832027	-0.721739	-0.711414
$IR_{i,t}$	-0.071206	-0.719377	-0.738034	1	0.593354	0.887006	0.734773
$IR_{j,t}$	-0.006890	-0.553277	-0.832027	0.593354	1	0.514914	0.725571
$ER_{i,j,t}$	-0.119136	-0.835913	-0.721739	0.887006	0.514914	1	0.625946
$logGR_{i,t}.EX_{i,j,t}$	0.241227	-0.319235	-0.71141	0.734773	0.725571	0.625946	1

(Source: Author's Computation Using E-views 10).

The business cycle in Japan has a negative correlation with all of the other independent variables except the variable of the business cycle in Indonesia. According to column 3 of Table 2, the interest rate in Japan, Indonesia, the exchange rate of the IDR vis-à-vis JPY, and the shock variable hurt the business cycle in Indonesia. However, the interest rate in Japan has a positive correlation with interest rate in Indonesia, the exchange rate, and the shock variable as well as the variable of interest rate in Indonesia, which has a positive correlation with the exchange rate and the shock variable. Finally, the shock variable has a positive impact on the exchange rate of the IDR vis-à-vis JPY.

The summary statistic of data used to estimate equation (1) is presented in Table 3. Generally, we employed the same number of observations for every seven variables. However, other two variables, such as the lag of cross-border bank lending in the previous period is generated from the dependent variable, and the indicator of the Japanese banks' response to the home country's shock is generated by timing between the business cycle in Japan and the exposure of lending from Japan to Indonesia.

<div align="center">**Table 3.** Summary Statistic of Variable</div>

	$LogCBL_{i,j,t}$	$logGR_{i,t}$	$logGR_{j,t}$	$IR_{i,t}$	$IR_{j,t}$	$ER_{i,j,t}$	$logGR_{i,t}.EX_{i,j,t}$
Mean	9.532919	29.09882	26.29643	2.948560	17.97141	0.032429	24.40957
Median	9.570119	29.15231	26.13342	1.940333	17.97667	0.013187	23.90356
Maximum	10.41653	29.48056	27.61332	7.690000	35.19667	0.159644	26.36061
Minimum	8.578665	28.25121	25.04436	0.994000	11.26333	0.007777	22.85691
Std. Dev.	0.525957	0.242694	0.833517	1.896293	5.273539	0.031347	1.194419
Skewness	-0.040242	-1.268185	0.276151	1.043979	0.979079	1.413857	0.343807
Kurtosis	1.872762	4.648729	1.751220	2.721774	4.032713	4.844436	1.551604
Jarque-Bera	6.651781	47.66397	9.555506	23.10928	25.11701	59.36411	13.38887
Probability	0.035941	0.000000	0.008415	0.000010	0.000004	0.000000	0.001238
Sum	1191.615	3637.353	3234.461	368.5700	2210.483	4.053623	3051.197
Sum Sq. Dev.	34.30226	7.303664	84.75955	445.8947	3392.846	0.121846	176.9031
Observations	125	125	123	125	123	125	125

(Source: Author's Computation Using E-views 10)

According to table 3 above, the data spread among variables are quite high. Since the minimum value of the interest rate in Japan is 0.007777, the minimum value of the business cycle in Indonesia is very far from the value of interest rate in Japan. The mean of each variable is quite nearby from each other, except the value of the exchange rate. Table 1 above also reports the standard deviation for each variable that has high spread, especially between the exchange rate and interest rate of Indonesia. Thus, we decided to apply the logarithmic terms for the high spread variables such as cross-border bank lending, business cycle in Japan and Indonesia, and exchange rate, to decrease the enormous difference spread among variables estimated.

4.2. Empirical Analysis and Discussion

Determinants of the cross-border bank lending from Japan as a home country to Indonesia as a host country are mainly estimated through ordinary least square (OLS) and Generalized Method of Moment (GMM) to make the analysis more robust. We compared the result of these two models. The result of the estimation of equation (1) is presented in table 4.

4.2.1. The Push and Pull Factors of Japan-Indonesia Cross-Border Bank Lending

Table 4 presents the estimation result of OLS, which divided into three columns, push factors, pull factors, and the simultaneous estimation of all variables. Push factors are the variables that come from the home county of cross-border bank lending. The home country has variables that push the banks to expand their lending to the cross-border. Pull factors are factors that come from the borrower's country (Indonesia) that pull the lending from Japanese banks to Indonesia.

<div align="center">**Table 4.** The Estimation Result of OLS</div>

Variable	Push Factors Model	Pull Factors Model	Push and Pull Factors
C	-20.89578***	-18.03456***	30.77117***
	(7.625827)	(2.678220)	(8.758625)
$logGR_{i,t}$	0.896310***		-2.490058***
	(0.276685)		(0.374456)
$logGR_{j,t}$		0.967787***	1.259241***
		(0.094124)	(0.073483)
$IR_{i,t}$	-0.028840		-0.111959***
	(0.049783)		(0.029789)
$IR_{j,t}$		0.103115***	0.028012***
		(0.012012)	(0.009962)
$ER_{i,j,t}$		7.645147***	-8.096434***
		(1.614163)	(2.664936)
$logGR_{i,t}.EX_{i,j,t}$	0.181575***		0.744198***
	(0.057971)		(0.065867)
F-statistic	12.70636***	36.63074***	74.80766***
Adjusted-R²	0.220709	0.466998	0.784012

Figures reported in the parenthesis ( ) are the standard error. An asterisk ***, **, and * indicate rejection of the null hypothesis at 1, 5, and 10 percent of significance level, respectively (Source: Author's Computation Using E-views 10).

