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THE ROLE OF INSTITUTIONS IN DETERMINING FDI FLOWS INTO THE SADC REGION

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Abstract

The aim of this study is to examine the role of institutions in determining Foreign Direct Investment (FDI) flows into the Southern African Development Community (SADC) region. Given the financing gap within SADC and the role of FDI in covering the gap, there is a need for the region to attract more FDI. Traditionally, the most popular instrument for attracting FDI is through fiscal incentives. However, over the years this has failed to attract or deliver the expected levels of FDI inflows into the SADC region. The study applies a panel modelling approach (Fixed Effects Model) for all the SADC countries using annual data from 1996 to 2016. However, to deal with the problem of endogeneity, the study further applies the 2 Stage Least Squares (2SLS) methodology. For robustness check, Dynamic General Method of Moments Technique (GMM) is applied. The results of the model indicated that institutions are important in determining the flow of FDI into the SADC region. However, where the host countries have got natural strategic resources, the role of institutions is overshadowed. The market size was also found to be insignificant. Furthermore, the institutional variables affect FDI inflows differently and one of the major findings is that democratic accountability does not matter in influencing the flow of FDI into the SADC region.

Keywords: Foreign Direct Investment, Institutions, SADC, MNCs

JEL Codes: E, E02.

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1. Introduction

The past two decades have seen a dramatic increase in FDI flows across countries (Papaionnou, 2008). However, despite this financial globalisation, most Sub-Saharan African countries still face capital challenges to finance domestic investment. Numerous popular studies such as Kapingura *et al.,* (2018), Alfaro *et al.,* (2008) and Akhtaruzzaman *et al.,* (2018) have been done in an attempt to understand why certain countries attract more FDI than others. Many of these papers attempted to solve the famous "Lucas paradox[1]" as to why capital does not flow from rich to poor countries according to the standard neo-classical growth theory. The main objective of this paper is to examine the role of institutions in determining FDI inflows into the Southern African Development Community (SADC) region.

To the best of my knowledge there are few studies which examined the role of institutions in determining FDI flows into the SADC countries. These few studies have not specifically looked at the role of institutions in determining FDI flows into the SADC region for example Kapingura *et al.,* (2016) focused on the different types of capital flows while Muradzikwa (2002) did not apply any econometric techniques to his studies. Furthermore, existing data and indices for example the International Country Risk Guidelines do not cover all the SADC countries.

Most of the available studies on the role of institutions in determining FDI flows have been limited to specific institutional variables without examining the impact of most of the institutional variables. For example Addison and Heshmati (2004) only considered democracy, Asiedu (2002) examined the effect of political risk only for developed and Sub-Saharan African countries, Asiedu and Lien (2011) for a study of 112 developing countries only considered democracy as an institutional variable and Jensen (2008) examined political risk and democracy and their impact on FDI flows.

In this paper, the annual average of 12 components under political risk for all the SADC countries is calculated. In previous studies, countries like Mauritius, Swaziland and the Seychelles were not covered due to the fact that there were no existing indices calculated until this study. It is in this regard that the main contribution of this chapter is the development of a model which measures and assesses the role of institutions in determining FDI inflows for all the 15 SADC countries utilising 12 institutional indicators.

Investment theory dictates that firms invest expecting to get a return on investment and minimise the risk of doing business. However, the business environment in this case is the source of risk which can play a significant role in investment decisions by foreign firms. Included in the business environment are the institutions of the host country. Thus it is imperative to understand the role of the host countries' institutions in attracting or repelling FDI flows.

[1] The Lucas Paradox comes from the neo-classical growth model which assumes the same technology across all countries. The model assumes that capital should flow from countries endowed with more capital to those with less due to the law of diminishing returns leading to a convergence of returns in the long run. In reality however, this is not the case hence the Lucas Paradox.

Research on FDI has over the years tried to explain decisions relating to location, timing and the mode of entry of FDI. History shows that researchers mainly relied on economic perspectives in trying to explain FDI decisions (Francis *et al.,* 2009). It should however be appreciated that in making FDI decisions, firms face a number of challenges and uncertainties which go beyond the known traditional economic factors such as the availability of markets, infrastructure and labour among other factors. In recent years, researchers have begun to acknowledge and examine the role of institutions in determining the flow of FDI to the host countries (Francis *et al.*, 2009).

Various studies have shown that foreign investment strategies of MNCs take into consideration the quality of institutions in making investment decisions especially the mode entry choice (Bevan *et al.*, 2004). However, the relationship between the role of institutions and impact of these institutions on FDI is still under researched and greatly misunderstood.
Previous studies used the general panel framework methodology and models such as the pooled effect, random effect and the fixed effects models which although they take control of the heterogeneity which exist across countries, they do not cover the problem of endogeneity. Furthermore, the models used in these studies are static. This study applies a dynamic panel set up methodology which takes into account both the problems of endogeneity and heterogeneity. The next section discusses the theoretical framework and literature review. This is then followed by the methodology, a discussion of empirical results, conclusion and policy recommendations.

2. Theoretical Framework

A number of theoretical frameworks have been proposed in an attempt to explain the determinants of foreign capital flows. These theories include the Lucas Paradox (1990) and the Montel and Fernandez –Aris model (1996). This study adopts the Lucas Paradox and it is briefly discussed in the following subsection.

2.1 The Lucas Paradox

According to the standard neo-classical theory, capital should ideally flow from rich to poor countries. This is assuming that the countries produce the same goods, use similar technology and there are constant returns to scale of the use of labour and capital as factors of production. The other important assumption is that there should be perfect capital mobility in which all investments would flow from the rich countries to the poor countries and this would continue until all the returns to all investments are equal in all the countries. The expected relationship between output and the factors of production labour (L) and capital (K) in the Cobb- Douglass production function is represented in equation 2.1.

$$Y_t = A_t F(K_t L_t) = A_t K_t^{\alpha} L_t^{1-\alpha} \quad \ldots\ldots(2.1)$$

Where: $F_k(.) > 0$, $F_L(.) > 0$; $F_{kk}(.) < 0$, $F_{LL}(.) < 0$ ……(2.2)

Y is the production output and A is the Total Factor Productivity (TFP) which reflects the level of technology in this case the stock of human capital (Lucas, 1990). Due to the fact that all countries share the same technology and there is perfect competition it is implied that there should be convergence of the returns to capital. Furthermore, due to the law of diminishing returns, capital is expected to flow from countries which are highly endowed to those which are less endowed in terms of capital. This therefore means that for countries i and j, the following is expected:

$$A_t f'(k_{it}) = r_t = A_t f'(k_{jt}) \quad (2.3)$$

f (.) represents the net of depreciation production function in per capita terms whilst k represents per capita capital and r is the implied return. In practice, the predicted relationship in equation 3.2 does not hold. There is less capital which flows to capital scarce countries and there is no convergence in terms of interest rates. This is then what is called the "Lucas Paradox."

Lucas (1990) argued that this is mainly due to main factors which are capital market imperfections and economic fundamentals across countries. These economic fundamentals also implies that there are differences in the countries' technological factors (At), hence there will be no equality between any two countries. If the assumption of common technology is relaxed and country i is more advanced than country j, Lucas (1990) argued that Ait will have higher returns compared to Ajt. This therefore explains why country i will attract more capital than country j. Considering the differences in the level of technology between the countries, the return to capital can therefore be illustrated as follows:

$$A_i t f'(k_{it}) > A_j t f'(k_{jt}) \quad (2.4)$$

Lucas (1990) specifies that Ait and Ajt are a representation of other technological factors such as institutions as well as the macro-economic conditions amongst others. This therefore means that capital will flow to countries with higher returns which are generated by the technological factors (including institutions). It is under this framework that the role of institutions in determining FDI flows into the SADC region can be examined. The theoretical and empirical literature regarding the role of institutions in determining FDI flows into the SADC region is an important policy question. The next subsection begins with how the role of institutions and transaction costs impact on investment and economic growth.

3. Literature Review

The last 20 to 25 years has witnessed an overflow of FDI in developing countries. The factors which attract FDI vary according to the region and time frame. This subsection will give a snapshot of the theoretical and empirical findings regarding the role of institutions in attracting or repelling FDI Flows. Since 1960 there have been several contributions to the literature on the role of institutions and transaction costs and how they impact on investment and economic growth. These include studies by (North, 1981, 1991; Knack and Keefer, 1995; Hall and Jones, 1999; Acemoglu et al., 2001; Rodrick 2000). Korutaro et al., (2013) who argued that institutions and property rights influence the size of investment as well as the efficiency at which inputs are allocated. Generally, the studies to a greater extent agree that institutions play a significant role in understanding cross country differences in terms of economic performance and FDI flows.

The role of institutions is to reduce uncertainty through the establishment of a structure for human interaction thus a framework for economic interaction. Institutions combined with technology used, can determine the transactions and transformation costs that make up total costs (Korutaro, 2010). This therefore means profitability and reason for engaging in economic activities is determined by institutions hence their influence on FDI flows.

There is valuable ground to believe that a good institutional environment where there is efficiency, low levels of corruption as well as property rights and mechanisms for contract enforcement should attract more FDI inflows into the host country (Ali and MacDonald, 2010). In a formal set up, institutions are required to enforce agreements and reduce uncertainties and thus in the process promote FDI into the host country.

The preceding paragraph further demonstrates that in order to attract FDI there is a need to have a strong institutional framework dedicated to assist investors (Singh et al, 2012). This is more important for less developed countries which are still experiencing high levels of corruption and a dominance of informal institutions over formal institutions (Ferreira, 2016).

Many researchers such as Lucas (1990), Akhtaruzzaman et al., (2018), Alfaro et al., (2008) and Papaioannou (2008) have concluded that the quality of institutions is the reason why capital does not flow from rich countries to poor countries. Thus, the quality of institutions in the host country is a key determinant of FDI flows because quality institutions are crucial for macro-economic stability and improve the business environment for private players.

Seyoum (2009) argued that countries with weak institutions are most likely to find it difficult to attract inward investment flows unless they are endowed with scarce natural resources and also offer large markets. Thus, a country with large mineral deposits is claimed to often have positive effects which may outweigh the impact of negative institutional factors. That being said, the composition of FDI flows has been shifting away from resource based countries towards the industrial and services oriented economies.

Political instability can be linked to lower property rights security. This is mainly based on the assumption that political leaders who will be facing the loss of power are more incentivised to expropriate property rights. However, there are numerous examples which show that even stable political regimes have systematically expropriated property rights at the same time successfully squashing any coups or revolutions against them.

Ferreira (2016) further argued that corruption reduces the attractiveness of a host country to foreign investors. This is mainly because corruption increases the dangers and risks of operating in such a country. Furthermore, corruption increases uncertainty hence the cost of doing business. Corruption lead to lower investor confidence and in the process discourages future foreign investments. Reducing corruption leads to improved quality institutions which indirectly will promote good governance and hence the promotion of FDI inflows into the host country (Busse and Hefeker, 2007).

That being said, there are still disagreements on the impact of corruption on making investment decisions. Cross country empirical literature has not tested the empirical relationship between corruption and government efficiency and hence its influence on attracting or repelling inward investment. These different views clearly show that there is still a gap to conclude decisively on the impact of corruption with regards to inward investment flows especially for the SADC countries.

Douglass North (1991) argued that property rights are the key institutional determinant of investment. This is supported by Ali and MacDonald (2010) who for their study of 69 countries concluded that property rights is the most important institutional variable in determining FDI inflow into the host country compared to the other variables such as democracy, corruption, political instability and social tension. Once property rights are secured and enforced the other institutional variables will no longer be significant in determining the flow of FDI.

Regarding the use of democracy as an indicator of institutional quality, there is a pre-supposed assumption that democratic regimes offer more property rights protection compared to autocratic regimes. However, there are so many examples of good autocratic regimes and bad democratic regimes and the expectation on property rights security runs against the priori expectations. Cao (2009) emphasised the role of democratic institutions in investment flows. Like many researchers, Cao (2009) argued that democratic institutions have conflicting impacts on the inflows of foreign investment. It must be accepted that some autocratic governments attract more FDI than others.
Robert et al., (2012) argued that autocratic and repressive regimes attract more FDI mainly because they will ensure that there are low wages which will mean low production costs for the foreign firm. These sentiments are shared by Asiedu and Lien (2011) who also argued that MNCs may prefer to invest in autocratic regimes mainly because these governments are not accountable to their electorates hence they may be in better position to provide protection from labour unions and other packages. Furthermore, under autocratic governments it is easier for MNCs to exploit their dominant positions in the host country (Asiedu and Lien, 2011) since they will be enjoying the protection of corrupt host government officials.

Given the different arguments about the impact of different types of regimes on FDI flows, it can then be argued that what matters to foreign direct investors may not be regime type but certain institutional variables of the host country. This therefore means that as long as the host country can provide institutional assurances and credibility, the issue of whether a country is democratic or autocratic will not be significant in FDI decision making. But this is not to disregard the quality of institutions.

The above arguments clearly highlight the fact that the role and impact of institutions in determining FDI flows is mixed. This therefore means in order to comprehensively determine the role of institutions in FDI flows, there is a need to use comprehensive indicators for institutions. The next section details the methodology used in this study to model the role of institutions in determining FDI flows into the SADC region.

3. Methodology

3.1 The Model, Data and Variable Definitions

This section discusses the model used to determine the role of institutions in determining FDI flows into the SADC region. The section also gives a brief description of the data used and the a priori expectations. The justification for the use of the selected model is also discussed.

3.2 Data and Model Description

The study uses the panel data modelling approach for all the SADC countries using annual data from 1996 to 2016. Thus specifically, the study seeks to examine the impact of institutions on FDI inflows into the SADC region. The data is sourced from the International Country Risk Guide (ICRG), World Bank (Development Indicators) and United Nations Conference on Trade and Development (UNCTAD). The base model to be estimated is of the form:

$$FDI_{it} = \alpha_i + \beta Inst_{it} + CV_{it}\delta + \varepsilon_{it} \quad (3.1)$$

Where

FDI_{it} is the dependent variable which is measuring the inflow of FDI into country *i* in time *t.* The variable is the log of net FDI inflows expressed as percentage of GDP. This is done to take into account the effect of the country size. The data for this variable is taken from the UNCTAD FDI database.

α is a constant term which may capture the effects of other un-specified factors thus it is a common fixed effect term.

$Inst_{it}$ this is the target explanatory variable. It is proxied by 12 different measures of institutional and political factors. This is important so that the study does not make the same error by previous studies of using only one or some of the institutional variables thus making the indicator robust. The variable is constructed from the International Country Risk Guide (ICRG) which is published by the Political Risk Services Group (PRS).

All the variables are ranked from 0 to 6, where a low score implies weak institutions. It must however be appreciated that the PRS group ranks these variables differently, thus some are ranked from 0 to 4, 0 to 6 and others are ranked from 0 to 12. As an example, a score of 4 may mean very low risk for bureaucratic quality (*it is ranked from 0 to 4*) but a score of 4 for socio-economic conditions which is ranked from 0 to 12 indicates a high risk. This therefore means there is a need to adjust the original ranking to be able to make comparisons across the various risk categories. The following are the selected institutional variables for this study and are defined in line with the PRS group:

i. Democratic Accountability – the variable covers aspects such as government accountability to its citizens, civil liberties as well as political rights.
ii. Law and Order –it measures the strength of the legal system in implementing law and order.
iii. Military involvement in Politics - this indicates a breakdown of the democractic system in a country and might lead to a higher risk to investors.

iv. Religious Tensions – the variable indicates the marginalisation of certain religious groups in society.
v. Ethnic Tensions - refers to divisions which exist in society due to differences in race, nationality and language
vi. Corruption – this variable ranks countries according to their level of corruption as measured by Transparency International.
vii. Investment Promotion – issues under this variable include exchange control regulations, contract viability, repatriation of profits, payment delays among other additional investment risks which are not covered elsewhere.
viii. Socio-Economic Conditions – it measures, unemployment, poverty and inequality conditions. These conditions can constrain and destabilise governments.
ix. Government Stability – this variable consist of government unity, legislative strength and popular support. Thus, it measure the ability of government to undertake its business by carrying out its programmes and to stay in office.
x. Bureaucratic quality – it measures institutional strength, quality and durability.
xi. External Conflict- the variable includes all forms of violent and nonviolent pressure for example, war, cross-border conflict as well as foreign diplomatic pressures.
xii. Internal Conflicts – this institutional variable measures domestic disturbances for example civil war, terrorism and civil disorder.

The study adopted the procedure developed by Cleeve (2012) in adjusting the institutional variables scores. All the rankings were adjusted to have a maximum score of 6 in order to have consistence in estimation and interpretation. For variables with scores from 0 to 4 the study uses the following formula:

$$\frac{7}{5}(x+1)-1 \quad \ldots\ldots\ldots \quad (3.2)$$

For the variables with scores from 0 to 12, the study uses the following formula

$$\frac{7}{13}(\gamma+1)-1 \quad \ldots\ldots\ldots \quad (3.3)$$

Except for Cleeve (2012), previous studies such as Busse and Heffeker (2007), Asiedu (2006) and Ali and MacDonald (2010) assumed a uniform scoring across the indicators. This may compromise the credibility of their results.

CV_{it} is a vector of other factors which explain the inflow of FDI into the SADC region. These controlling variables are drawn from the surveyed empirical literature. This however is a challenge due to the fact that the empirical literature seems to suggest a large number of variables that can be potential determinants of FDI inflows. That being said, the study chose the variables that have been used extensively in the reviewed empirical literature. The traditional and policy variables are sourced from the World Bank's World Development Indicators (WDI) database. Based on the mainstream literature on FDI, the chosen controlling variables are the following:

$LGDP_{PC}$, this the log of GDP per capita which is used to measure or capture the impact of the market size of the host country in attracting FDI inflows.

Infrastructure Development – this is proxied by the number of telephones lines per 1000 people (*Tele*).

Tariff- this is the policy variable which measures the openness of the country to trade and investment. It is measured by the mean of the tariff rate to capture the effect of trade policy on FDI flows.

Inflation (*Infl*) – this is a proxy for the macro-economic and fiscal stability

LTax – this is a measure of the marginal corporate income tax rate. It is used to measure the expected impact of the corporate tax rate on FDI flows.

3.3 A Priori Expectations

The following is expected in terms of the relationship between FDI and the variables under study:

- $Inst_{it}$ it is expected that an improvement in any of the institutional variables will lead to an increase in the flow of FDI into the SADC countries.
- It is expected that $LGDP_{PC}$ is positively correlated with FDI inflows into the SADC region. This is in line with the market size hypothesis.
- *Tariff*, it is expected that a low level of tariff and an open economy will attract more FDI. The more open the economy is, the higher the probability of FDI flowing to those host countries. It is therefore expected that an open economy will encourage the inflow of FDI.
- *Tele* is expected to be positively correlated to FDI inflows. This is because satisfactory infrastructure makes it easy for FDI firms to do business by improving efficiency of investment hence attracting more FDI inflows in the process. This is more so for efficiency seeking FDI firms. Studies have actually shown that weak infrastructure is the biggest constraint to FDI inflows in Sub-Saharan Africa
- *Inflation (Infl)* - macro-economic stability especially price stability is one of the key factors necessary to stimulate economic growth and FDI flows. If there is no macro-economic stability the risk of doing business to the investing foreign firm increases. It is therefore expected that a lower inflation should be interpreted to mean a good investment climate hence more FDI inflows are expected. Thus it is a priori expectation that the lower the inflation rate the higher the FDI inflows in that particular host country.
- *LTax* – it is expected that there is a negative correlationship between corporate tax rates and FDI flows. A higher corporate tax rate is expected to be associated with lower FDI inflows into a particular host country.

All the variables used in the study are transformed into logarithms. After considering all the discussed variables the model to be estimated to determine the impact of institutions on FDI inflows into the SADC countries is as follows:

$$LFDI_{it}= \alpha_i+\beta Inst_{it}+\delta_1 LGDP_{PCit}+\delta 2LGDPit +\delta 3LTeleit+\delta 4LTariff+\delta 5LInflit+\delta_6 LTax+\varepsilon_{it}\ldots\ldots\ldots\ldots\ldots(3.4)$$

Table 1 provides the summary of the descriptive statistics of the model estimated to determine whether institutions matter in determining the flow of FDI into the SADC region.

Table 1*:* Descriptive Statistics of the Variables, 1996-2016

Variable	Obs	Mean	Std Dev	Min	Max	Definitions
FDI	250	1.268631	1.114218	-2.981883	4.202729	Foreign Direct Investment
GDP	250	1.528680	0.685764	-1.384002	3.290092	Gross Domestic Product
GDP PC	250	1.528680	0.685764	-1.384002	3.290092	Per Capita Income
INFL	250	2.118359	0.896157	-1.742969	5.783816	Inflation Rate
TARIFF	250	1.711295	1.042448	-0.693147	3.663818	Level of Tariff
TAX	250	3.546180	0.416673	2.451555	4.493104	Corporate Tax
TELE	250	0.512833	1.751969	-5.096165	3.450097	Telephones per 1000
BURQUAL	250	0.810329	0.522947	-0.916291	1.667707	Bureaucratic Quality
CORRUPT	250	0.848892	0.585970	-0.916291	1.667707	Corruption
DEMACC	250	1.498763	0.265885	0.693147	1.791759	Democratic Accountability
ETHTEN	250	1.417685	0.219837	0.851410	1.791759	Ethnic Tensions
EXCON	250	1.612781	0.291672	0.143101	2.251292	External Conflict
GOVSTAB	250	1.295963	0.452608	-2.564949	1.697731	Government Stability
INCON	250	1.445683	0.286981	-1.360977	1.791759	Internal Conflict
INVPRO	250	1.219397	0.531071	-2.564949	1.745850	Investment Promotion
LAWORD	250	1.257733	0.517404	-2.564949	1.697731	Law and Order
MILPOL	250	1.206975	0.484055	0.000000	1.791759	Military in Politics
RELTEN	250	0.622462	0.916959	-2.564949	1.609438	Religious Tension
SOCIO_ECON	250	0.323025	0.823120	-2.564949	1.647178	Socio-economic Conditions
INST_AVER	250	4.122705	0.192033	3.564827	4.392905	Annual Institutional Average

Source: Derived from Author's Own Calculations

The descriptive statistics shown in table 3.3.1 clearly indicate the high level of diversity with regard to the SADC countries. The average FDI to GDP ratio for the SADC countries is 1.4 percent whilst the maximum is 4 percent. This is too small a percentage given the huge financing gap in the region. GDP per capita which measures the market size shows that on average SADC residents received USD1.528 per person with a serious variation across countries. The highest GDP per capita is USD3.290. In terms of infrastructure, on average there are 0.51 telephone lines per 1000 people and a maximum of 3.45 per 1000 people in the SADC region. Table .2 summarises the correlation of FDI with the independent variables.

Table 2*:* Correlation Matrix of the Variables in the Model

	LFDI	LGDP	LGDP_PC	LINFL	LTARIFF	LTAX	LTELE	LINST_AVER
LFDI	1							
LGDP	0.2412475	1						
LGDP_PC	0.2412475		1					
LINFL	0.0107999	0.0769502	0.0769502	1				
LTARIFF	0.0543478	0.1334669	0.1334669	0.140282	1			
LTAX	0.1625206	0.0655259	0.0655259	0.2093233	-0.065281	1		
LTELE	-0.190796	-0.231629	-0.231629	-0.282771	-0.359667	-0.141122	1	
LINST_AVE	**-0.1376**	-0.061642	-0.061642	-0.254543	-0.41636	-0.009367	0.5539731	1

Source: Derived from Authors Own Calculations

Table .2 shows that FDI is positively correlated with economic growth.. This is in line with the a priori expectations. FDI is also positively correlated with inflation, the tariff rate and the tax rate. This is not line with a priori expectation. This could be due to the fact that investment increases productivity leading to higher incomes and hence increased expenditure and inflation. There is also a negative correlation between FDI and the average institutional variable and the level of infrastructure development as proxied by the number of telephone lines per 1000 people. This could be another source of model errors which then requires further analysis.

It should however, be appreciated that correlation does not mean causation. This therefore means that there is a need to undertake rigorous empirical examination of the role of institutions in determining FDI inflows hence the next subsection runs the necessary regression equations to examine the influence of institutions on FDI flows.

3.4 The Empirical Results

In order to empirically examine the role of institutions in determining FDI flows into the SADC region, a panel data analysis approach is applied. The advantages of panel data are that it allows for the control of variables which one cannot observe or measure. Examples include cultural factors as well as differences in business practices across countries. Furthermore, panel data also enables the examination of variables that change over time but not across entities (i.e. national policies, government regulations, international agreements among other variables). Thus panel data allows accounting for individual heterogeneity.

The study first applied both the random effect and the fixed effect models approaches in analysing the variables. The use of both models is to take account of the fixed and random individual differences in the observations in a time series cross section data set. However, the application of the Hausman (1978) test suggested the use of the fixed effects model as it was more suitable compared to the random effects model. Fixed effects model allow the examination of the relationship between the dependent and the independent variables within a particular country. Thus each country has got its own characteristics that may or may not influence the independent variables. Furthermore, the fixed effects model removes the effect of time invariant characteristics. This enabled the assessment of the net effect of the independent variables on FDI.

The study then estimated 3 equations using the fixed effects model. First a base model with all the institutional variables summed up as the annual average is estimated together with the control variables. The second equation further decomposes the institutional variables into 12 subcomponents for example law and order, government stability, internal conflict etc. The third regression equation estimates FDI inflows against only the institutional variables without the control variables.

Table 4*:* Fixed –Effects GLS Regressions 1996-2016

Variables	Base Model	Equation 2	Equation 3
LGDP	4.34815	4.252243	
	(0.0000)**	(0.0000)**	
LINFL	-0.091197	-0.091199	
	(0.0569)**	-0.1339	
LTARIFF	-0.11482	-0.187106	
	(0.1785)	(0.0407)**	
LTELE	0.082616	0.044949	
	(0.5347)	(0.7359)	
LTAX	0.548291	0.398198	
	(0.0403)**	(0.1881)	
LGDP_PC	-3.934979	-3.627207	
	(0.0000)**	(0.0000)**	
LDEMACC		0.64	-0.86
		(0.2309)	(0.2732)
LMILPOL		-0.31	-1.00
		(0.4051)	(0.0575)**
LRELTEN		0.50	0.04
		(0.1291)	(0.9315)
LSOCIO_ECON		-0.29	-0.32
		(0.3472)	(0.4527)
LBURQUAL		-0.78	1.12
		(0.1646)	(0.1535)
LCORRUPT		0.29	-1.55
		(0.6083)	(0.0461)**
LETHTEN		1.07	1.88
		(0.0373)**	(0.0113)**
LEXCON		-0.27	0.08
		(0.5532)	(0.8996)
LGOVSTAB		0.10	-0.50
		(0.696)	(0.1694)
LINCON		-0.39	-0.10
		(0.2854)	(0.8537)
LINVPRO		0.22	1.15
		(0.6116)	(0.0608)**
LLAWORD		-0.08	-0.52
		(0.8662)	(0.4156)
LINST_AVER	1.584457		
	(0.0106)**		
Observations	310	283	288
R- Squared	0.80	0.83	0.61
*** denotes significance at 5%*			

Source*:* Derived from Authors Own Calculations

The numbers in parenthesis represents the test static values. The R squared which measures how good the model is in explaining the changes of the dependent variable (FDI) due to its regressors are 80 percent (base model), 83 percent (equation 2) and 61 percent (equation 3) for the three estimated models respectively. This therefore means the models used can be used to estimate how institutions influence the flow of FDI into the SADC region. However, the R squared can be misleading especially when dealing with panel data.

3.5. 2 Stage Least Squares (2SLS)

The estimated equations in section 3.4.1 only considered heterogenity and did not deal with the potential problems of endogeneity. For example GDP can also be determined by FDI thus an increase in FDI can lead to an increase in GDP and vice versa. This leads to dual causality which then creates the endogeneity problem. Furthermore, some of the proxies used such as telephone lines per 1000 people can also be another source of problems leading to measurement errors. The model can run into the challenge of omitted variables. To deal with the above challenges, the study applies the 2 Stage Least Squares (2SLS) approach. But first there is a need to test for the existence of endogeneity between FDI and Economic growth. To check whether there is endogeneity between FDI and Economic growth the Durbin–Wu–Hausman Test is applied in this study.

First a model with all the institutional variables was run to determine the role of institutions on FDI flows into the SADC region using the 2 Staged Least Squares methodology (2SLS). However, the results were not making economic sense compared to a priori expectations and established economic relationships in literature. This then means that there is a need to estimate the role of each institutional variable together with the established macro-economic variables but controlling for the rest of the institutional variables. Eleven models are estimated and the results are shown in table 5.

Table 5: Results of the 2SLS Estimated Models

	Estimated Models										
Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**
LGDP	0.023	0.187	0.102	0.022	0.055	0.051	0.025	0.062	0.031	0.042	0.036
	(0.675)	(0.00)**	(0.091)	(0.696)	(0.369)	(0.395)	(0.672)	(0.294)	(0.558)	(0.453)	(0.520)
LGDP_PC	0.153	0.163	0.242	0.293	0.236	0.213	0.248	0.251	0.192	0.242	0.395
	(0.245)	(0.242)	(0.069)	(0.031)**	(0.084)	(0.130)	(0.067)	(0.063)	(0.131)	(0.071)	(0.005)**
LINFL	-0.119	-0.163	-0.156	-0.150	-0.152	-0.348	-0.151	-0.150	-0.106	-0.350	-0.139
	(0.019)**	(0.001)**	(0.003)	(0.004)	(0.005)	(0.000)	(0.004)	(0.004)	(0.033)	(0.000)	(0.008)
LINVPRO	0.214	0.195	0.176	0.908	0.107	0.075	0.098	0.160	0.246	-0.104	0.194
	(0.104)	(0.125)	(0.190)	(0.18)	(0.23)	(0.671)	(0.465)	(0.243)	(0.054)	(0.560)	(0.150)
LTARIFF	-0.320	-0.247	-0.310	-0.216	-0.313	-0.282	-0.286	-0.306	-0.270	-0.293	-0.212
	(0.000)**	(0.001)**	(0.000)**	(0.025)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.010)**
LTAX	1.582	0.977	1.146	1.109	1.099	1.223	1.150	1.151	1.481	1.297	1.179
	(0.000)**	(0.000)**	(0.000)**	(0.014)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**
LTELE	-0.032	-0.256	-0.295	-0.341	-0.342	-0.424	-0.345	-0.328	0.097	-0.508	-0.367
	(0.776)	(0.009)**	(0.002)**	(0.000)**	(0.000)**	(0.000)**	(0.000)**	(0.001)**	(0.389)	(0.000)**	(0.000)**
LBURQUAL	-1.132										
	(0.000)**										
LDEMACC		-1.61556987									
		(0.000)**									
LMILPOL					-0.17393536						
					(0.335)						
LRELTEN						0.114986111					
						(0.354)					
LSOCIO_ECON										0.352376165	
										(0.012)**	
LCORRUPT									-1.44769912		
									(0.000)**		
LETHTEN			-1.14230951								
			(0.002)**								
LEXCON											-0.89959028
											(0.001)**
LGOVSTAB							0.148150125				
							(0.456)				
LINCON								-0.5214144			
								(0.080)**			
LLAWORD				-0.82981867							
				(0.036)**							
Observations	310	289	310	310	309	305	310	310	310	305	310
R- Squared	0.42	0.46	0.40	0.39	0.38	0.39	0.38	0.38	0.45	0.40	0.40
** denotes significance at 5%											

Source: Derived from Authors' Own Calculations

3.5.2 Economic Growth and FDI Inflows

There is a positive relationship between economic growth (GDP) and the inflow of FDI for the SADC countries for all the estimated models. This confirms the results of the base model estimated using the Fixed Effects (Table 3.4.1). The base model shows that FDI inflows for SADC countries are positively correlated to the GDP. This is in line with the priori expectations and the findings of other researchers such as Ali and Macdonald (2010) who for a study of 60 countries between 1981 and 2005 concluded that the impact of GDP growth on FDI is positive and significant. However, the results are only significant for model 2 where the institutional variable democractic accountability is introduced.

3.5.3 Institutions and FDI Inflows

The base model under the fixed effect also confirms that institutions play an important role in determining FDI inflows for SADC countries. The study found that there is a positive and significant relationship between FDI flows and institutions. This means the better the institutions in a particular country in SADC the more FDI flows into that country. This is also supported by the findings of Alfaro *et al.,* (2008), Papaioannou (2008) and Akhtaruzzaman *et al.,* (2018) who resolved that the quality of institutions is a key determinant of FDI flows into a particular country.

3.5.4 GDP Per Capita and FDI Inflows

The results of the fixed effect model show that there is a negative relationship between FDI inflows and the GDP per capita both in the base model and the second model which included institutional variables in addition to the control variables. The relationship is also statistically significant. This could mean that MNCs invest in the SADC region for the reason of cheap natural and human resources and not necessarily market seeking. In this regard, the products of the MNCs are exported to other foreign markets.

However, the results of the 2SLS (table 3.5.2) confirms that the market size in the host country matter in attracting FDI inflows for the SADC region across all the estimated models. There is a positive relationship between FDI inflows and the market size as proxied by the GDP per capita (GDP_PC). The results are however, significant in models 4 and 11 only where there is law and order as well as government stability. Cleeve (2012), for a study of 40 Sub-Saharan Africa reached the same conclusion.

3.5.5 Inflation Rate and FDI Inflows

As expected there is a significant negative relationship between the inflation rate of a particular country in the SADC region and the inflow of FDI into countries across all the estimated models including the fixed effect base model. This is the same observed relationship in equation 2 after decomposing the institutional variables into the 12 subcomponents. This is in line with a priori expectations and reviewed literature. An environment with high inflation makes it difficult for firms to plan and maximise their profits which is their main objective. It therefore makes economic sense that an increase in inflation leads to a decrease in the flow of FDI into the SADC region.

3.5.6 Investment Promotion and FDI Inflows

The results also show that deliberate efforts to promote investment in a host country leads to an increase in FDI inflows into the SADC region. Although, this is in line with the a priori expectations and the findings of Dumludag (2008) for the study of Turkey and Egan (2015) for the study of Brazil, the results are not statistically significant at the 5 percent level of significance.

Investment promotion is positively related to FDI flows for the SADC region and the relationship is statistically significant for the estimated model 9. This therefore means SADC countries should establish independent investment promotion agencies in order to attract FDI inflows into their economies. Singh *et al.*, (2012) as well as Egan (2015) concluded that investment promotion efforts lead to more FDI inflows for the host countries for Rwanda and Brazil respectively. It must however, be acknowledged that these countries are not within the SADC region meaning there may be other factors such as physical infrastructure and geographical location which determines the flow of FDI, hence the same result should not be expected for the SADC countries.

For a study on the determinants of FDI into developing countries, Asiedu (2002) concluded that the determinants of FDI are not uniform across Africa and that policies which have been proved to work in other economic regions do not necessarily work in Africa. This proved that Africa as a region is different and as such FDI policies should be formulated in the right context.

3.5.7 Corporate Tax and FDI Flows

Contrary to expectations, there is a positive relationship between FDI flows and the level of corporate tax in the host country for the SADC region and the results are statistically significant. This could mean that the MNCs which invest and operate in the SADC region are usually in the mining and oil industrial sectors for example diamonds in Botswana and Zimbabwe, Gold and Platinum in South Africa and oil in Angola. The availability of such strategic natural resources and the high returns from their economic activities make MNCs to overlook other variables such as corporate tax.

3.5.8 Bureaucracy and FDI Inflows

An increase in the level of bureaucracy leads to a decrease in the flow of FDI into the SADC region. This is in line with the a priori expectations. Bureaucracy leads to inefficiencies which are a cost to the firm hence eroding the expected profits. Naturally, MNCs will be hesitant to invest in such a business environment. Likewise, Cleeve (2012) for a study of 40 Sub-Saharan Africa countries also found that bureaucracy leads to a decrease in the flow of FDI.

3.5.9 Democracy and FDI Inflows

The results indicate that an increase in democracy leads to an increase in the inflow of FDI for the SADC countries. Asiedu (2011) for a study of the interlinkages between democracy, FDI and natural resources made the same conclusion. An increase in democracy makes the political leaders to be accountable to their citizens hence one would assume that issues of contract enforcement, corruption and property rights are respected and hence MNCs will find it easy to invest in such kind of a business environment thereby increasing the inflow of FDI into the host country. These sentiments are also shared by

Jensen (2008) who also concluded that democratic governments promote FDI inflows into the host country as they are perceived to be less risk by MNCs investors. Jensen (2003) also concluded that a switch from an authoritarian regime to a democractic regime increases FDI inflows by 60 percent for 114 countries.

However, the relationship is not statistically significant meaning that in the SADC region, the type of regime whether democratic or autocratic does not really matter in determining and influencing the flow of FDI into the region. These findings are also in line with Asiedu and Lien (2010) who for a study of 112 developing countries concluded that democracy only promotes FDI if and only if the value of the share of minerals and oil in total exports is less than a certain critical value.

From the examined 122 countries, 90 countries showed a positive relationship between FDI and democracy whilst 22 countries showed that an increase in democracy reduce FDI inflows into the host country. One possible explanation is that the availability of natural resources overshadows the negative institutional factors. Zimbabwe (*diamond, gold and platinum*), Angola (*oil*) and Zambia (*copper*) are classic examples where democratic accountability does not matter in terms of attracting or repelling FDI flows due to the fact that they are endowed with strategic natural resources.

3.5.10 Law and Order and FDI Inflows

The results also indicate that an improvement in law and order leads to an increase in the inflow of FDI for the SADC countries. This is in line with the a priori expectations and other researchers such as Cleeve (2012) who for 40 Sub-Saharan African countries also concluded that a country with law and order tend to attract more FDI inflows. Busse and Hefeker (2007) also concluded that ensuring basic rights and promoting the rule of law is significant in attracting FDI inflows.

Although law and order is in line with expectations and theory by exhibiting a negative relationship with FDI flows, it is not statistically significant. This could be due to the fact that many countries in the SADC region are endowed with strategic natural resources which make investors overlook the lack of law and order and other institutional variables.

This highlights how endowment in natural resources is a key factor in determining FDI inflows. Researchers such as Asiedu (2006), Campos (2004) and Ferreira (2016) made the same conclusions. However, because the relationship is not significant the results become inconclusive meaning law and order cannot explain the flow of FDI into the SADC region.

3.5.11 Military in Politics and FDI Inflows

The involvement of military in politics is associated with a decrease in the inflow of FDI for the SADC countries. The results show that if the military gets involved in politics, it leads to a decrease of FDI inflows into the SADC region and the relationship is statistically significant. This is in line with the a priori expectations. The involvement of military in politics means there is a high risk of political change and the new government can change whatever initial agreements and arrangements which may be in place for the existing MNCs. The results are supported by the findings of Cleeve (2012) for a study of 40 Sub-Saharan African countries who also concluded that once the military get involved in politics it act as a deterrent for FDI inflows into that particular country.

3.5.12 Socio-Economic Conditions and FDI Inflows

The socio-economic conditions of the host country are also positively related with the inflow of FDI into the SADC countries and the results are statistically significant. This therefore means that an improvement in the host country's socio-economic conditions will lead to an increase in the inflow of FDI into that particular country.

3.5.13 Corruption and FDI Inflows

Similar to the work of Asiedu (2006), corruption is a major constraint to the inflow of FDI to the SADC countries. The results show that an increase in corruption will lead to a decrease in the inflow of FDI into the SADC countries and the results are statistically significant. This is in line with the a priori expectations. SADC countries should therefore address their leadership and governance issues with the aim of stamping out corruption. A case in point is South Africa, whereby the government has been on an anti-corruption drive by establishing various commissions of enquiry especially for the State Owned Companies. Likewise, Zimbabwe has also established an anti-corruption unit to deal with the rampant corruption in that country. This is done with the hope that it will improve the image of the respective countries and hence the business confidence and in the process lead to an increase in the inflow of FDI.

3.5.14 Government Stability and FDI Inflows

Government stability is also an important institutional variable in determining the flow of FDI into the SADC countries. The results show that a stable government is associated with an increase in the inflow of FDI for the SADC countries. This is supported by the findings of Ahlquist (2006) who for a study of FDI into developing countries concluded that countries which are more politically stable tend to attract more FDI inflows.