The result of the OLS estimation shows that the coefficient of real GDP in Japan ($logGR_{i,t}$) has a significant effect on the dynamic of cross-border bank lending for the push factors model and the simultaneous model. Specifically, the coefficient of $logGR_{i,t}$ is 0.896310, which indicates an increase in the business cycle in Japan as much as USD 1 Million affected 89 percent increase in the Japanese banks flows to Indonesia. The positive coefficient of the $logGR_{i,t}$ implies that the Japanese banks tend to focus their lending activities at their home when the decline in the Japan economic cycle happened. This result confirms the study of Müller and Uhde (2012) and Papaioannou (2005) that a decline in the home country's business cycle is responded by a decline in the international bank lending to host countries.

The interest rate in Japan does not statistically significant push cross-border bank lending from Japan to Indonesia. However, from the perspective of the push factors, the shock in the home country's economy is transmitted through the lending from cross-border banks (Aiyar, 2011; De Haas & Van Horen, 2013; Pontines & Siregar, 2014). In order to test the impact of a shock in the Japanese economy on the ebb and flow to Indonesia, this study measures an interaction term between the Japanese business cycle and the exposure of the Japanese bank lending to Indonesia ($logGR_{i,t}.EX_{i,j,t}$). The indicator of the Japanese bank response to the shock has a significant and positive effect at 1 percent. This variable captures the reaction of Japanese banks to shock or crisis that happened in their home country. The result implies that the Japanese banks reduced their international lending through

increased exposure of the banking system in Indonesia as a reaction to the Japanese's economic decline. It presents a shock transmission effect of cross-border bank lending from Japan to Indonesia.

Furthermore, all of the pull factors have a statistically significant effect on the dynamic of the cross-border bank lending from Japan to Indonesia at a 1 percent significant level. It has a consistent result in the simultaneous estimation of F-statistic. Accordingly, the result of partial estimation has positive coefficients for all pull factors except the exchange rate on the simultaneous model. It means that an increase in the business cycle and interest rate in Indonesia pull the bank lending from Japan to Indonesia.

4.2.2. Robustness Check

Generally, the result of pooled OLS shows a vast lack of significance variable estimates due to the endogeneity problem of these estimates. Thus, we suitably propose a generalized method of moments (GMM) to presents a robustness check. The result of the system-GMM shows a more improved significance of the coefficient estimates since the problem of endogeneity is solved. The result of the system-GMM estimator is presented in table 5. The result is also based on the estimation of equation (1).

Table 5. The Estimation Result of GMM

Variable	Push Factors Model	Pull Factors Model	Push and Pull Factors
C	-22.28429***	-25.46271***	47.86641***
	(5.846088)	(4.817949)	(15.66071)
$logGR_{i,t}$	0.918965***		-3.435269***
	(0.224535)		(0.691374)
$logGR_{j,t}$		1.231135***	1.544828***
		(0.170078)	(0.167585)
$IR_{i,t}$	-0.021453		-0.103544***
	(0.046903)		(0.033134)
$IR_{j,t}$		0.123697***	0.031841*
		(0.018245)	(0.016800)
$ER_{i,j,t}$		11.45196***	-12.09691**
		(3.454259)	(5.895678)
$logGR_{i,t}.EX_{i,j,t}$	0.210615***		0.863185***
	(0.069064)		(0.117452)
Adjusted-R^2	0.212557	0.461919	0.746659
J-Statistic	10.28142***	15.64514***	9.663200***

Figures reported in the parenthesis ( ) are the standard error. An asterisk ***, **, and * indicate rejection of the null hypothesis at 1, 5, and 10 percent of significance level, respectively (Source: Author's Computation Using E-views 10).

Table 5 presents the estimation result based on equation (1), which tests the effect of business cycle in Japan, the interest rate in Japan, and the Japanese shock to represent the effect of push factor of cross border bank lending from Japan. Otherwise, it also presents the effect of the business cycle in Indonesia, the interest rate in Indonesia, and the exchange rate of IDR vis-à-vis JPY in order to show the effect of pull factors of cross-border bank lending from Japan to Indonesia. The business cycle in Japan has a positive and significant effect on the volatility of cross-border bank lending. The robustness check uses GMM estimation has consistent results according to the OLS estimation, both push factors, pull factors, and combination of push and pull factors.

The variable of the exchange rate of IDR vis-à-vis JPY of the pull factors model confirms the result of Correa et al. (2018) and Frömmel and Midiliç (2016), who disclosed a positively significant effect to the cross border bank lending in emerging market countries. However, it diverges to the result of Jeanneau and Micu (2002), who discovered a negative and significant for all models estimated. The bilateral exchange rate is an indicator of financial stability and exchange rate risk. Since we employed the value of the spot rate of the currency pairs, the higher the value of the exchange rate means, the more depreciate of the host country's currency. It becomes a risk factor that the global bank decrease their lending to emerging market economies.

5. Conclusion and Recommendation

This study analyzes the determinants of cross-border bank lending from Japanese banks to Indonesian economies. According to the estimation result, the conclusions as follows: first, the business cycle in Indonesia pulled the cross-border bank lending from Japan. Second, the interest rate in Japan has low push factors affect on the cross-border bank lending to Indonesia. Third, the currency depreciation positively affects the flow of global lending based on the pull factor, and the transmission shock signal as the interaction of home country's growth rate and its exposure in the individual host countries as a push factor of international bank lending was indicated in transmitting the global shock to the host countries. According to the conclusion of the estimation result, it can suggest for strengthening the international bank regulation for the global bank intermediation in Indonesia. Moreover, the bank regulation in Indonesia should support the subsidiary of foreign banks to reinforce the financial system with not eliminate the possibility of domestic banks contributing to global financial intermediation. Indonesia should also actively participate in international bank supervision.

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