3.5.15 Tariff Rate and FDI Inflows

The results confirms that there is a negative correlation between the tariff rate and the flow of FDI into SADC countries. This is similar to the results of the fixed effect base model. This makes economic sense as high tariff makes imports of raw materials expensive if the MNC is manufacturing products which require imports from outside the foreign country where it will be operating. In any case even in resource seeking FDI for example in the mining sector, there is still a need to import heavy duty equipment into the SADC countries hence a high tariff will add up to the total costs of imports.

However, the impact of tariff is not statistically significant in the fixed effect base model. In the second model after disintegrating the institutional variables, the tariff rate becomes significant meaning tariffs play an important role in determining FDI flows into the SADC region when combined with the elements of institutional variables. This further amplifies the importance of institutions in determining the flow of FDI into the SADC region.

3.5.16 Internal and External Conflict and FDI Inflows

Internal and external conflicts impact negatively the inflow of FDI into the SADC countries and the results are statistically significant. This is in line with the findings of Busse and Hefeker (2007) who concluded that FDI inflows are determined by government stability, the absence of internal conflicts and ethnic tensions. A country can determine its domestic politics and conflict but will have no direct control over the affairs of its neighbours. Thus the results indicate within the SADC region, external conflicts lead to a decrease in the inflow of FDI to the SADC countries. This is the so called spatial contagion effect or the neighbourhood effect.

3.5.17 Ethnic Tensions and FDI Inflows

Ethnic tensions are positively correlated to the flow of FDI into the SADC region and the relationship is significant under the fixed effect model. However, using the 2SLS, the relationship is negative and in line with the a priori expectations, although it is not statistically significant. This may be due to the fact that certain ethnic groups will protect the MNCs operating into their country as they will be benefiting from the presence of such foreign investors. Thus as long as the ethnic group which is in power favours and protects the MNC then FDI will flow into that particular host country and most specifically in a particular geographical region within the host country. This is mainly true for resource seeking FDI for example the mining of strategic mineral resources such as diamonds and gold.

3.6 Robustness Test

In order to check the results established through the use of the 2SLS methodology, this study re –estimated all the 11 models under table 3.5.2 using the Dynamic Generalised Methods of Moments Technique (GMM). Results of the GMM technique are in line with the output of the 2SLS in terms of the sign of the coefficient and significance. This therefore means the estimated models through the 2SLS can be used to understand the role of institutions on FDI flows into the SADC region.

Table.6: Estimated GMM Models Results

	Estimated Models										
Variables	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**
LGDP	0.023	0.187	0.055	0.051104	0.051	0.031	0.102	0.036	0.025	0.062	0.022
	(0.6751)	***(0.0049)	(0.3694)	(0.3949)	(0.3949)	(0.5577)	*(0.0908)	(0.5204)	(0.6716)	(0.2938)	(0.6957)
LGDP_PC	0.153	0.163	0.236	0.213452	0.213	0.192	0.242	0.395	0.248	0.251	0.293
	(0.2457)	(0.2421)	*(0.0839)	(0.1302)	(0.1302)	(0.1306)	*(0.0692)	***(0.0050)	*(0.0668)	*(0.0629)	**(0.0310)
LINFL	-0.119	-0.163	-0.151900	-0.348309	-0.348	-0.106	-0.156	-0.139	-0.151	-0.150	-0.150
	***(0.0198)	***(0.0011)	***(0.0048)	***(0.0000)	***(0.0000)	**(0.0327)	***(0.0028)	***(0.0078)	***(0.0044)	***(0.0043)	***(0.0044)
LINVPRO	0.214	0.195	0.107	0.074941	0.075	0.246	0.176	0.194	0.098	0.160	0.908
	(0.104)	(0.1248)	(0.4262)	(0.671)	(0.671)	**(0.0544)	(0.1899)	(0.15)	(0.4652)	(0.2431)	**(0.025)
LTARIFF	-0.320	-0.247	-0.313234	-0.282116	-0.282	-0.270	-0.310	-0.212	-0.286	-0.306	-0.216
	***(0.0000)	***(0.0014)	***(0.0002)	***(0.000)	***(0.0004)	***(0.0003)	***(0.0001)	***(0.0102)	***(0.0004)	***(0.0001)	***(0.0136)
LTAX	1.582	0.977	1.099	1.223090	1.223	1.481	1.146	1.179	1.150	1.151	1.109
	***(0.0000)	***(0.0014)	***(0.0004)	***(0.000)	***(0.0000)	***(0.0000)	***(0.0000)	***(0.0000)	***(0.0000)	***(0.0000)	***(0.0000)
LTELE	-0.032	-0.256	-0.342	-0.423534	-0.424	0.097	-0.295	-0.367		-0.328	-0.341
	(0.7763)	***(0.0086)	***(0.00	***(0.000)	***(0.0000)	(0.3894)	***(0.0023)	***(0.0001)		***(0.0007)	***(0.0004)
LBURQUAL	-1.132										
	***(0.0000)										
LDEMACC		-1.61557									
		***(0.0000)									
LMILPOL			-0.174								
			(0.3350)								
LRELTEN				0.114986	0.352376						
				(0.354)	***(0.0122)						
LSOCIO_ECON											
LCORRUPT						-1.447699					
						***(0.0000)					
LETHTEN							-1.14231				
							***(0.0017)				
LEXCON								-0.89959			
								***(0.0012)			
LGOVSTAB									0.14815		
									(0.4557)		
LINCON										-0.521414	
										*(0.0795)	
LLAWORD											-0.829819
											**(0.0360)
Observations	310	289	310	310	309	305	310	310	310	305	310
R- Squared	0.42	0.46	0.40	0.39	0.38	0.39	0.38	0.38	0.45	0.40	0.40
*** denotes significance at 1% , ** at 5% and *at 10%											

Source: Authors' Own Calculations Using Eview

3.7. Policy recommendations

The policy implications from the study clearly indicate that the growth rate of the host country is important in attracting FDI inflows into the SADC region. This therefore means SADC countries need to promote growth enhancing policies and initiatives in order to attract FDI inflows. However, the impact of the size of the market in the host SADC countries is still ambiguous in attracting or repelling FDI flows. This means the majority of the MNCs which invest in the SADC region are not necessarily market seeking but resource seeking. Governments in the SADC region should therefore put terms and conditions which will ensure that FDI comes with the intended and desired benefits and not only take away the host countries' resources.

The role of institutions in determining FDI flows cannot be overemphasised. All the SADC countries should ideally work together and put common policies which support and promote favourable institutions for example low levels of corruption, promoting peace and stability in the region, reduce the involvement of military in politics, promotion of the rule of law etc. This is important to avoid the negative neighbourhood effect which might affect the rest of the SADC countries which will be putting efforts in place to improve on governance and other institutional variables.

SADC governments should set up independent investment promotion agencies in their economies to promote FDI and in the process deal with the funding gap problem. This is because the empirical results show that there is a positive and significant correlationship between investment promotion and FDI flows into the region.

4. Conclusion

The study examined the role of institutions in determining the flow of FDI using three panel data techniques which are the fixed effects model, 2SLS and the GMM technique. The study made use of 12 institutional indicators and calculating institutional indices for countries like Mauritius, Swaziland and the Seychelles for the first time in the academic literature.

From the reviewed literature and results of the econometric models developed in the study, it is evident that institutions play a significant role in attracting or repelling FDI flows. The study found that there is a positive and significant relationship between FDI flows and institutions. This means the better the institutions in a particular country in SADC the more FDI flows into that country.

The results also confirms that the market size in the host country matter in attracting FDI inflows for the SADC countries across all the estimated models. Investment promotion is positively related to FDI flows for the SADC region and the relationship is statistically significant. Thus, the results also show that deliberate efforts to promote investment in a host country leads to an increase in FDI inflows into the SADC region.

In the SADC region, the type of regime whether democratic or autocratic does not really matter in determining and influencing the flow of FDI into the region. For example, the modelling results confirm that democratic accountability does not always impact on the flow of FDI into the SADC region.

Government stability is also a significant institutional variable in determining the flow of FDI into the SADC countries. The results show that a stable government is associated with an increase in the inflow of FDI for the SADC countries. The determinants of FDI are not uniform across Africa and that policies which have been proved to work in other economic regions do not necessarily work in SADC.

Corruption is a major constraint to the inflow of FDI to the SADC countries.The theoretical and empirical literature also confirms that there is correlation between corruption and the flow of FDI. Even though the findings for the impact of corruption on FDI are mixed for other studies, this study found that that there is a significant negative correlation between corruption and FDI inflow in a particular host country. Thus, SADC countries should put measures in place to deal with corruption.

The study also showed that the level of good governance, property rights, business regulation and political stability also impact on the flow of FDI. However, for resource exporting developing countries, institutional variables are not always significant in determining the flow of FDI. Lastly, the availability of strategic natural resources such as diamond, gold and oil among other resources in host countries can alter lead to investors to overlook the negative institutional indicators and invest in those countries.

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THE ROLE OF TRANSNATIONAL NGOS' ACTIVITIES IN AIDING THE ROHINGYA REFUGEE CRISIS IN BANGLADESH: A CASE STUDY OF THE FINNISH RED CROSS

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Abstract

In fact, Myanmar's military forces have been deliberately persecuting the Rohingya minority since 1978. In 2017, the Rohingya had to flee Myanmar and, as a result, there was an influx of more than one and half million Rohingya to Bangladesh. The Finnish Red Cross (FRC) had a quick response to the emergency appeal of the International Federation of Red Cross (IFRC) on the behalf of the Rohingya in Bangladesh in 2017. This research paper is to learn how the activities of the FRC affected the Rohingya refugees, what challenges were faced by the staff of the FRC, and what part was played by other contributors in cooperation with the FRC. The research materials include primary and secondary data. I used this data in methodological triangulation in a deductive approach. From October 2017 to October 2018, 43,780 patients were treated by the RCEH. The main challenges faced by the staff of the FRC was the lack of local infrastructure, lack of internet availability and so on. In contrast, the Inter Sector Coordinator Group (ISCG) and Bangladesh Red Crescent Society were one of the key contributors in attempting to solve these problems, as well as cooperating with the FRC staff, local government, local and international NGOs, and other agencies. This paper is intended to benefit research on the contribution of international NGOs (INGOs) from a global humanitarian perspective.

Keywords: Finnish Red Cross, Globalization, Rohingya, Transnationalism, TNGOs

JEL Codes: F35, J68, L31.

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1. Introduction

For global peace and security, ethnic conflicts and extreme nationalism have been an important issue around the world. Since World War II (WW II), ethnic conflict has reached an extreme level. In the last decade of the 20th century, there are several countries around the world that have experienced vast amounts of ethnic violation: Bosnia, Kosovo, Rwanda, Congo, Sierra Leone, Somalia, Indonesia, Philippines, Sri Lanka, India, Afghanistan, Myanmar, Haiti, and Colombia (Rahman, 2015a, p. 288). Ted Robert Gurr, a leading scholar on ethnic conflicts, published an article in 2000 in which he described the ethnic conflict as a "tsunami of ethnic and nationalist conflict" (Gurr, 2000, quoted in Ganguly, 2003, p. 9–10).

The number of displaced persons caused by forced migration around the world dramatically increased between 1945 and 1952 due to borders at the state level being built up and those at the national level being changed, ultimately forcing people to neighbouring countries to survive (Hansen, 2016, p. 2). Globally, the number of refugees and displaced persons rose by 2 million in 2017. By the end of the year, the figure had reached over 50 million worldwide. While it has been acknowledged that there are 68.5 million forcibly displaced persons worldwide, 25.40 million are of "refugees' status", 40.00 million are "internally displaced people", and 3.1 million are considered "asylum-seekers" (United Nations High Commissioner for Refugees [UNHCR], 2017a, p. 2). At the same time, Southeast Asia (SEA) is a mostly refugee-produced territory and of significance in the SEA region, Myanmar has the highest number of refugees (Ullah and Hossain, 2005, 2011). Since the 15th century, a Rohingya minority have been living at the Arakan State, later renamed Rakhine State (RS), in Myanmar. Despite this, according to UNRHC Global Trend report, Rohingyas are living in the fourth position with a refugee/stateless status around in the world (Advisory Commission on Rakhine State, 2017; Fuller, Leaning, Mahmood and Wroe, 2016, p. 1841; Prodip, 2017, p. 135-146; UNHCR, 2017a, p. 3). According to Walton and Hayward, 2014, there are not only religious and ethnical reasons behind the Rohingya minority having a refugee/stateless status; there are also geopolitical, economic, and historical reasons.

The first forced migration of the Rohingya minority was in 1978, and again in 1991-1992, 2012, 2016, and 2017 to the present (Ahmed, 2010 Danish Immigration Service, 2011; Human Rights Watch, 2012; Inter Sector Coordinator Group, 2018, p. 1-2; United Nation High Commissioner for Refugees, 2018, p. 1-3). It is important to mention that there are 314.40 km of borders shared between Bangladesh and Myanmar, including 207.2 km of land boundary, 68.2 km of the Naf River, and 39 km of maritime boundary up to Saint Martin to push in Bangladesh. Since there are such large borders between Bangladesh and Myanmar, the Rohingya had several ways to get into Bangladesh during the Rohingya conflict in Myanmar (Rahman, 2015b, p. 30). Since the beginning of the Rohingya crisis in Myanmar in 1978, the Bangladesh Government has provided shelter to the Rohingya refugees in the Cox's Bazar District in Bangladesh (Yasmin, 2017, p. 401-423), despite the fact that the Bangladesh Government had not signed "the 1951 Refugee Convention" or "the 1967 Protocol" (UNHCR, 2010).

Figure 1: Makeshift camps at Cox's Bazar District in Bangladesh

Source: YLE Uutiset (2017) 'Finnish Red Cross sends field hospital to Bangladesh'. 27 September [Online] Available on https://yle.fi/uutiset/osasto/news/finnish_red_cross_sends_field_hospital_to_bangladesh/9854252 (Accessed 1 November 2018).

From 25 August 2017 to 15 December 2018, an estimated 736,404 Rohingyas newly arrived at Cox's Bazar District in Bangladesh from the RS in Myanmar, bringing the total Rohingya refugees to 907,952 as of 15 December 2018 (Inter Sector Coordinator Group, [ISCG] 2018, p. 1-2; United Nation High Commissioner for Refugee, 2018, p. 1-3). According to the United Nations (UN), "The situation seems a textbook example of ethnic cleansing, Zeid Ra'ad alHussein told the United Nations Human Rights Council in Geneva" (United Nations News, 11 September, 2017). According to Dean and Ritzer, the first cycle of globalization started in 1492, and another from 1982 to now it still in progress (Dean and Ritzer, 2015). From the perspective of a global humanitarian crisis, the term "globalization" has added a new dimension.

Globalization is increasing inter-connectedness and facilitates the transfer of information between countries and flows of people to wealthier countries (Fryer, 2017, p. 13).

From the local, regional, and global perspectives, many NGOs have been emerged to contribute to helping the humanitarian crisis worldwide. Some NGOs extend or operate their activities across national borders through a network of transnational NGOs (TNGOs). TNGOs are joined to the network based on the same rules, values, norms, and working activities (Willetts, 2013). Keck and Sikkink originated the term "transnational NGOs network" in 1998 (Jordan and Tuijl, 2000). The Finnish Red Cross (FRC) is one of the prominent TNGOs that has been serving since 1877 both globally and locally (A Profile of the Red Cross in the European Union, 2003, p. 26)

2. Research Questions/Research Objectivise

The main aim of this thesis will be to investigate the role of the FRC in the Rohingya refugee emergency in Bangladesh. The recent Rohingya refugee crisis in Myanmar began in August in 2017. While Rohingya refugees quickly moved into Bangladesh, the Government of Bangladesh (GOB) argued that it is impossible to tackle the situation without the financial and technical support of international agencies. From August 2017 to October 2017, 600,000 to 700,000 Rohingyas have entered Bangladesh from Myanmar to escape the Myanmar military force (Humanitarian Practice Network 2018, p. 5; Inter Sector Coordinator Group, 2018, p. 2).

This is my main research question: how does the FRC's contribution affect the situation for Rohingya refugees in Bangladesh? I personally argue that since Bangladesh is one of the most impoverished countries, during the Rohingya refugee crisis of 2017 the FRC undoubtably helped the Rohingya survive until repatriation to Myanmar. So, before I confronted the main question of my research, I first decided to investigate three minor research questions:

• What do the FRC's activities contribute to the Rohingya refugee crisis in Bangladesh?

• What challenges do the FRC staff face in Bangladesh?

• What factors affect the FRC's cooperation with other agencies in Bangladesh?

3. Research methods

As previously noted, from August to October in 2017, 600,000 to 700,000 Rohingya travelled from Myanmar to Bangladesh to avoid persecution by Myanmar's military forces. Thirty-one Partner National Societies (PNSs) (Partner National Societies includes the Red Cross Red Crescent Society, whose organization come from across the global), responded to the emergency appeal of the IOM/IFRC in 2017. The FRC was one of them (Red Cross Red Crescent Response to Population Influx in Bangladesh, 2018, p. 6; YLE Uutiset, 2017). Since this research paper involves the case study on the role of the FRC among the Rohingya refugee in Bangladesh, review of the literature and doing structured interviews will be the primary methods used to gather data. I will apply three theories, globalization theory, transnationalism theory, and transnational NGOs network theory, to answer the three minor research questions. I use the deductive approach to analyses the data.

To complete the structured interview, I was helped by my co-supervisor Dr. Pirjo Pöllänen to make contact with the FRC. After Dr. Pirjo Pöllänen talked to the international aid department at the FRC, we sent an email with a list of questions to one FRC staff member who worked as an international aid worker for the FRC. I only received one response from a FRC staff member who had experience with the FRC in Bangladesh. Because of the lack of primary data, I received, I emphasized the secondary data. Using methodological triangulation, I combined the data from the primary and secondary sources. My methodological triangulation consisted of sourcing data from interviews, field notes, annual reports, and newspapers (Blythe, Bryant-Lukosius, Carter, DiCenso, Neville, 2014).

4. Theoretical Framework

From the beginning of the 1990s until today, there have been numerous reasons to use the term globalization in research as an important signifier. The first reason is to point out the international market-based production that has been extended around the world from the local market to the global market, with its vast array of products. The second reason is that the global culture or transnational culture has been identified by scholars as global culture. The third reason is to chronicle the emergence of global transnational non-governmental organizations (NGOs) that are engaging in humanitarian and developmental work around the world. The fourth reason is transnational migration; there has been an increased mixture of people's own cultures with other communities' cultures. The final reason is that the developed countries are dominated by developing countries (Robinson, 2007, p. 125). Moreover, as explained earlier in this study, from the perspectives on globalization in the early 1990s, there have been two points of view on how NGOs have contributed to humanitarianism and development, and these approaches are "transnationalism and constructivism" (Ahmed and Potter, 2006). At the same time, I am interested in researching the role of the FRC as a transnational NGO among the Rohingya refugees in Bangladesh.

4.1 The world-systems theory

One of the critical aspects of the world system theory is that it can be categorized into three regions based on geographical and economic circumstances. These include core or powerful countries, periphery countries, and semi-periphery countries. The core region includes economically powerful and solvent regions such as North America, Japan, and Western Europe. The periphery region includes regions that are developing and to trying to become part of the core region, such as Latin America, Africa, and most of Asia. The semi-periphery region includes countries that have shifted down from the core to the periphery region or are currently shifting up from the periphery into the core region (Robinson, 2007, p. 129).

Most importantly, there is at least one angle of the world system theory that supports the findings of this research paper. According to the world system theory, experts argue that core countries are economically solvent and can take advantage of technology to help developing countries. However, there has already been an influx of over one and a half million Rohingya refugees into Bangladesh, even though Bangladesh is a periphery country. Notably, for financial matters, the Bangladeshi government willingly demanded support for Rohingya refugees. Recently, however, Bangladesh has jumped from a low-income to a middle-income country in April 2018 (Taylor, 2018). As a result, many international donor agencies have come to the aid of Rohingya refugees in Bangladesh, including the FRC, which has been serving Rohingya refugees in Bangladesh since 2017. As Wallerstein noted, to solve the global crisis (for example, viewing the Rohingya crisis as part of a global issue), the capitalist countries' GOs and NGOs have contributed through the transnational network. As the FRC is one of the transnational NGOs, it has facilitated work for the Rohingya refugees in Bangladesh since 2017.

4.2. Theories of globalization and governance

Over fifty years ago, there was a dramatic change in the global political geography, which has is controlled by international geopolitics, particularly in regard to the formal and informal relationships between state organizations and non-state organizations. In the 1960s, the political geographies of different areas were reflected through electoral geographies and political parties. At the time, there were two perspectives regarding political geography. The first perspective looked at formal politics, including the government, democracy, elections, and transnational governmental organizations. However, formal politics are always connected to people at the community and individual levels (Sideway, 2001). On the other hand, informal politics always concerns grassroots level politics, which mainly focuses on personal lifestyles. Contemporary political geography always includes nationalism, social movements, citizenship, and national identity (Sideway, 2001, Cloke et al., 1999).

In the global governance theory, it has been argued that the global political geography establishes a relationship between two aspects of society, such as the formal and the informal. Transnational governmental organizations and NGOs are examples of formal organizations. The ISCG was mainly created as a platform for local and international NGOs to work together in humanitarian crises, and it is monitored by IOM, UNHCR, and other international agencies. There is a transnational network-based organization in Cox's Bazar District in Bangladesh called ISCG, Cox's Bazar District which mainly coordinates between Government of Bangladesh (GOB) and the local and international NGOs. One of the minor research questions that will be investigated is the following: What factors affect the FRC's cooperation with other agencies in Bangladesh?

4.3. Transnationalism theory

Three tenets have been established to explore transnational studies (Saunier, 2013, pp. 1–21). First, transnationalism involves establishing relationships between local people and an understanding of their social norms and values; such relationships should exist across borders through globalization. Second, transnationalism can exist both domestically and internationally. Third, transnationalism impacts personal, national, and regional issues worldwide.

Another point of view regarding transnationalism focuses on international relations in NGO networks for academic purposes. Local and INGOs form relations for humanitarian purposes and to promote global development; transnationalism allows them to establish transnational NGO networks (Ahmed and Potter, 2006).

"Transnationalism seems to be everywhere, at least in social science. That is, across numerous disciplines there is a widespread interest in economic, social and political linkages between people, places and institutions crossing nation-state borders and spanning the world" (Vertovec, 2009, p. 1).

According to Portes (1999), Vertovec (2009), Morgan (2017), Dunn (2005), Lima (2010), and Riedel (2017), three perspectives exist regarding transnationalism: the economic perspective, the sociocultural perspective, and the political perspective.

In terms of the political transnationalism focuses on reducing political violations and bilateral agreements between two or more countries. INGOs use this perspective to further humanitarian and global development (Portes, 1999; Vertovec, 2009; Morgan, 2017, pp. 3–20; Dunn, 2005, pp. 15–31; Lima, 2010; Riedel, 2017, pp. 7–27).

Risse-Kappen discussed transnationalism in terms of various aspects, including transnational capital and international trade, and explained that INGOs use transnationalism to engage and coordinate with one another (Risse-Kappen, 1995, pp. 7 – 8). As aforementioned, the Rohingya refugee crisis reached an extreme in October of 2017; as a result, the UNHCR and the IOM established an institution to coordinate local GOs and INGOs using the ISCG in Cox’s Bazar in Bangladesh, which is monitored by three co-chairs: the Resident Coordinator of IOM Bangladesh, the Resident Coordinator of UN Bangladesh, and the Resident Coordinator of UNHCR Bangladesh. The members include the ISCG, UN agencies, INGOs, Bangladeshi Rural Advancement Committee (BRAC), Action Contre la Faim, Médecins Sans Frontières (MSF), Save the Children, the ICRC, and the IFRC (Humanitarian Practice Network, 2018, pp. 5–6).

4.4. Transnational NGO network theory

Definition of NGOs

NGOs emerged in 1880 and focus on humanitarianism, global development, and environmentalism. For example, the Congress of Vienna was held in 1815 to abolish slavery. Dunant, a key contributor to the establishment of NGOs and the founder of the ICRC in 1859, explained that the ICRC could be used to serve those injured during battle (Eriksson, 2008, p. 1).

Mercer (2002) described NGOs as follows:

“Organizations that are officially established, run by employed staff (often urban professionals or expatriates), well supported (by domestic or, as is more often the case, international funding), and that are often relatively large and well-resourced. NGOs may, therefore, by international organisations, or they may be national or regional NGOs” (Mercer, 2002, p. 6). Technology is of key factor that influences how NGOs work together from around the world (Vertovec, 2009, p. 11).

As aforementioned, the term transnational NGO network originated from Keck and Sikkink in 1998 (Jordan and Tuijl, 2000). Transnational networks work within NGOs around the world; they also establish relationships between official political organizations worldwide. Transnational NGO networks include several actors: International and domestic NGOs and research and advocacy organizations, Local social movements, Foundations, The media, Churches, trade unions, Parts of regional and international intergovernmental organizations parts of the executive or parliamentary branches of government” (Keck and Sikkink, 1999, pp. 91–92). These actors are encouraged to work within NGOs and share the same rules, norms, values, and ethics in order to effectively handle global issues (Keck and Sikkink, 1998, pp. 1, 8). “Transnational approach some grassroots, networks, relations, identities approach towards globalisation” (Assmuth, 2017, p. 2).

The FRC is one of the oldest and most prominent humanitarian organizations; it has been in service since 1877. At the moment, the FRC is serving Bangladesh, Indonesia, and Ethiopia with the help of the BDRCS, the NRC, and the Danish Red Cross. The FRC is able to provide constant aid because of its agreements with other agencies based on the Geneva Conventions of 1949. Undoubtedly, the FRC is a transnational NGO (FRC News, 2018a, 2018b, 2018c).

5. Empirical Results

To collect the data necessary for this study, an email was sent to the FRC's International Department containing a list of questions. I only received one response from an FRC liaison delegate. This liaison delegate has worked with the FRC in Bangladesh for over three months in 2018, spent more than two years with the FRC in RS, and participated in numerous other missions. I also collected secondary data from various sources, such as journals, annual reports, the official ICRC YouTube channel, and newspapers. Methodological triangulation was used to combine mainly primary and secondary data so it could be described and analyzed in this study (Forbes and Heale, 2013). Methodological triangulation was used to collect the data for this research paper.

In the next paragraphs, I seek to learn the answers to minor research questions by applying methodological triangulation as a source of data.

5.1 Research question 1

What do the FRC's activities contribute to the Rohingya refugee crisis in Bangladesh?

The FRC immediately sent workers and supplies to Bangladesh to build a mobile hospital. The FRC International Operations and Programme Director, Kalle Löövi, stated the following in October of 2017:

"We must hurry. Together with the Norwegian Red Cross, we are sending a hospital and roughly 20–25 aid workers to the area. The first Finnish Red Cross workers will be travelling on Saturday and the Finnish portion of the hospital early this week" (FRC News, 2018d, para. 3).

As I already have pointed out that since the 1990s the global refugee crisis has been a global problematic issue. While I already have mentioned that after the 1990s for humanitarian and development perspective to emerge the NGOs and work the globally from two perspectives those are transnationalism and constructivism. However, my main concern regarding the transnationalism as a political perspective. At the same time, of course, in the recent crisis of Rohingya, I mean 2017' s Rohingya crisis in Myanmar from August to October in 2017, more than one and half million Rohingya Refuges influx to Bangladesh to survive. Besides, the FRC among the key Transnational NGO contributes for Rohingya as October in 2017. Most importantly, the FRC has built up on the Red Cross Emergency Hospital (RCEH) with 60 beds facilities and supported by BDRCS, NRC, CRC, IFRC, and other agencies. Additionally, the FRC was the leading position of the RECH and 22 delegated from FRC worked in the RCEH. Moreover, the main task was the RECH treat surgical care and obstetrics as well as the RCEH opening time is 24/7 I mean unstop treatment facility. Even from October to December in 2017, 12 000 patients were treated in RCEH (Finnish Red Cross 2018). Moreover, from October in 2017 to October in 2018, the main outcome the RCEH as below mentioned

"Since the hospital opened in October 2017, a total of 43,780 patients have been treated, 5,340 children have received psychosocial support at the child-friendly space, 2,211 surgeries were performed, and 511 babies were born" (Mayers, 2018).

5.2.Research question 2

What challenges do the FRC staff face in Bangladesh?

Most importantly, it has to need to keep in mind that although I already have pointed that Bangladesh just shifted to mid income country from low income country in April in 2018. For this reason, undoutly seemed from this research paper that the FRC staffs must face several challenges to work at Rohingya camps in Bangladesh. One the problems is to identify that local language one of the key problems for FRC staffs as most of the people can speak in Chittagonian or Rohingya language even local volunteers also lack of English proficiency as well as although eights translators are worked for RCEH staffs to deal for the Language issue but here also seem that lack of professional translators and skilful person.

Regarding the language issue while my interviewee responded as follows:

“The Red Cross Emergency Hospital (RCEH) employs some translators and volunteers who assist our international and local staffs in communicating with the refugees. Additionally, the BDRCS is our focal point for relations with local authorities.”

As the infrastructure is another problem for FRC staffs as roads are available even during the rainy season there might impossible walk on foot on the camps, supply and logistic issue another concern issue as there are only 2 warehouses available which can use the BDRCS/IFRC.

In fact, the internet facility needed as a common everyday life but in the Rohingya camps, Internet facilities are not available although IFRC Asia Pacific regional office also provided to deal the internet facility with 20mbs which can use Red Cross Red Crescent staffs, but other agencies’ staffs also concern issue about the internet. Also, 3G Robi internet one of the primary options to use the internet in Cox’s Bazar

As my interviewee answered about the security challenges in the following way:

“The security of our staff and patients is based on the acceptance and trust towards the Red Cross/Crescent movement by the local host and refugee communities. The Finnish RC and RCEH follow the IFRC security guidance, and the RCEH has 24/7 guard system in place.”

5.3. Research question 3

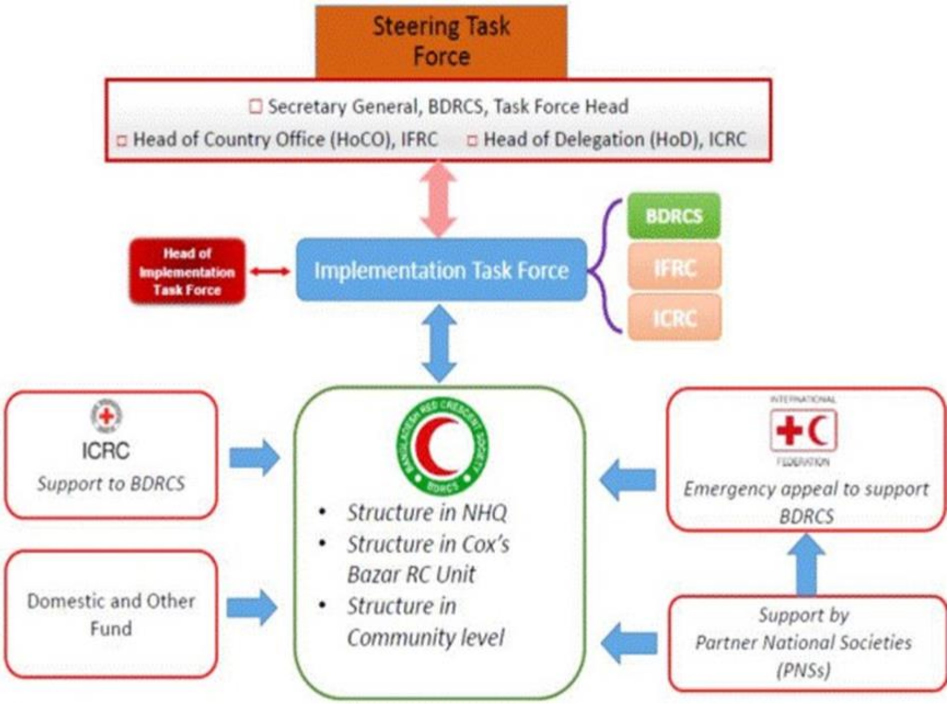
What factors affect the FRC’s cooperation with other agencies in Bangladesh?

As the previous answered to seemed that the FRC staffs have to face the several problems to work for Rohingya refugee in Cox’s Bazar. However, to solve the such kind of problems to establish the Inter Sector Coordinator Group (ISCG) in Cox’s Bazar on Bangladesh which is led by UN Bangladesh Resident representative, IOM Head of the mission of Bangladesh, UNHCR resident representative, Bangladesh. However, the main role of the ISCG is to ensure to cooperate between of 31 PNSs, BDRCS, IFRC, ICRC and local GOs-NGOs and other agencies. As the ISCG to facilitate the whole working activities are divided ten sectors. However, health one of them as the FRC focus on the health sector as led the RCEH. So, in the secretarial ISCG held in monthly meeting where FRC staff’s representative can share experienced and tried to solve the problems. Also, the BDRCS also tried to cooperate with local GO-NGOs and INGOs and other agencies. BDRCS has facilitated to coordinate for focusing on the Window Approach, in particular, 31 Partner National Societies (PNSs) continued to help in several sectors like translators appointed and technical support to FRC staffs.

To facilitate coordination between the BDRCS, the IFRC, the ICRC, local/international NGOs, local authorities, PNSs, and other agencies, a monthly meeting is organized and led by the BDRCS with support from the IFRC and the ICRC. Moreover, the BDRCS's one-window approach is an essential player in coordinating between all the stakeholders working to assist the Rohingya refugees in Cox's Bazar (Dahal, Hoegl, Letch, and Mäntyvaara, 2018).

Below, the one-window approach is illustrated through a chart so that the coordination between all stakeholders, external and internal, can be better understood.

Figure 2: One-Window Approach.

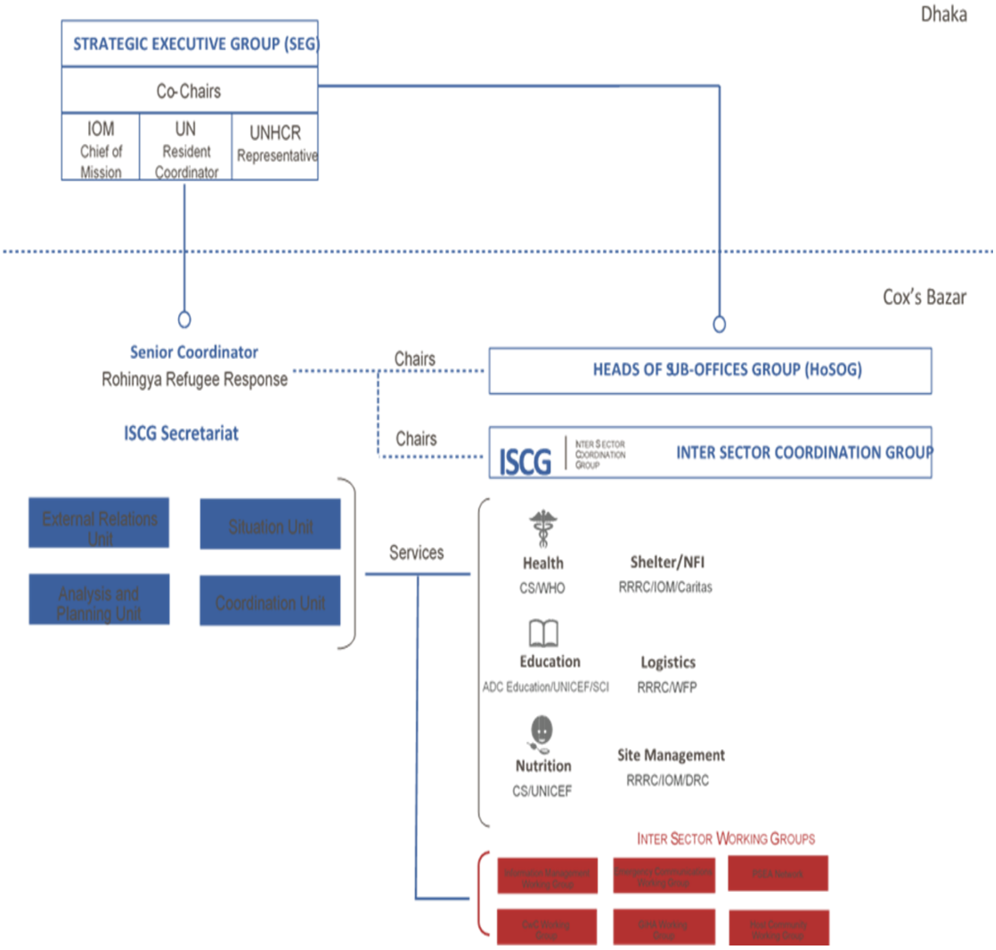


Source: Dahal, Y. P., Hoegl, J., Letch, J., and Mäntyvaara, A. (2018). Internal Review Bangladesh Population Movement Operation 2017, Final report 2018, p. 15 [Online] Available at http://adore.ifrc.org/Download.aspx?FileId=182300&.pdf [Accessed 10 December 2018]

"The inter-Sector Coordination Group (ISCG) is the central coordinating body for humanitarian agencies serving Rohingya refugees in Cox's Bazar, Bangladesh. These agencies are organized into 12 thematic Sectors and Sub-Sectors (e.g. Protection, Health, WASH) as well as Working Groups that focus on cross-cutting issues (e.g. Protection, Gender in Humanitarian Action, Communicating with Communities). ISCG's

Humanitarian Data. Exchange [HDX], portal features the latest data on the response." (Humanitarian Data Exchange, 2018, para. 1).

Figure 3: Structure of the ISCG



Source: Joint Response Plan (JRP) for the Rohingya. (2018b). Humanitarian Crisis: Food Distribution. [Online] [Accessed at https://www.unocha.org/sites/unocha/files/JRP%20for%20Rohingya%20Humanitarian%20Crisis%202018.PDF / [Accessed on 10 October 2018].

How does one cooperate with the ISCG? My interviewee stated the following:

"The Red Cross Movement is represented by the IFRC Head of Sub-Office in the monthly, strategic-level Heads of Sub-Office Meeting."

My interviewee also answer related to how necessary is FRC cooperation with local NGOs as follows:

"The Red Cross Emergency Hospital functions under the legal umbrella as the Bangladesh Red Crescent Society; in addition, most Red Cross Emergency Hospital staff is employed by the Bangladesh Red Crescent Society."

According to the Red Cross Response to Population Influx in Bangladesh (2018), the BDRCS is one of the leading humanitarian organizations in South Asia. The BDRCS has contributed to the Rohingya refugees in Cox's Bazar in Bangladesh since 1978. Further, the BDRCS cooperates with the FRC and other international agencies, as stated in the following:

"DRCS and its Movement partners - International Federation of Red Cross and Red Crescent Societies (IFRC), International Committee of Red Cross (ICRC) and 31 Participating National Societies (PNS) (Red Cross Red Crescent National Societies) - have since August 2017 been conducting a large-scale humanitarian response to deliver life-saving humanitarian assistance and services through multilateral and bilateral support" (Red Cross Response to Population Influx in Bangladesh, 2018, p. 6).

6. Conclusion

Since the 1990s, the number of refugees has increased around the world. In SEA, Myanmar has had the highest number of refugees since 1978, as the Rohingya have been stateless since then. When new citizenship was enacted in Myanmar in 1982, the Rohingya were not given legal citizenship, even though they were living in RS with citizenship status since the fifteenth century. As such, they obtained refugee status in Bangladesh, India, Pakistan, and Saudi Arabia in particular. Most of the Rohingya refugees have been living in Bangladesh; from August to October of 2017, between 600,000 and 700,000 Rohingya people escaped to Bangladesh to survive (Humanitarian Practice Network, 2018, p. 5; ISCG, 2018, p. 2). Since then, the Rohingya have been living in refugee status in several camps in Cox's Bazar in Bangladesh. Since Bangladesh changed from a low-income country to a middle-income country in April of 2018 (Taylor, 2018), the Bangladesh Government should be able to fulfil the basic needs of the Rohingya refugees.

Both international GOs and NGOs have made contributions to aid the Rohingya refugees. In 2017, the IFRC and the IOM called for an emergency appeal for the Rohingya refugees, and the Finnish Government donated 40,000.00€ to the Rohingya refugees (FRC, 2018; Ministry for Foreign Affairs of Finland, 2017). The FRC, the BDRCS, the NRC, the CRC, and other agencies focused their activities and funding on improving the health care sector, specifically by building the RCEH, a 60-bed hospital. The Rohingya refugee crisis began in 1978 and saw influxes in 1978, 1991–1992, 2012, and 2017 up until the time of writing this paper (2019).

From August to October of 2017, more than 1.5 million Rohingya refugees travelled to Bangladesh from Myanmar. The FRC providing aid in 2017 by establishing the RCEH in Cox's Bazar in Bangladesh. One of the key outcomes of the RCEH was that, from August of 2017 to August of 2018, 43,780 patients were treated. However, the FRC staff faces several issues, including language barriers, infrastructure problems, bad weather, a lack of internet facilities, and a lack of clean drinking water. The BDRCS used the One-Window Approach in an attempt to have many agencies work under the same umbrella. The ISCG also contributes to ensuring cooperation between all the stakeholders in Cox's Bazar in

Bangladesh. In January of 2018, Bangladesh and Myanmar signed a repatriation agreement; over two years, more than 600,000 Rohingya refugees returned to Bangladesh. Although this research paper was written in March of 2019, I was unaware of the agreement. It is unclear whether the Rohingya returned to Myanmar based on the repatriation agreement.

At this point, I strongly agree with the director general of the IOM, William Lacy Swing, who visited the camps in Cox's Bazar in July of 2018. He stated that he felt "unertainty about their future" (IOM Bangladesh, 2018, p. 1). From 1978 up until the time of writing this paper (2019), the Rohingya refugee crisis in RS in Myanmar is a global issue. The following headline speaks volumes: "Rohingya: End of a Race Amidst World's Silence?" (Quddusi, November 2016).

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CORPORATE SOCIAL RESPONSIBILITY AND FIRMS CREDIBILITY: A COMPARATIVE STUDY OF FAMILY AND NON-FAMILY FIRMS; EVIDENCE FROM PAKISTAN STOCK EXCHANGE

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Abstract

Corporate violations have drawn the attention of scholars and business analysts in the last decade. Although regulations regarding CSR practices prevail, yet organizations are reluctant in their implementation as it is perceived costly, thereby neglecting its long-term institutional benefits. The current study bridges the gap between application of CSR practices in a firm and its impact on market credibility. Further, the study also addresses seven dimensions of CSR in measuring its magnitude to retain the market credibility, reducing information asymmetry and enhancing a firm's loan accessibility. The study focuses on the non-financial firms listed at Pakistan Stock Exchange from 2009 till 2018. The results confirm that CSR practices enhance firms' credibility. Further, the comparative analysis demonstrates that family firms that are older, bigger in size, maintain low cash holdings and financial leverage, are risk aversive, having high asset tangibility due to their involvement in CSR practices than non-family firms. Managers and shareholders may use these results to publicize CSR in order to create more opportunities for financial accessibility which is further beneficial for making informed investment decisions yielding higher profits.

Keywords: Corporate Social Responsibility Practices, Market credibility, Information Asymmetry and Family firms

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1. Introduction

In recent times, great attention has been drawn by World Leaders and Young activists on the subject of environment protection, preservation and public involvement towards social responsibility (Michelon, Rodrigue, & Trevisan, 2019). The concept of CSR comprises of all such governmental and individual concerns. The CSR is not merely about active engagement towards social causes rather it is the impact caused by the countermeasures which are taken to eliminate such inadequacies. The CSR impacts similar to a snowball effect; as it descends down it transforms massively affecting all the fragments of the society resulting in well-being of the society and community at large. Recently, Forbes 2018 listed CSR scores of all the businesses across the globe on their CSR involvement and practice. Among them the highest scores were achieved by Corporate Giants like Apple, Microsoft, E-bay and Facebook; a CSR score of five (5), followed by the rest for instance Google and Wal-Mart with a CSR score of four (4).

Prior literature showed that in the last decade, many concerns regarding corporate transparency and social responsibility has arisen; these concerns are mostly due to past accounting scams and information misrepresentation (Khosroshahi, Rasti-Barzoki, & Hejazi, 2019). The fraudulent reporting and accounting scams results in loss of trust, reputation and a decline in market share. Since then, corporations have focused more on infusing greater information disclosure, clarity and accuracy into their communication with stakeholders (Christensen & Cheney, 2014) which results in greater public consideration. Previous studies demonstrated that firms practicing ethical business practices are more transparent in terms of their policies than others reflecting less information asymmetry (Guiso, Sapienza, & Zingales, 2015).The accurate information disclosure of such firms results in retaining stakeholders trust and confidence which leads to lower cash holdings (C.-H. Chang, Chen, Chen, & Peng, 2019). In this regard, the Sarbanes Oxley Act 2002 serves not only as a repercussion to corporate crime but also induce firms towards CSR activities (Angie Chung & Kang Bok Lee, 2019). Now firms are more involved in social activities like corporate governance, community service, environment protection, human rights, and developing good employee relation to create good market image that makes them more credible (Muhammad Shahid ullah & Mutakin, 2019).

CSR includes all socioeconomic activities that assist businesses in expanding their due market share (Jain & Jamali, 2017). CSR in financial and non-financial markets, as measured by, CSR scores or indexes, varies significantly over sectors and in a correlated manner across industries. A number of research studies examine empirically whether ethical component of businesses (CSR) is a profit-driven factor: are firms observing high profits ascribed to their engagement in CSR activities (Venkatesh, Mathew, & Chaudhuri, 2020). The literature has found ample evidence on CSR activities indicating it as a source of retaining market credibility (Maiorescu-Murphy, 2020). Yet, an adequate evidence for CSR; as a credibility factor is limited. This study must address, in particular, why firms engage in CSR activities, how CSR activities aid firms in credit accessibility and lastly, how CSR activities as credibility-function boosts firm’s information symmetry?

An emerging line of research addresses these concerns by investigating the impact caused by CSR activities on stakeholder's acumen. Jingyu et al., (2019) argued that stakeholders explicitly investors prefer those firms which are more engaged in CSR activities. Hence, firms which are more active in CSR activities significantly draw greater public attention. Helen Brown et al., 2018 allege a positive link exists between CSR and firms solvency; which is further debated by (Lee, Zhang, & Abitbol, 2019) in his research that CSR practicing firms are creditable among stakeholders.

While there has been more attention in the literature, measures regarding evaluation of CSR activities, a few studies have investigated only certain aspects related to CSR activities. For instance, (Barrena-Martinez, López-Fernández, & Romero-Fernández, 2019) examines the CSR activities on the basis of only five dimensions out of seven. Subsequently, CSR activities are measured by CSR index and its effect on firm's value has been explored. The author concludes that results are inconsistent as the computed CSR index does not take into account all the aspects related to CSR.

The paper contributes to the primary line of research on the benefits and costs of symmetric information moreover the impact of CSR activities on firm external financing accessibility (Crisóstomo, de Souza Freire, & Freitas, 2019) by providing evidence on how actively CSR practice can assist firms in making loan accessible reflecting firms fulfillment of promises made towards their respective stakeholders. (Flammer, 2015) demonstrate that the adoption of CSR practices is value enhancing. The possible reason is that firms highly engaged in CSR activities have a stronger reputation and an esteemed position in the market, thereby attracting whole lot of investors signifying greater public trust. (Lins, Servaes, & Tamayo, 2017) suggest that stakeholders perceive high CSR firms as more trustworthy in fulfilling their legal obligations towards their stakeholders than the low CSR firms. (Martínez & del Bosque, 2013) examination of business group affiliation demonstrated that family businesses engaged in incorporating CSR activities have a greater market share and value which yields in higher returns. Yet there remains limited evidence regarding how high CSR practicing firms are more prone to loan accessibility while retaining their market credibility. To the best of our knowledge, our study is one of the first to establish a causal link between CSR activities and loan accessibility, results in reducing firms' operational costs (Information Asymmetric costs and cash holding costs).

Our findings suggest an important motive for firms to retain information symmetry, to ensure corporate transparency making loan accessible which results in optimal financial decision choices. Furthermore, our results also suggest that by mitigating firm's information asymmetric costs, the effect caused by both internal and external financial indicators on firm performance and its market position can also be controlled to some extent.

The rest of the paper is distributed as follows: the section-II consists of the literature review, section III research methodology, section IV data collection and analysis and lastly section V contains implications of the study followed by its limitations.

2. Literarure Review & Hypothesis Development

2.1 Corporate Social Responsibility

CSR is a powerful tool to unveil the concealed agendas in organizations in any developing country. Fundamental token philanthropic gestures have recently extended and industrialized into the mainstream corporate plan. CSR is now becoming embedded in firms practice and is not just perceived as an altruistic burden but as creating sound business sense and for providing a chance to achieve a premeditated competitive advantage (Xia, B and Liu, Y., 2018).

CSR includes not only firm's legal and economic obligations but also certain social responsibilities which extend beyond these obligations (Wood, 2018). Literature provides us with the evidence of multiple concepts regarding the understanding of CSR. (Fallback and Hebraic 2017) elaborated CSR as the obligations of businesses to pursue their policies to make such decisions, or to follow those lines of actions which are desirable in terms of objectives and values of the society. The literature also demonstrated that the concept of CSR has also been opposed as well by a well-known economist Milton Friedman who argued that social issues were not the concern of a capitalist as his concern is seeking higher profits resulting in shareholders wealth maximization. Later on, the concept of CSR was advocated by Mackerel & Bauer, (1976) stated that CSR emphasizes on motivation rather than performance.

Various schools of thoughts prevail among institutions and scholars regarding CSR have been proposed (Archie B. Carroll, 2012; European Commission, 2011: World Business Council for Sustainable development, 1999, 2015), classifying CSR into three broad categories ESG namely environmental concerns, social responsibility and corporate governance. Both environmental concerns and social responsibility further comprise of four specific dimensions including community, product, human rights and employee relations (Folk. 2016), while corporate governance has been recognized as a distinct dimension consisting of managerial obligations to take such actions which protects and improves the welfare of the society (Davis and Stromboli, 1975). The definitions of CSR dimensions are shown in the table attached in the appendix.

2.1.1 Overview of Global CSR Regulations and Guidelines

After describing the subject matter, it is important to point out the universal doctrine reflecting to CSR, which was created as an ethical or moral issue of corporate behavior is received by the regulations documented in the UN charter for Human Rights. The UN charter for Human Rights laid the foundation for businesses across the globe serving as a preemptive for CSR guidelines. The preliminary guidelines are as follows: (1). Businesses should support and respect the protection of internationally proclaimed human rights within the scope of their influence. (2) Business should be certain that they are not complicit in human rights abuse. (4) Businesses should uphold the elimination of all forms of forced and compulsory labor. (5, 6) businesses should uphold the abolition of child labor and discrimination biases. (8) Businesses should undertake initiatives to promote greater environment responsibility. The aforementioned guidelines are adopted by corporate giants across globe including Microsoft, Alibaba and E-bay operating in US and

UK (Kwak, Zhang, & Yu, 2019). With the evolving times, these guidelines have been rectified and ameliorated as globally attention has been shifted from profit seeking mindsets to altruistic mindsets.

Observing CSR regulations from western to eastern part of the world; the financial and non-financial sectors of Bangladesh stock exchange provide assistance to diverse groups, state beautification and aids in patronizing cultural events (Chowdhury, 2018). Likewise, the Tata Motors and the Reliance Industries of India focuses on empowerment through girl child education and providing advanced medical facilities to visually challenged people (Kumar, 2019). The focus of companies viewed as a responsible citizen of the state as the power or obligation dictated to them by the Constitution of Pakistan (1973) under Article 38 urges them to play their due role in social upheaval. In the last decade, many businesses in Pakistan are focused on their social responsibility for instance, Nestle Pakistan and DG khan Cement focus on spending a share of their annual earnings on important causes like child education and health (Ahmad & Khan, 2019). In relation to the earnings component the clause 135 of the companies bill (2013) states that it is mandatory for companies with revenue greater than $200 million or net worth corresponding to $100 million to spend 2% of average profit from last three years towards CSR activities.

2.1.2 Corporate sector outlook on CSR

Corporate sector views CSR whole differently as it is more engaged in CSR activities due to multiple benefits, prior to be viewed as a cost or constraint to the organization. However, in the last decade it has proved to be a source of opportunity, innovation and competitive advantage (Michael E.Porter and Mark R Frames, 2006). There are numerous reasons underlying organization motivation for engaging in socially responsible endeavors. First, firms may have altruistic intentions, to work for the welfare of the community as a whole and to be a part of good global citizen chain. Secondly, firms engaging in CSR activities believe that such activities assist them in retaining a good public perception (Kim et al., 2013) that consequently, helps to recruit, motivate and retain employees (Geoffrey et al., 2010). Thirdly, CSR activities help firms in attracting greater customer share due to their market credibility (Martinez et al., 2013). Fourthly, firms practicing CSR focus more on environmental concerns which leads to reduction in production costs (Landal et al., 2010). And lastly CSR is viewed as an integral part of a company's risk reduction efforts. CSR serves as an effective lever in easing legal or regulatory constraints. Furthermore, it also reduces the chances of lawsuits and damage to the firm's reputation (A Stitch, 2006).Further research is needed on the implication of CSR in non-financial corporate sector (Malik & Kanwal, 2018) and its influence on the decision making of shareholders-managers which is the scope of the current study. Thus, present study demonstrates all of the seven dimensions related to CSR by analyzing the following sub-dimensions: transparency, support for education and housing, environment protection measures, labor rights, anti-discrimination measures, employee engagement, superior quality of products and social concerns. Furthermore, this research also focuses on the consistent activities of socially responsible firms in contrast to non-socially responsible firms of all the listed non-financial organizations at PSX. Consequently, present study highlights the dire need of CSR practices in underdeveloped countries like Pakistan.

2.2 CSR and credibility

The concept of CSR has risen to unprecedented popularity throughout the global business community during the last decade (Melanie et al., 2019); which is assumed as persistent measures taken by businesses to work for the well-being of all its stakeholders. Jones (2018) argued that firms strongly committed to CSR retain credibility, trust and cooperative relationship with their stakeholders (Chang & Sheng-Cyan Chen, 2019) which results in attaining competitive advantage (Jingo Bon-Kim et al., 2018). Previous studies on CSR have confirmed that a nexus exists between CSR engagement and corporate credibility (E Baraza Die et al., 2017).Mostly revealing positive relationship between credibility and CSR practices (Kim, Li et al. 2018). The advancing CSR practices in the corporate sector helps in attracting en-bloc of investors because of high credibility factor. The credibility analysis conducted by (Ran Bhang & Hezbollah Freezable., 2018) by computing corporate credibility index CCI stated that corporate credibility is positively correlated to CSR activities (Ba, Chang et al. 2018). Ran Bhang (2018) reported that 50.4% of firms have high CCI scores while the rest 40.9% have low CCI scores. Based on these CCI scores the performance with respect to firm's reputation in the market can also be measured. The high corporate credibility index score is a reflection of firm's high reputation in the market both in the eyes of its suppliers and investors as well as customers. The firm with high CCI score attracts en-bloc of investors both institutional as well as individual.

Prior literature demonstrated that CSR is the most scrutinized topic in the field because it is supposed to benefit not only corporations but also other stakeholders (Melanie et al., 2019). The concept of CSR dates back in 1953, where this concept was introduced for the first time by Howard Bowen. However with evolving times, the need for CSR practices became more important that is why companies have advocated for the concept of CSR in the last decade. The majority of CSR related studies compared it with credibility or public trust (Wu 2019) and has demonstrated a positive or neutral relationship with CSR activities. A detailed analysis conducted by Wen et al., (2019) on the effectiveness of CSR activities coupled with other factors in measuring the credibility of CSR practicing firms. The results state that a positive association is found between CSR and firms credibility. Recent studies demonstrated that social responsibility and credibility are not dichotomous mutually exclusive concepts rather they are interlinked (Chan, Gargantuan et al. 2019). Moreover, (Wen et al., 2017) argued that generally being good should lead to appear good but the results state otherwise. For instance, if a firm practicing CSR is carrying out more philanthropic activities; signifying that specific firm is doing well but the public perception might state otherwise. This difference in perception might be caused by false media coverage, which not only reclines firms performance in the stock market but also abates market share.

H1: CSR practicing firms are significantly credible than non-practicing firms

2.3 CSR and Loan Accessibility

Salia et al., (2018) documented that financial access and management are both distinct from one another; former concept refers to the possibility that individuals or enterprises can access financial services whereas the latter concept emphasizes on its control. Since post-Enron era firms have been striving in accessing and generating more sources of finances from external sources while retaining their credibility due to increase public distrust (Kreft, 2019). Since then firms have been incorporating such ways into their business operations to retain their market credibility and confidence which has been an arduous task. For that firms are more engaged in social and philanthropic activities in order to retain their market credibility. The pecking order theory of the capital structure demonstrates that aids firms in prioritizing their choice of finances both internal and external for their capital expenditure stating that the foremost choice for finance is the internal source then the external sources.

Tan (2018) argued that the connection between CSR and financial accessibility is influenced by the level of national partner direction. The study highlighted the following findings: First that nations with better CSR application and performance are more credible as the default risk is less likely to happen which favors lower credit costs in more partner situated nations than are their partners in less partner arranged nations. Secondly, this analysis adds to the extant literature on CSR by featuring the significance of national institutional conditions in deciding the performance related outcomes of CSR practices.

Sylvia et al., (2019) comprehends the impetus behind conducting this research on the concurrent connection between CSR and the executive’s income in banking industry via two intermediaries to quantify earnings management: credits misfortune arrangement and security acknowledged additions and misfortunes. Though to gauge CSR, they utilized the aftereffect of substance examination dependent on agenda created utilizing GRI 3.1. The outcomes demonstrate that there is a synchronous connection between non-vital social obligation and income the executives in banking industry, which are commonly beneficial outcome. In any case, they don't locate any concurrent relationship of key CSR and profit the board. They just archive one direct affiliation which is board’s income influencing vital social obligation, though vital CSR does not have any noteworthy relationship with profit the executives are seeking.

Former studies revealed that firms observing market frictions may avert them from funding a desired investment project. The firms inability to obtain external finances may be due to credit constraint, inability to issue equity or illiquidity of assets (Ojikutu et al.,2017).Prior studies revealed that capital constraints can lead to lower profits (Stein, 2003), consequently due to descending stock market performance. Prior studies also revealed that firms engaging in CSR activities face lower capital constraints (Beiting Cheng et al., 2015) resulting in more investments and attainment of goodwill among its stakeholders. The analysis conducted by (Beiting Cheng et al., 2015) comprised of computing KZ index which serves as a measure of capital constraint. Despite KZ index, SA index (Hadlock & Pierce, 2010) and WW index (Whitted & Wu, 2008) were also employed as a capital constraint measure. The results suggested that CSR practicing firms get easier access to external finances than non-practicing ones because of strong market position.

H2: CSR practicing firms have significant access to finances than non-practicing ones.

2.4 CSR and Information Asymmetry

Recently, relative studies have addressed the component of transparency within CSR (Low and Siegel 2019), moving the research focus from the well-examined question of ensuring transparency in firms including both large and small medium enterprises to the sole concept of CSR. The role of transparency specific to CSR which was restricted to accountability and openness has been moved to the fore, suggesting that implicating such policies reflects good corporate governance which is a subset of CSR. However, understanding the cost impact on firm finances of possible transparent policies and measures (das Neves & Vaccaro, 2013), is still blurred.

Few empirical studies (Kaal, 2019) attempted to address the problems related to high information asymmetry that is the costs associated with it are also likely to rise. Only the impact on cost due to high information asymmetry was considered in this study, implicating that the firm having high information asymmetry has higher costs, this postulate is consistent with the theory of information asymmetric. In economics, the theory of information asymmetry is a subset of the contract theory (1960's) which postulates that the information asymmetry is considered in the context of agency problems; which results in increasing information asymmetric costs. High information asymmetric costs indicate multiple problems such as low transparency is being retained by the management and higher agency conflicts leading to higher agency costs which occur due to mismanagement according to the agency cost theory.

Prior literature demonstrated that CSR performance results in information symmetry. Cui et al., 2018 argued that CSR and information asymmetry are empirically associated. And for that multiple proxies have been used in the literature for measuring information asymmetry (Amihud 2002). Yet (Coën and de La Bruslerie 2019) managed various firm characteristics while finding out the relationship between CSR performance and information asymmetry. This study highlighted the following findings: First, the CSR and information asymmetry connection is enhanced in high hazard firms because of director's endeavors to assemble a decent notoriety. Secondly, the CSR commitment is contrarily connected with reputation hazard measure and lower anticipated estimation of reputation risk is decidedly connected with lower data asymmetric measures. These findings are consistent with the stakeholder's theory considering CSR engagement as a measure to build and maintain firm reputation consequently enhancing the information symmetry.

Cheung 2018 located that both positive and negative CSR execution reduces information asymmetry. In addition, he found out the impact of negative CSR execution is a lot more grounded than that of positive CSR execution in diminishing information asymmetry. Furthermore, the impact of educated financial specialists on the CSR execution-asymmetry connection was also analyzed. He found out that the negative relationship between CSR execution and offer approach spread abatement's for firms with an abnormal state of institutional financial specialists contrasted with those with a low degree of institutional speculators. This finding recommends that educated speculators may abuse their CSR data advantage. By and large, these outcomes recommend that CSR execution assumes a positive job for financial specialists by diminishing information asymmetry and that administrative activity might be fitting to relieve the antagonistic choice issue looked by less-educated speculators.

(Attig, El Ghoul et al. 2013) observed that firms engaging in CSR practices are more likely to disclose the information related to their CSR and other practices than the rest consequently making them more transparent in nature. Researchers have empirically proved (Jinhua Cai & Hoje Jo, 2016) an association between CSR activities and information asymmetry by investigating their simultaneous and endogenous effects. For this regard, multiple proxies have been utilized to investigate the effect of information asymmetry; first, the spread is used as a proxy for information asymmetry. The bid-ask spread is based on the dynamic panel system generalized method of movement GMM (Blundell & Bond, 1998). Second, Amihud's (2002) price impact measure was used defined as daily price response associated with 1$ of a trading volume.

And lastly dispersion is utilized which represents the annual average of monthly dispersion of analysts' forecasts of the current fiscal year EPS available up to the given month, scaled by the absolute value of mean forecasts dispersion of analysts' forecasts. According to (Zhao et al., 2018) dispersion means difference in the investors opinion. A combination of time series and cross-sectional panel data a sample consisting of 15,700 firms from year 1991-2010 was used. All these proxies were used as a measure of information asymmetry which leads to the following findings more transparent firms tend to reduce information asymmetry between firms and its stakeholders as evident by a research conducted by Ojikutu et al., (2017). The results suggested that due to transparent policies adopted by CSR practicing firms, the magnitude of information asymmetry is low.

H3: A relationship exists between firms information asymmetry and CSR activities.

2.5 CSR and Cash Holdings

CSR practicing firms are less susceptible to methodical hazard because of more noteworthy reputation in the market (Scherer, 2018). Lower methodical hazard may increment or lessen cash holding. Albeit low methodical hazard initiates firms to diminish their cash holdings, it additionally instigates firms to hold a short obligation development structure, with higher renegotiating dangers that higher money property may relieve. The organization perspective on CSR contends that settled in administrators in a firm with solid corporate administration may utilize CSR exercises to intrigue with partners so as to get higher administrative tact (counting money) to extricate private advantages. In any case, the corporate administration job of CSR suggests that CSR is additionally successful in lessening the office issues related with the money property choice. They set up the constructive outcome of CSR on money property by means of the efficient hazard channel is vigorous, while the impacts of CSR by means of the other two channels are definitely not. These discoveries are strong to various estimation strategies and elective proportions of money possessions, CSR, dangers and corporate administration.

(Lu, Kozak, Toppinen, D'Amato, & Wen, 2017) documented whether CSR reports address the issues related to increments in real money property. They found out that the issuance of an independent CSR report expands the minimal estimation of cash holding and this impact is directly linked with higher information symmetry. The outcomes propose that data in CSR reports can encourage checking and consequently actuate progressively effective utilization of cash holdings.

(M. J. Chang et al., 2016) argued that CSR engaging firms employ cash reserve as a commitment tool to fulfill their obligations towards their stakeholders. The prevalence with which these commitments are fulfilled depends mostly on stakeholders expectations (Silva, Nuzum, & Schaltegger, 2019). The expectations level reaches beyond the standard, results in higher satisfaction among firm's stakeholders. Additionally, the financial distress acts as an indicator of stakeholder's satisfaction, firms' liquidity, capital constraint and market performance. Research conducted by (Golmakani & Fazel, 2011) suggests that financially unconstrained firms have high CSR engagement due to large cash reserves. Recently, (Chae & Park, 2018) investigated the hybrid role of cash holdings in fulfilling stakeholder's commitment and in determining firm's liquidity. The ratio of cash and short term investments to book value of assets was used as a measure of cash holding. For estimating the value of cash (Faulkender & Wang, 2006) model was employed. The findings revealed that cash holdings due to active CSR engagement of firms moves in a parallel direction. Moreover, the results suggested that CSR practicing firms are less financially constrained leading to low cash holdings.

H4: There is a significant relationship between cash holdings and firms engaging in CSR activities.

2.6 Credibility and Information Asymmetry

Theoretically, two opposing views emerge as crucial to the discussion regarding public trust and transparency of socially responsible firms in the corporate sector. The first view is supported by the stakeholder's theory (Ian Mitroff, 1983) which illustrates that a firm is bound to work for the welfare of all its stakeholders. In accordance with this theory, a firm engaging in CSR activities influences more customer retention than non-CSR practicing firms (Wilkinson et al., 2016). Contrarily, the second view is advocated by the information asymmetric theory which elaborates that CSR aids firm in maintaining transparency (Carnevale, Mazzuca, & Venturini, 2012).

The transparent policies adopted by businesses reflect effective internal control. Besides (Lyon & Maxwell, 2011) argued that firms exercising CSR practices timely disclose information which helps in increasing earnings quality. Such timely information disclosures and improved earnings quality increase firms' transparency, which, in turn, reduces information asymmetry and consequently increases firm's credibility (Clarkson et al., 2018).

Moreover, Brown et al., 2007 examined the two potential components through which divulgence quality is required to lessen data asymmetry: (1) changing the exchanging motivating forces of educated and clueless financial specialists so that there is moderately less exchanging by secretly educated speculators, and (2) decreasing the probability that speculators find and exchange on private data. The outcomes demonstrate that the negative connection between revelation quality and data asymmetry is basically brought about by the last system. While data asymmetry is contrarily connected with the nature of the yearly report and speculator relations exercises, it is emphatically connected with quarterly report divulgence quality. Moreover, this examination guess and find that that the negative relationship between revelation quality and data asymmetry is more grounded in settings described by larger amounts of firm-financial specialist asymmetry.

Helland (2007) investigated the outcomes of bordering a symmetry gathering to a factual model. Gathering activities are first instigated on the example space, and after that on the parameter space. It is contended that the correct invariant measure prompted by the bunch on the parameter space is a characteristic non-instructive earlier for the parameters of the model. The allowable sub-parameters are presented, i.e., the sub parameters whereupon gathering activities can be characterized. Equivariant estimators are comparably characterized. Circles of the gathering are characterized on the example space also, on the parameter space; specifically the gathering activity is called transitive at the point when there is just one circle. Believable sets and certainty sets are appeared (under right invariant earlier and accepting transitivity on the parameter space) to be equivalent when characterized by passable sub-parameters and built from equivariant estimators. The impact of various decisions of change gathering is outlined by models, and properties of the circles on the example space also, on the parameter space are examined. It is contended that model decrease ought to be obliged to one or a few circles of the gathering. Utilizing this and other characteristic criteria and ideas, among them ideas identified with plan of tries under symmetry, prompt joins towards chemo-metrical expectation strategies and towards the establishment of quantum hypothesis.

H5: There is a significant relationship between credibility and information asymmetry of CSR practicing firms.

3. Descriptives

The summary statistics of this study involves the descriptive statistics of all the variables which include the Mean, Standard Deviation, Skewness, Kurtosis and number of observations. Furthermore, skewness and kurtosis values yield that data has observed normality problems which has been further confirmed by conducting panel data assumption tests extrapolating that the problem of heteroscedasticity exists. The extreme outliers were detected which lead to the problem of hetroscedasticity. The descriptves and correlation after winsorization are shown in the table below.

4. Correlation

The table shows the correlation of all the respective variables with the variable of interest, the measure of credibility, loan accessibility and cash holdings are highly correlated with the CSR activities, while information asymmetry is negatively correlated. The mean value of z-score for CSR firms is 1.91 and that for non-CSR firms is 1.632, which means that the z-score for CSR firms is high, i.e. they are more stable. The difference between the two groups of firms is statistically significant as indicated by the t-test value of -2.351 and Wilcoxon t-test value of -2.259. Since that t-values are greater than 1.95, the corresponding p-values are less than 5%. The mean value of cash holdings for CSR firms is 0.055 and that for non-CSR firms is 0.034, which means that the cash holding for CSR firms is high, i.e. they are more stable as such firms are reinvesting and regaining more than their counterparts. The difference between the two groups of firms is statistically significant as indicated by the t-test value of -4.594 and Wilcoxon t-test value of -4.885.

All the performance indicators including net profit ratio, return on assets and price earnings ratio are positively c orrelated with CSR index, the return on assets, earnings per share and price earnings ratio of CSR practicing firms are 0.024, 2.73 and 16.493 times more than non-practicing firms which reflects that CSR practicing firms have sound performance than their counterparts.

Among growth and risk indicators, sales growth and market to book ratio is highly correlated with CSR whereas, earnings volatility is negatively correlated. Comparatively, a significant growth of 5.6% has been observed in firms practicing CSR while 5% growth has been observed in non-practicing firms.

The Firm characteristics including firms Age and Quality are negatively related to firms CSR activities while CSR activities showed a positive relation with firms size. Greater firms size suggests that longer such firms are involved in CSR activities.

The CSR activities are positively related to Financial Market Indicators including Interest Coverage ratio, tax ratio and credit ratings, while negatively related to firms financial ratio. Indicating that CSR practicing firms attain a firm position in the market due to their credibility as compared to non-practicing firms.

CSR activities are positively related to regulation and median industry growth while negatively related to median industry leverage. Lastly, CSR activities are negatively related to the economic indicators. Comparatively, the CSR practicing firms are performing well in terms of their market position, firms internal position and growth as the difference between these two group of firms is statistically significant as indicated by the t-test values which are greater than 1.95 and the corresponding p-values which are less than 5% except for book and median industry leveraaged.

4.1 Tobit and Probit Regression

As CSR our dependent variable is censored, we apply TOBIT regression models in the first instance,the TOBIT regression model (Tobin 1958) is commonly used in studying cases of censored data. If the values of the dependent variable in some of the observations are grouped at a limiting amount, which is commonly zero, TOBIT regressions become more powerful than other regressions, since they make use of all observations regardless of whether they are at the limit or above. This distinguishes the TOBIT regression from other regressions that estimate the best fit only based on values which lie above the limit (McDonald and Moffitt 1980).

The TOBIT model equation is formed as follows:

$yt=Xt\beta+ ut$ if $Xt\beta+ ut>0=0$

If $Xt\beta+ ut\leq 0$

t=1,2,⋯,N

where N denotes the number of observations; y t denotes the dependent variable at time t; X t denotes the independent variables at time t; β are the coefficients, and ut represents the error term (McDonald and Moffitt 1980).

The results of the Tobit model suggests that the coefficients for credibility and cash holdings are statistically significant whereas information asymmetry and loan accessibility are insignificant and unable to explain the relationship with the dependent variable. The number of observations are 2931 (2565 are right censored and 366 are left censored) as outliers were detected in data through histogram which were later on treated through winsorization. Furthermore, among the control group variables earnings volatility, age, market to book, market leverage and median industry leverage showed a significant relation with the dummy variable. While the rest observe no relation with the dummy variable

The results of the probit regression demonstrate that a significant and positive relation exists between credibility and cash holdings of firms involved in CSR practices. Insignificant relation has been observed of the dummy variable with information asymmetry and loan accessibility.Among the control group variables some have observed including sales growth and market to book ratio a positive and significant relation with the dummy variable. The pseudo R square for probit is less as compared to tobit, whereas, the AIC and BIC both are lower for tobit regression as compared to probit suggesting that tobit model is of higher quality as less information has been lost.

4.2 Study Contribution

The study offers threefold contribution to the Corporate Finance and CSR literature. First, it attempts to examine empirically how CSR activities aid firms in retaining market credibility. A complete, comprehensive overview of all the CSR dimensions used in the non financial market is presented including good governance policies, employee relations, human rights, environment protective measures and superior quality products), and useful insights are obtained regarding CSR activities. Firm CSR activities were thoroughly analyzed to the extent with which firms are engaged in such activities comprehensively, and in its respective dimensions explicitly. Furthermore, firms CSR practicing frequencies were recognized signaling the need to progress from an exclusive society into an inclusive one.

Second, the research adds to the scarce literature on Pakistan’s CSR practicing firms as a credibility function. Globally CSR has become a touchstone of corporate trust, contrarily in the developed countries like Pakistan it is still a buzzword for most of the organizations and individuals (Canh, Liem, Thu, & Khuong, 2019) but a paradigm shift has been observed in the recent years. Surprisingly, Pakistani market has been a focus of only few papers for instance, (Ahmad, Naeem, Hasan, Arif, & Ur Rehman, 2019) have covered it within the context of Pakistani banks, while other authors refer to other Asian countries (Weerasinghe et al., 2019).Research into the non-financial market is necessary as it comprises of almost two-third of the Pakistani stock market and is growing tremendously.

Third, this study upgrades the existing research by addressing the CSR activities of the number of CSR dimensions applied and its potential relationship with the credibility and loan accessibility measures. Finally, the paper offers novel methodological approach for studying CSR activities and its impact. For instance, a difference in difference approach has been applied to address the effect of credibility, loan accessibility and cash holdings on CSR activities.

5. Implications

5. 1 Theoretical and Practical

The study has all theoretical and practical implications. Foremost, from the theoretical standpoint our results represent an advancement of the current literature on the relationship between CSR and loan accessibility by dint of firms credibility as a predictor variable besides loan accessibility and firm cash holdings which has heightened the relationship among all the variables. Therefore, these results enable a more nuanced interpretation of this relationship. Moreover, the results suggest that scholars should explore an additional variable that may provide a more realistic representation of this relationship. This paper investigates not only whether CSR activities positively or negatively affect firms loan accessibility measures and opportunities but also in what context CSR activities positively or negatively impact firms cash holdings. By doing so, this study provides well-defined management implications, useful insight and advice to businesses within CSR framework. Moreover, this approach could address the inconsistent results in the literature regarding the impact of firm CSR activities on its credibility, loan accessibility and cash holdings. Therefore, the authors believe that the approach utilized in this study represents an important contribution to the literature.

This focused research effort offers a detailed insight into impression of social responsibilities from the perspective of CSR activities. In particular, an overview of specificity of CSR dimension has been provided, with important practical implications. Empirical evidence demonstrates the usual dimensions related specifically to CSR adopted and implemented by the firm that have been formed by revising CSR concept infinitesimally, and how they assist firms in accessing credit from the financial institutions.

5.2 Managerial Implications

The research findings may serve as a basis for managers making decisions on the selection and implementation of CSR dimensions which are of supreme importance to the firms in retaining their dire market reputation. In other words, they may serve for selecting the CSR dimension which they want to focus on or avoid, based on the impact caused by it on firms credibility. The paper offers a better practical understanding of how financial institutions perceive CSR practicing firms and lend them loan due to their engagement in such activities.

Moreover, by recognizing differences in the application of CSR dimensions by businesses the research findings may be useful to investors, in making elite choices regarding their future investments and making informed decisions in choosing an organization to which they want to entrust their money. A recent study from Oxford University published in Harvard Business Review (2018) disclosed that more than 80% of mainstream investors now consider environment, social and governance ESG factors while making investment decisions. Globally $22.89 trillion of assets are being professionally managed under responsible investment strategies and the numbers are growing at an impeccable pace in CSR market thus, can present a useful reference point for both researchers and practitioners in their understanding of CSR activities. However, social responsibility is well enforced globally and has become quite a norm in the Pakistani market (Ameer & Khan, 2019). We should not neglect the issue of drastic climate change, which affects the entire community, offering noval opportunities for businesses to expand their CSR horizon. According to (Kouloukoui et al., 2019) climate change trigger a positive response by the corporate sector. As the business world, align its beliefs and core values with emerging social problems, thereby improving CSR performance and credibility consequently attracting long-term investors as well.

5.3 Limitations and Suggestions for Future Research

The contributions discussed above should be explained and generalized in the light of the following study limitations; this study is that in pairwise correlation a high correlation in Return on Assets of 92.4% has been observed. Return on assets has been treated as a control group variable which is present in the baseline model. Thus, a variable of such high correlation to be included in a model is not useful as it will hinder the relationship among other variables.

Apart from this Price impact measure has been treated as an information asymmetry measure, due to the unavailability of daily bid-ask prices, daily quotations including high, low, close, open price, volume and return has been used instead. This study is focused on the span of last decade, post Enron period where corporate scandals were on rise making it difficult for firms in reviving their credibility.

The authors recognized the criteria followed by firms in practicing CSR activities, which were later analytically tested and eventually used for studying its impact on the predictors. Due to different set of strengths and concerns while composing CSR score, this study has noted the issue of variance observed in strength and concerns data set, which keeps on evolving with time as few strength and concerns hold supreme importance in the managers perception though they may not be synchronized with the customer perspective. The authors therefore used multiple set of measures for calculating CSR activities comprising of CSR score, index and also treated as a dummy variable. However, a more clear delineation of different CSR competitive strategies is needed in the future to further increase the scientific rigor and validity of CSR based research efforts.

The research refers to a period post global economic recession; this poses the question of possible different results in other circumstances not affected by the crisis in CSR perspective. A time frame of this study offers indicative results, but presented findings should be further validated across a large time period including till 2020 as it has been predicted by some analysts that a global recession will hit in 2020. Specifically, it would be interesting to examine how ongoing global economic trends effect at the level of Pakistan's economy.

Significant efforts made recently already started to boost CSR as part of sustainable competitive strategy (O'Brien, 2001). As a result, not only we might expect to see more CSR activities in practical grounds aiding firms in informed decision making process. A study conducted on the data set exclusively about CSR activities is potentially biased towards non-profit organizations like NGO's in practicing ethical duties towards the society, therefore bringing into question its generalization at firm level especially in the context of non-financial companies at Pakistan Stock Exchange PSX. Although, CSR as a concept has evolved globally (Visser, 2010) creative and altruistic mindsets foster different solutions to the problems observed in across regions and countries. This rich diversity of approach with business ethics that incorporate ESG considerations in CSR represents a global opportunity for industry players to learn from each other by sharing experiences (Global Sustainable Investment Alliance, 2013). However, the research offers new findings with a focus on an important vast CSR market, and it is aligned with recent calls for such an approach very few studies have started to reveal the important question of CSR as a competitive strategy. More research needs to be done to examine the role of CSR as a fundamental business practice and how it is related to the performance of the non-financial companies.

Finally, this research may serve as a guideline for investigating whether CSR serves as a competitive strategy and how it assists firms in accessing external finance. For instance, it would be interesting to validate and extend recent research showing a positive link between implementation of CSR activities and firm gaining prominent position in the market besides its counterparts operating in the businesses.

6. Conclusion

The study confirms the role of CSR activities in increasing firms credibility, loan accessibility, in reducing firms cash holdings and information asymmetry. The correlation analysis confirms the above mentioned relationship. In spite of correlation, the regression analysis further justifies the relationship among these variables due to CSR activities. The objectives that were set initially are achieved. Furthermore, on hypothesis testing it was confirmed that significant relationship exists among all the variables. The study considers the whole population of all 410 listed non-financial companies at PSX from 2009 till 2018. The final sample size was reduced up to 388 firms. Our findings suggest that a significant relation exists. However, an increasing trend in firms involvement in CSR activities has been observed due to corporate sector engagement in ethical business practices after prominent corporate scandals in 2009

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	CSR FIRMS					**ALL FIRMS**				
Variables	**Freq**	**Mean**	**Std. Dev.**	**Skew.**	**Kurt.**	**Freq**	**Mean**	**Std. Dev.**	**Skew.**	**Kurt.**
CSR Dummy	3592	1	0	.	.	3962	0.907	0.291	-2.795	8.811
Z score	3561	1.91	2.171	1.082	3.899	3928	1.884	2.16	1.091	3.949
Loan Accessibility	3561	0.19	0.188	1.232	3.828	3928	0.194	0.192	1.21	3.699
Amihud	3016	0.119	0.394	3.569	14.291	3288	0.125	0.405	3.466	13.516
Cash Holdings	3561	0.055	0.084	1.869	5.371	3928	0.053	0.083	1.943	5.684
NPR	3559	-0.258	0.901	-3.17	12.07	3926	-0.272	0.923	-3.09	11.475
ROAV	3561	0.047	0.136	0.342	3.001	3928	0.045	0.135	0.367	3.049
ROAV	3561	0.024	0.099	-0.163	2.746	3928	0.022	0.098	-0.142	2.767
EPS	3561	2.73	9.528	1.295	5.266	3928	2.612	9.519	1.281	5.281
P/E RATIO	3561	16.49	59.884	1.936	7.288	3928	15.705	59.475	1.937	7.393
Sales Growth	3561	0.056	0.357	-0.027	3.51	3928	0.051	0.359	-0.041	3.469
Market to Book	3561	2.983	5.743	2.412	7.778	3928	2.911	5.69	2.449	7.983
Earnings Volatility	3561	0.098	0.08	1.628	4.981	3928	0.099	0.082	1.596	4.763
Size	3561	3.199	1.121	-0.979	3.525	3928	3.182	1.135	-0.958	3.431
Age	3217	1.371	0.276	-0.853	3.342	3551	1.376	0.271	-0.86	3.433
Asset Tangibility	3561	0.687	0.22	-0.98	3.459	3928	0.689	0.223	-1.023	3.58

Quality	3558	0.212	1.567	-0.234	4.653	3925	0.213	1.583	-0.24	4.571
Market Leverage	3561	0.586	0.333	-0.341	1.678	3928	0.593	0.332	-0.373	1.704
Book Leverage	3561	2.327	28.513	20.22	447.65	3928	2.382	29.659	20.363	449.29
Int coverage ratio	3559	73.61	244.799	3.416	13.214	3926	71.157	241.418	3.483	13.693
Tax ratio	3562	0.141	0.263	-0.018	2.798	3930	0.138	0.263	0.021	2.807
Financial ratio	3552	0.112	0.275	3.424	13.499	3919	0.118	0.285	3.3	12.562
Creditrating	3592	0.171	0.377	1.746	4.047	3963	0.169	0.374	1.771	4.135
Regulation	3561	0.221	0.415	1.347	2.814	3930	0.214	0.41	1.397	2.95
Median industry book Leverage	3592	0.572	0.055	0.109	2.125	3962	0.574	0.056	0.073	2.088
Median industry Market Leverage	3592	2.171	3.114	1.669	4.03	3962	2.142	3.09	1.687	4.1
GDP Growth rate	3560	0.128	0.058	1.05	2.719	3927	0.128	0.058	1.042	2.696
Expected Inflation	3560	0.1	0.078	1.959	6.135	3927	0.101	0.078	1.96	6.148
Term Structure	3561	-0.831	2.215	-2.334	6.999	3928	-0.83	2.213	-2.335	7.011

Correlation with Difference in Difference DID Approach

		CSR Firms		Non-CSR		Test of Differences	
Variable	**Correlation**	**Mean**	**SD**	**Mean**	**SD**	**ttest**	**Wilcoxon**
Z-score	0.038**	1.91	2.171	1.632	2.037	-2.351**	-2.259**
hhi csr	0.049***	0.129	0.234	0.09	0.193	-3.098***	-4.998***
loan accessibility	-0.073***	0.19	0.188	0.238	0.226	4.578***	3.172***
amihud	-0.047***	0.119	0.394	0.188	0.502	2.712***	3.172***
cash holdings	0.072***	0.055	0.084	0.034	0.066	-4.549***	-4.885***
net profit ratio	0.050***	-0.258	0.901	-0.415	1.109	-3.113***	-3.702***
roa	0.042***	0.024	0.099	0.01	0.089	-2.610***	-3.246***
eps	0.038**	2.73	9.528	1.471	9.375	-2.414**	-2.734**
p/e ratio	0.041***	16.493	59.884	8.055	54.833	-2.590***	-3.480***
sales growth	0.041**	0.056	0.357	0.005	0.376	-2.568**	-2.053**
market to book	0.039**	2.983	5.743	2.211	5.101	-2.476**	-4.879**
earnings volatility	-0.066***	0.098	0.08	0.116	0.1	4.175***	2.216***
size sale log	0.046***	3.199	1.121	3.02	1.258	-2.873***	-2.257***
ln age	-0.056***	1.371	0.276	1.423	0.214	3.349***	1.952***
asset tangibility	-0.028*	0.687	0.22	0.708	0.242	1.757*	2.837*
quality	-0.002	0.212	1.567	0.22	1.725	0.097	0.347
market leverage	-0.069***	0.586	0.333	0.665	0.313	4.358***	4.395***
book leverage	-0.006	2.327	28.513	2.921	39.111	0.365	5.197
int cover ratio	0.032**	73.611	244.799	47.36	204.537	-1.984**	-3.657**
tax ratio	0.035**	0.141	0.263	0.109	0.26	-2.193**	-2.983**
financial ratio	-0.057***	0.112	0.275	0.168	0.364	3.603***	1.884***
credit rating	0.022	0.171	0.377	0.143	0.351	-1.368	-1.368
regulated	0.055***	0.221	0.415	0.144	0.352	-3.422***	-3.418***
median ind book leverage	-0.114***	0.572	0.055	0.593	0.057	7.234***	7.097***
media nind market to book growth	0.029*	2.171	3.114	1.86	2.827	-1.844*	-4.640*
GDP growth rate	-0.015	0.128	0.058	0.131	0.059	0.927	1.052
expected inflation	-0.006	0.1	0.078	0.102	0.077	0.379	1.057

*** p<0.01, ** p<0.05, * p<0.1

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
(1) [illegible]	1												
(2) score	0.038***	1											
(3) loanaccessibility	-0.073****	-0.250****	1										
(4) [illegible]	-0.047****	-0.193****	0.168****	1									
(5) [illegible]	0.072****	0.376****	-0.189****	-0.123****	1								
(6) [illegible]	0.050****	0.330****	-0.110****	-0.056****	0.151****	1							
(7) [illegible]	0.046****	0.563****	-0.238****	-0.168****	0.374****	0.407****	1						
(8) roa	0.042****	0.536****	-0.234****	-0.154****	0.342****	0.486****	0.924****	1					
(9) roe	0.038***	0.307****	-0.165****	-0.131****	0.206****	0.246****	0.610****	0.615****	1				
(10) [illegible]	0.041****	0.351****	-0.111****	-0.078****	0.095****	0.193****	0.228****	0.215****	0.048****	1			
(11) [illegible]	0.041***	0.169****	-0.007	0.02	0.032***	0.396****	0.268****	0.297****	0.214****	0.063****	1		
(12) [illegible]	0.039***	0.607****	-0.107****	-0.130****	0.129****	0.078****	0.173****	0.126****	-0.030**	0.336****	-0.011	1	
(13) [illegible]	0.029**	0.434****	-0.108****	-0.160****	0.068****	-0.028**	0.071****	0.008	-0.088****	0.296****	-0.047****	0.563****	1

*** p<0.01, ** p<0.05, * p<0.1

Note: The pairwise correlation confirms that a significant relationship exists between credibility and information asymmetry with CSR activities, while a negative correlation has been observed with Loan Accessibility. However, between Return on Assets ROA and Return on Assets Volatility ROAV high correlation of 92.4% has been recorded which hinders the relationship among other variables.

Regression Probit and Tobit

Probit			**Tobit**	
csrdummy	**Coef.**	**St.Err.**	**Coef.**	**St.Err.**
zscore	-0.122***	0.033	-0.019***	0.005
loanaccessibility	-0.161	0.203	-0.028	0.031
amihud	-0.035	0.084	-0.01	0.014
cashholdings	1.522***	0.588	0.187**	0.076
NPR	-0.016	0.063	-0.002	0.009
ROA	0.643	0.627	0.102	0.09
EPS	0.007	0.005	0.001	0.001
P/E RATIO	0	0.001	0	0
Sales Growth	0.022	0.115	0.006	0.017
M/B RATIO	0.035***	0.012	0.004***	0.001
Earn.Volatility	-1.776***	0.39	-0.31***	0.064
Size	-0.052	0.05	-0.007	0.007
Age	-0.559***	0.146	-0.072***	0.019
Asset Tangibility	0.239	0.195	0.036	0.029
Quality	0.028	0.021	0.004	0.003
Market Leverage	-0.562***	0.195	-0.083***	0.028
Book leverage	0.002	0.01	0	0.001
Tax ratio	0.023	0.139	0.003	0.021
Financial Ratio	-0.184	0.134	-0.035	0.021
Credit Rating	-0.026	0.1	-0.004	0.014
Regulation	0.102	0.098	0.013	0.013
Median Industry BL	-2.453***	0.819	-0.358***	0.122
Median Industry ML	-0.03	0.022	-0.004	0.003
GDP Growth rate	0.312	0.694	0.035	0.102

Expected Inflation	0.833	0.572	0.129	0.082
Constant	4.119***	0.58	1.3***	0.083
Mean dependent variable		0.915	0.912	
SD dependent variable		0.278	0.278	
Pseudo r-squared		0.062	0.129	
Number of observations		2931	2931	
Chi-square		105.176	105.819	
Prob > chi2		0	0	
Akaike crit. (AIC)		1648.178	770.272	
Bayesian crit. (BIC)		1809.722	937.798	
*** *p<.01*, ** *p<.05*, * *p<.1*				

Assumption Tests:
Panel Level Stationarity Test (Fisher)

The null hypothesis is that the series contains a unit root, and the alternative is that the series is stationary. P-value less than .05 shows that there is no unit root test.

Variable	Z-test	p-value
zscore	-22.637	0.000
loanaccessibility	-7.656	0.000
amihud	-86.709	0
cashholdings	-7.759	0.000
netprofitratio	-5.797	0.000
roa	-8.589	0.000
eps	-10.730	0.000
peratio	-22.550	0.000
salesgrowth	-18.103	0.000
markettobook	-21.741	0.000
earningsvolatility	-6.743	0.000
sizesalelog	-7.366	0.000
lnage	16.735	1
assettangibility	-5.919	0.000
quality	-22.033	0.000
marketleverage	-25.578	0.000
bookleverage	-1.901	0.029
intcover	-7.935	0.000
taxratio	-46.680	0
financialratio	-13.459	0.000
creditrating2	.	.
regulated	.	.
medianindustrybookleverage	-1.450	0.074
medianindustrymarkettobookgrowth	-26.571	0.000
gdpgrowthrate	13.877	1
expectedinflation	2.894	0.998

Variance inflation factor

	VIF	1/VIF
marketleverage	2.737	.365
roa	2.558	.391
medianindustrymark~h	2.208	.453
sizesalelog	1.891	.529
netprofitratio	1.868	.535
eps	1.851	.54
markettobook	1.714	.583
expectedinflation	1.672	.598
cashholdings	1.599	.625
medianindustrybook~e	1.56	.641
assettangibility	1.48	.676
gdpgrowthrate	1.47	.68
intcover	1.333	.75
amihud	1.314	.761
loanaccessibility	1.299	.77
salesgrowth	1.274	.785
peratio	1.236	.809
regulated	1.172	.853
creditrating2	1.159	.863
taxratio	1.155	.866
financialratio	1.136	.88
lnage	1.08	.926
hhicsr	1.075	.93
bookleverage	1.037	.964
earningsvolatility	1.024	.976
quality	1.018	.982
Mean VIF	1.497	.

Test for Heteroscedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of zscore
chi2(1) = 318.61
Prob > chi2 = 0.0000

VIF test does not confirm any sign of multicollinearity problem

The Heteroscedasticity test shows that there is a problem of Heteroscedasticity.

IMPACT OF FOREIGN DIRECT INVESTMENT ON SUSTAINABLE DEVELOPMENT IN SUB-SAHARAN COUNTRIES

Yamben Michel Freddy Harry [1]
Wang-Laouna Benguellah [2]

Abstract

The article investigates the direct and indirect effects of foreign direct and indirect investment on sustainable development is an empirical analysis of the relationship between Foreign Direct Investment (FDI) and sustainable development in the WAEMU and ECCAS zones. It examines the impact of FDI on sustainable development in a sample of ten countries[1] during the period 2000-2017. The estimation technique is based on the Generalized Method of Moments based on Dynamic Panel data. After a battery of tests (interdependence, stationarity, co-integration, endogeneity and model identification tests), the results reveal through the prism of co-integration that our main variables have three long-term relationships in the ECCAS sub-region and no long-term relationship in the WAEMU sub-region. In addition, in the WAEMU subregion, an increase of one unit of human development index (HDI) leads to a decrease of 2.41E-10% in FDI; 1.36E-05% in non-renewable energy consumption (CENREN). On the other hand, there is an increase of 0.499551% in carbon dioxide emissions (ECO2); 0.003856% in renewable energy consumption (CEREN); 2.75E-05% in Gross Domestic Product per capita (GDP per capita). In the ECCAS subregion, an increase of one HDI unit reveals a decrease of 1.15E-05% in HDPI, and there is an increase of 3.06E-12% in FDI, 0.005318% in non-renewable energy consumption (CENREN), an increase of 0.089169% in carbon dioxide emissions (ECO2); and 8.85E-05% in renewable energy consumption (CEREN). These results show, on the one hand, that the HDI does not contribute to the increase of the HDP in the ECCAS sub-region (which can be explained by the presence of corruption, lack of employment, low labour costs, political instability in the different countries of the sub-region...) and deteriorates FDI and CENREN in the WAEMU sub-region. In terms of recommendations, in order to have an HDI that can have a positive impact on the HDP, the actions to be taken must focus on improving governance at the level of both the States and the ECCAS sub-region. Diversifying energy sources. Finally, avoid the repatriation of profits to the countries of origin.

Keywords: Sustainable development; foreign direct investment; gross domestic product, renewable energy and non-renewable energy

JEL Codes: F64, Q01, Q56.

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[1] Angola, Cameroon, Congo, Gabon, DRC, Benin, Ivory Coast, Niger, Senegal, Togo

1. Introduction

Low sustainable development in the world in general, in the Sub-Saharan African countries is generally at the root of challenges world face in finding or accessing sustainable growth (Danish and al. 2019). Indeed, sustainable development is both an enabler and an outcome of a nation's prosperity (Asongu, 2018; Danish and al. 2018). In this context, this article is an empirical analysis of the impact of foreign direct investment on sustainable development in Sub-Saharan African countries. Indeed, FDI and development are two concepts that are very often associated but rarely sustainable development. ECCAS and WAEMU countries represent a relevant empirical field of application to analyse this impact. And this for at least two reasons. Firstly, because, for more than a decade, these countries have been engaged in vast programs in favor of sustainable development. Indeed, the establishment of the Central African Forest Commission (COMIFAC) in 2002, whose main objectives are the orientation, harmonization and monitoring of forestry and environmental policies in Central Africa, is a perfect illustration of this. Moreover, in parallel with these programs, these countries are continuing their efforts to attract foreign direct investment (Avom and Gandjon, 2012). Moreover, to our knowledge, very few studies dealing with the link between sustainable development and foreign direct investment have focused on African countries. Worse still, in all likelihood there would be no study specific to Sub-Saharan Africa. Indeed, most of the almost recent work on the issue focuses on developed countries and emerging countries Olszak, (2010). This article also aims to fill this gap. We base our research on a statistical analysis using indicators of sustainable development and foreign direct investment. This choice stems from the fact that, to our knowledge, we do not yet have a theoretically sound empirical model that explicitly links sustainable development to foreign direct investment. Even if, following Krugman (1991), a large number of studies on the so-called "new geographical economy"[2] have focused on the location of activities (and/or territorial attractiveness). Therefore, like Olszak, (2010) we bring these indicators closer together in order to highlight possible correlations or, on the contrary, the independence between sustainable development and foreign direct investment.

FDI has a direct impact on host economies, both in developed and developing countries (Louis Kouamé Caningan, 2012). Indeed, FDI can have technological spin-offs, contribute to the formation of human capital, facilitate integration into international trade, foster the creation of a more competitive business climate and this in complementarity with local enterprises and thus serve their development. (Demery, 2003) In addition, FDI can help improve environmental and social conditions in host countries. (Demery, 2003).

Nevertheless, in addition to these positive effects, FDI can also generate certain negative effects which mainly concern the costs borne by the host countries and which are generally manifested by the deterioration of the balance of payments due to the repatriation of profits. (Ikiara, 2003)

[2] NGE : New Geographical Economy

Indeed, Alaya, (2009), demonstrates that if in the 1980s, FDI was considered a threat to national sovereignty because multinational firms were suspected of reducing social welfare, and today we are witnessing a paradigm shift in the attitude of developing countries that have adopted favorable regulations in their policies towards them. Thus, the low level of local savings, the search for new sources of financing and a permanent quest for non-debt generating investments, the poor development of local financial markets, the limited access to international financial markets, the lack of technology and skills, etc... [3]are key reasons why developing countries are moving more towards FDI.(Ajayi, 2006).

However, our empirical results imply that FDI is more productive than domestic investment than when the host country has a minimum threshold stock of human capital. The results are robust to other authors (Borensztein et al., 1998) who control for variables usually identified as the main determinants of sustainable development in cross-country regressions.

We test the impact of FDI on sustainable development in a regression framework using data on FDI flows of ECCAS and WAEMU countries over the period 2000 to 2015. The purpose of this paper is to examine empirically the impact of FDI on sustainable development. Thus, it appears that the main channels through which FDI contributes to sustainable development are the human development index and carbon dioxide emissions. Sustainable development is about improving the well-being of present generations without reducing the possibility for future generations to improve theirs. Thus, considering sustainable development as development that respects the principle of intergenerational equity, what is the nature of the relationship between sustainable development and foreign direct investment in ECCAS and WAEMU countries? In other words, is it a unidirectional or a bidirectional relationship in both sub-regions? Answering this question means conducting a comparative study in the two zones. [4]

The rest of the article is organized as follows. Section two presents a review of the literature on the relationship between sustainable development and foreign direct investment. Section three details the econometric approach implemented and the data. Section four presents and discusses the empirical results and section five presents the conclusion and policy recommendations.

2. Literature review

In the neo-classical model anchorage adoubled by Solow (1956), FDI may in the long run affect the level of per capita growth and not the growth rate because of the presence of a steady state. In a model, characterized by the immobility of international production factors, the growth rates of countries at comparable technological levels converge. In the case of factor mobility, this convergence is reinforced. In contrast to this pattern, Romer (1986) develops a new theoretical framework in which technical progress is endogenous,

[3] Alaya and al., «Under what conditions do FDI stimulate growth? FDI, growth and catalysts in Mediterranean countries», *developing world*, n°148, 2009 P. 119-138

[4] ECCAS and UEMOA countries

i.e., yields are increasing and the marginal productivities of the factors of production are greater than unity. Following this work, many authors have tried to study the impact of FDI flows on per capita income.

Annie Valée (2014), in her book of synthesis on a field that has become a speciality in its own right in economics; free of jargon and mathematics, she takes stock of all the theoretical analyses as well as of the concrete practice of environmental policies and the public debates generated by them. She integrates into her research a decade (year 2000) rich in controversies on sustainable development.

Olivier Godard (2015), in his very impressive book, the result of a lifetime of research and teaching, provides an overview of all the analyses published on environmental issues. It is not a tedious catalogue, but a real perspective on economic, sociological and political analyses. Moreover, the author goes beyond this by proposing an innovative and convincing organization of society so that the environment is no longer a "controversial universe", but a collective issue that is taken on board.

Nicolas Buclet (2017), in his research, notes that the dominant economic system generates and aggravates a multitude of ecological and social problems. He discusses the various operational and conceptual avenues (participatory democracy, industrial and territorial ecology, functional economy, etc.) available to us to meet the challenges of sustainable development.

Yvette Veyret, Paul Arnould (2019), show that sustainable development is a complex concept, which considers the environment in its broadest sense: resources, biodiversity, food, health, natural and technological risks, waste management ... What are the new objectives to be achieved and what are the answers? An update on the state of the world and its inequalities: population, resources, health, biodiversity, risks, migration... The multiplication of global responses: major international conferences, legislation, adaptation to change...

De Gregorio (1992), working on a panel of 12 Latin American countries between 1950 and 1985 finds a significant and positive relationship between direct investment and growth. He further notes that the impact of FDI is three times greater than that of domestic investment. Blomstrom et al. (1992) confirm the first result using a sample of 78 developing countries, but working with cross-sectional data. Balasubramanyam et al. (1996) also use a cross-sectional analysis of 46 countries. They conclude that FDI flows affect growth in countries that have also implemented liberalization policies. De Mello (1999) finds complementarity between FDI and domestic investment. However, recent studies have shown that there may be a crowding out effect in some countries. Thus Agosin and Mayer (2000) have shown that in the case of some countries (Central African Republic, Nigeria, Zimbabwe) there is a crowding in effect, while a crowding in effect is observed in Ghana, Côte d'Ivoire and Senegal, while this effect is neutral in Gabon, Niger and Morocco.

In more targeted studies on certain countries, the direction of the FDI-domestic investment relationship is not always systematic. Kokko (1994) has highlighted the presence of a crowding out effect in the case of Mexico. Let us note that Agosin and Mayer (2000) rather conclude to a neutral relationship. The crowding out effect will also be confirmed in the case of Uruguay by Blomstrom et al. (1994) and in Indonesia by Sjoholm (1999). The lack of consensus is confirmed by authors who reach strictly opposite conclusions for other countries, such as Aitken et al. (1991) for Venezuela. Furthermore, Bosworth and Collins (1999), using the panel approach on 58 countries between 1978-1995, show that there is neither a crowding out effect nor a complementarity effect caused by FDI on domestic investment that can explain sustainable development.

It was in 1980 that the International Union for Conservation of Nature and Natural Resources (IUCN) first referred to the concept of "sustainable development" on the occasion of the publication of its World Conservation Strategy. In doing so, the organization broke with its hitherto narrower view of nature protection and recognized the legitimacy of people's aspirations for economic and social development. The continuation of many phenomena of ecological degradation, the inadequacy of the practical results obtained ten years after the first United Nations Conference on the Human Environment (Stockholm, 1972), despite the creation of the United Nations Environment Programme (UNEP), but also the worsening economic situation of the populations of large parts of the world led the United Nations General Assembly to mandate in 1983 a World Commission on Environment and Development chaired by Mrs. Brundtland, who submitted her famous report four years later in 1987. The latter report did much to impose the reference to "sustainable development" as a new semantic element in the international language and as a focus for the work of experts from international organizations (Hatem, 1990). As a result, much of the pre-existing work on the relationship between environment and growth, or environment and economy, then fell under this new banner, without the differences between them being abolished. The themes that now feed the debates on sustainable development did not therefore emerge with the Brundtland report, which was above all remarkable for the publicity and dissemination it received. Without wishing to go too far back in the analysis of filiations, we can distinguish three main theoretical currents among the thousands of scientists and experts concerned by the analysis of economic development and its consequences on the environment.

As early as the early 1970s, particularly under the aegis of UNEP, a first current of thought (Farvar, 1977; Glaeser, 1984; Sachs; Simonis, 1990) had focused on promoting what were called "eco-development strategies" (Sachs, 1974, 1980, 1993). Conceived as a new approach to development, these strategies focused on satisfying the basic needs (housing, food, cooking energy, water, sanitary conditions, education and health and participation in decision-making) of the most deprived populations, primarily in developing countries, adapting technologies and lifestyles to the specific potential and constraints of each ecozone, recycling waste and organizing the exploitation of renewable resources by designing loop production systems that systematize ecological cycles. They were primarily aimed at populations whose survival and activities were largely organized outside the formal market economy (domestic and peasant economy, informal urban economy), and were based on the direct participation of the populations concerned and the creation of new institutional forms of impetus and planning at the level of human settlements (towns, urban districts, villages) and rural districts.

This approach, which was both pragmatic and critical of the development strategies that had been the dominant driving force since the post-war period, took shape at the level of experimental or exemplary projects based on the initiatives of local population groups or militant or independent organizations, with the assistance of international organizations or public agencies. However, its influence has remained limited due to economic and political obstacles (extension of market logics conveying mimicry of modes of consumption accessible only to the middle classes, and mimicry of technological modernism). National political changes and the restructuring of North-South economic relations then appeared to the promoters of ecodevelopment as necessary conditions for a wider dissemination of this approach. More broadly, a major change in the lifestyles and development patterns of the industrial countries was seen as a sine qua non for a long-term harmonization between the rights to development of all countries and the preservation of the global environment. These radical demands were not to everyone's liking, so that after an initial flash in the pan, ecodevelopment remained confined to the margins.

A second current of thought (Costanza, 1989; Daly, 1977; Georgescu-Roegen, 1978; Passet, 1979) set out to develop a new theoretical representation of economic activity based on a confrontation with the new concepts and models developed by the natural sciences (thermodynamics, evolution and organisation of life, ecology, theory of self-organising systems). They first led to critical formulations: questioning of the idea that the economic system is a self-sustaining process, impossibility of extrapolating local solutions to global solutions due to entropy phenomena, impossibility of a complete recycling of raw materials, non-substitutability between natural capital and reproducible productive capital. They have also tried to find new ways such as eco-energy analysis to complement monetary evaluations. In recent years, all this has led to what is known as the "bio-economy" or "ecological economics", whose interdisciplinary inspiration remains very diverse.

A third stream is an extension of the neoclassical theory of economic equilibrium and growth. Some authors, such as Beckerman, 1974, took pains to deny the existence of a relationship between growth and environmental degradation, believing that there was an error in the target: the theory of growth is organised around the question of savings and investment, i.e. the trade-off on consumption flows over time, whereas environmental problems should be interpreted as inefficiency in the allocation of economic goods at a given time, inefficiency caused by the presence of external effects or public goods. Others have analysed regimes for the exploitation of non-renewable (Dasgupta and Heal, 1979; Solow, 1974) or renewable (Clark, 1973, 1990) natural resources in order to identify the conditions for economically optimal exploitation, to identify the implications for the evolution of these resources, and to draw analytical conclusions for the study of long-term growth and the optimal inter-temporal allocation of well-being. A set of models has also been constructed to analyse the logical implications of an intergenerational equity requirement on optimal growth paths, the consumption levels available to each generation and the conditions for transferring costs from one generation to the next. (Dasgupta, 1978; Henry, 1990; Kneese and Schulze, 1985). The tensions between these three currents are today very largely reflected in the proposals put forward to give content to the objective of sustainable development. Certainly the most commonly accepted definition is one of those given in the Brundtland Report, (1988): "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

3. Estimation strategy and data

In order to assess the main objective of this paper, that of analysing the nature of the link between FDI and sustainable development in the ECCAS and UEMOA sub-regions, our methodology is based on two main points. First, we draw on the work of Bruno Emmanuel (2016), from a theoretical point of view, and on dynamic panel models, more precisely a GMM/DPD (Generalized Method of Moments/Dynamic Panel Data) from an econometric point of view, to study the regression of direct and indirect effects on sustainable development. And finally, we will use a test battery to solve problems of endogeneity and heteroscedasticity of variables.

Table 1: Global rank of ECCAS and UEMOA countries according to HDI

	N°	*CEMAC countries*	*Rank HDI (2016)*	*Rank HDI (2017)*
ECCAC	*1*	*Angola*	*145*	*147*
	2	*Cameroun*	*150*	*151*
	3	*Congo*	*133*	*137*
	4	*Gabon*	*109*	*110*
	5	*RDC*	*176*	*176*
WAEMU	*6*	*Bénin*	*161*	*163*
	7	*Cote d'Ivoire*	*169*	*170*
	8	*Niger*	*188*	*189*
	9	*Sénégal*	*165*	*164*
	10	*Togo*	*164*	*165*

Source: Elaborated by the author based on UNDP data.

Data presentation and descriptive analysis

To compare our assumptions with reality, our main variables come from the World Development Indicator (2018) database. The main variables are the HDI, ECO2, CENREN, CEREN, GDPH and FDI. The difficulty of having sustainable growth shows how much this study is of capital interest. These cover a period from 2000 to 2017, using the panel data 2000 to 2017 for a sample of 5 ECCAS countries (Angola, Cameroon, Congo, Gabon, and DRC) and 5 WAEMU countries (Benin, Côte d'Ivoire, Niger, Senegal, Togo).

Presentation of variables

- The World Bank site (from the World Development Indicator database http://data.worldbank.org. Accessed 6 July 2018) provides data on CO2 emissions, GDP per capita, inward FDI, renewable and non-renewable energy consumption;

- The World Bank site (from the World Governance Indicator database) provides data on instruments such as corruption, political stability, regularity, compliance and annual GDP growth.

The information collected covers the period from 2000 to 2017. The sample of ECCAS and WAEMU countries selected amounts to 10 countries. Data for the other countries are insufficient for some variables and non-existent for others. This is why we excluded 9 countries from the sample in order to work on a dynamic panel.

Table 2: Distribution of variables

Variables	*Meaning*	*Database*
Ide	*Inward foreign direct investment flows*	*UNDP, WGI, and WDI (World Developpement Indicator)*
Idh	*Human development index*	
Eco2	*Carbone dioxide emission*	
Cenren	*Non-renewable energy consumption*	
Ceren	*Consumption of renewable energy*	
Pibh	*Gross domestic product per capital*	

Source: Elaborated by the author based on UNDP, WGI and WDI data.

4. Empirical results

This section comment sine step wise manner: the descriptive statistics; the reduced form and sample selection estimates

Stationarity tests

There are several unit root tests on panel data. The most famous of them are the test of Levine, Lin and Chu, (2002) called LLC; and the test of Im, Pesaran and Shin (2003) IPS called LM-bar test. Both tests are based on the same structure, but the first test (LLC) requires that N /T → 0, while the second test (LM-bar test), more generally applicable, just requires that N /T → k for any finite positive k constant. The IPS test is shown to be identical to the ADF test of Dickey Fuller, (1979). For the purposes of this paper, we have chosen the IPS test in the sense that it is stable, efficient, and better adapted to small panel data.

Assumptions of the test:

H0: The series is non-stationary;

H1: the series is stationary.

Decision ruler:

We accept the hypothesis of non-stationarity of the series when the probability of the test is greater than 5%. However, when this probability is less than or equal to 5%, we conclude that the series is stationary.

Table 3: Results of the unit root test (Im, Pesaran and Shin, 2003)

Variables	***W-stat (IPS)***[a]		***P-value***		***Degree of integration***	
	WAEMU	***ECCAC***	***WAEMU***	***ECCAC***	***WAEMU***	***ECCAC***
Ide	*-1,96424*	*-1,96424*	*0,0248*	*0,0000*	I^{1b}	I^1
Idh	*-2,05696*	*-3,61017*	*0,0198*	*0,0002*	I^1	I^{2c}
Eco2	*-1,70700*	*-2,02640*	*0,0439*	*0,0214*	I^1	I^1
Pibh	*-3,89844*	*-2,68032*	*0,0001*	*0,0037*	I^1	I^1
Ceren	*-2,22425*	*-3,31650*	*0,0131*	*0,0005*	I^1	I^1
Cenren	*-3,40007*	*-3,33698*	*0,0003*	*0,0004*	I^1	I^1

(a) means that this is the unit root test statistic of Im, Pesaran and Shin (2003); (b) means that the variable is first-order stationary; (c) means that the variable is second-order stationary.

Source: Elaborated by the author based on panel data with the use of Eviews 8 software.

The results of the stationarity test of Im, Pesaran and Shin show that the variables are stationary of order 1; except for the HDI variable of the ECCAS sub-region which is stationary of order 2. We conclude that all the variables are stationary and we accept the alternative hypothesis (H1) at a threshold of 5% and we reject the non-stationarity of the variables.

Co-integration test

The results of Pedroni's co-integration test show that there are three long-term co-integration equations between our variables in the ECCAS sub-region and no long-term co-integration equation between our variables in the *WAEMU* sub-region. Indeed, in ECCAS, out of the seven statistics of the test, three statistics including two of the within dimension and one of the between dimension reject the null hypothesis of absence of co-integration. This shows that a structural policy and not a conjunctural policy should be put in place.

Table 4: Alternative hypothesis: within-dimension

Tests	***Statistiques***		***Probability***	
	WAEMU	***ECCAC***	***WAEMU***	***ECCAC***
Panel v-statistic^w	*-0,284651*	*-0,623024*	*0,9413*	*0,9196*
Panel rho-statistic^w	*1,395468*	*1,075103*	*0,9578*	*0,9422*
Panel PP-statistic^w	*-0,274904*	*-2,353535*	*0,5740*	*0,0000*
Panel ADF-statistic^w	*-0,768591*	*1,497465*	*0,7541*	*0,0452*

Alternative hypothesis: between-dimension

Tests	***Statistiques***		***Probability***	
	WAEMU	***ECCAC***	***WAEMU***	***ECCAC***
Group rho-statistic	*2,004461*	*2,136808*	*0,9898*	*0,9837*
Group PP-statistic	*-5,9963333*	*-7,241386*	*0,5954*	*0,0000*
Group ADF-statistic	*-0,264016*	*0,046790*	*0,9739*	*0,5187*

Source: Elaborated by the author based on panel data with the use of Eviews 8 software.

Endogeneity test

The endogeneity test should allow us to know what the statistically significant influences of our model are. Its study is therefore a prerequisite for assessing the dynamics of the model.

Table 5: ECCAS endogeneity test

VARIABLE	*COEFFICIENT*	*STANDARD DEVIATION*	*T*	*PROBABILITY*
Endogenous variable				
Ide	*1,70ᴱ-11*	*3,17ᴱ-11*	*0,54*	*0,614*
eco2	*0,0288783*	*0,0243873*	*1,18*	*0,290*
Exogenous variable				
ceren	*0,0048641*	*0,0003798*	*12,81*	*0,000*
cenren	*0,0001851*	*0,0000402*	*4,61*	*0,006*
pibh	*7,72ᴱ-08*	*3,89ᴱ-06*	*0,02*	*0,985*
Autocorrelation test				
AR (1)	*Z= -0,59*		*Prob=0,553*	
AR (2)	*Z= -0,86*		*Prob=0,391*	
Instrument over-identification test				
Sargan	*Chi2(4) = 165,75*		*Prob=0,000*	
Hansen	*Chi2(4) = 0,000*		*Prob=1,000*	
Linear Hypothesis Testing				
Wald test	*F(5,5)= 6882,65*		*Prob= 0,000*	

Source: Elaborated by the author based on panel data with the use of Eviews 8 software.

Table 5 shows that the generalized method of moments yields acceptable prima facie results. The Sargan's test provides evidence that the selected instruments are valid.

Table 6: WAEMU endogeneity test

VARIABLE	*COEFFICIENT*	*STANDARD DEVIATION*	*T*	*PROBABILITE*
Endegenous variable				
ide	*-8,00^E-11*	*1,39^E-10*	*0,57*	*0,591*
eco2	*0,4782599*	*0,0993913*	*4,81*	*0,005*
Exogenous variables				
ceren	*0,0001594*	*0,0001589*	*1,00*	*0,362*
cenren	*0,003129*	*0,000636*	*4,92*	*0,004*
pibh	*4,29^E-06*	*1,59^E-06*	*2,70*	*0,043*
Autocorrelation test				
AR (1)	*Z= -0,44*		*Prob=0,662*	
AR (2)	*Z= -0,55*		*Prob=0,582*	
Instrument over-identification test				
Sargan	*Chi2(4) = 78,31*		*Prob=0,000*	
Hansen	*Chi2(4) = 0,000*		*Prob=1,000*	
Linear Hypothesis Testing				
Wald test	*F(5,5)= 2496,03*		*Prob= 0,000*	

Source: Elaborated by the author based on panel data with the use of Eviews 8 software.

Table 6 shows that the generalized method of moments yields acceptable prima facie results. The Sargan's test provides evidence that the selected instruments are valid.

The estimating equation

Only the variables presented in Table 2 were selected. This table presents the results of the regression performed. We performed a single estimate using the dynamic panel generalized method of moments (GMM/DPD). The regression covers ten countries in Sub-Saharan Africa. The estimation equation of our model is given in Table 7.

Table 7: Model estimation

Variable	***Coefficient***		***Standard deviation***		***t-statistique***		***Probability***	
	WAEMU	***ECCAC***	***WAEMU***	***ECCAC***	***WAEMU***	***ECCAC***	***WAEMU***	***ECCAC***
Ide	*-2,43^{E}-10*	*3,06^{E}-12*	*8,30^{E}-11*	*1,29^{E}-11*	*-2,933704*	*0,237988*	*0,0044*	*0,8125*
eco2	*0,499551*	*0,089169*	*0,088148*	*0,031286*	*5,667209*	*2,850091*	*0,0000*	*0,0056*
Cenren	*-1,36^{E}-05*	*0,005318*	*0,000108*	*0,000355*	*-0,126227*	*14,99477*	*0,8999*	*0,0000*
Ceren	*0,003856*	*8,85^{E}-05*	*0,000329*	*5,46^{E}-05*	*9,911043*	*1,638014*	*0,0000*	*0,1056*
Pibh	*2,75^{E}-05*	*-1,15^{E}-05*	*1,33^{E}-05*	*1,11^{E}-05*	*2,070887*	*-1,033422*	*0,0418*	*0,3047*

	WAEMU	***ECCAC***		***WAEMU***	***ECCAC***
R-squared	*-2,283667*	*0,275435*	***mean dependent var***	*0,414975*	*0,511413*
Adjusted R-squared	*-2,458796*	*0,236792*	***S.D. dependent var***	*0,065671*	*0,097647*
S.E of regression	*0,122134*	*0,085306*	***sum squared resid***	*1,118758*	*0,545788*
Durbin-watson stat	*1,402894*	*0,419374*	***j-statistic***	*0,575061*	*2,649828*
instrument rank	*7*	*7*	***Prob (j-statistic)***	*0,750114*	*0,265826*

Source: Elaborated by the author based on panel data with the use of Eviews 8 software

For all estimates, the carbon dioxide emission (ECO2) is highly significant and has the positive sign as opposed to the expected negative sign. Indeed, in the UEMOA sub-region, the regression results indicate that the consumption of renewable energy (CEREN) has a positive impact on the HDI. The consumption of non-renewable energy (CENREN), on the other hand, is not significant but has the expected negative sign on sustainable development (HDI). The GDP is significantly positive, reflecting the fact that the benefits from FDI are redistributed to workers. While this variable negatively impacts FDI and CENREN, their coefficients are -2.43E-10 and -1.36E-05 respectively. This result in the WAEMU zone indicates that any increase in the HDI/FDI ratio translates, all other things being equal, into a decrease of about 2.43E-11 percentage points in FDI the following year.

The results of the various tests (referring to the 2000-2017 period) show that inward FDI and consumption of non-renewable resources in the WAEMU zone have a negative impact on sustainable development (the HDI). In addition to this result, the revealed importance of the variable indicating the consumption of renewable energy must be added. Firstly, they indicate the importance of the HDPI for the sustainable development of the WAEMU zone, particularly for the improvement of social conditions and the standard of living of the population. Indeed, the fact that FDI inflows are a determinant of ECO2 confirms certain theories defended by the theories of endogenous growth (Solow, 1956) and those favorable to sustainable development; for these, the integration of foreign investment into the local economy has direct effects and significant spillovers for national enterprises and the active labor force. Thus, the arrival of FDI has positive repercussions on the quality of life and the qualification of workers in the WAEMU zone (GDP is significant and positive).

The arrival of foreign investors and workers also has a knock-on and imitative effect on the population. Indeed, the major efforts made by these companies and the State to create a workforce capable of meeting the needs of these investments lead to a change in the structure of society, which seeks to adapt to new lifestyles. The involvement of multinational companies in the construction of rural works for access to education, drinking water and rural electrification plays an undeniable role in this regard.

Secondly, the GDPH evolves in the opposite direction to FDI. This reflects the presence of an indirect channel between these two variables. A channel that we interpret in this research by the presence of corruption, mismanagement, bad governance, misappropriation of public funds and poor control over its companies. Thus, on the one hand, it is not mainly performance in economic growth that has attracted FDI in the WAEMU zone, and, on the other hand, the influx of FDI is not large enough to improve and create sustained growth; shortcomings in the orientation of FDI by sector of activity and in the regional space partly explain this lack of correlation between GDP and FDI. This result may also reflect shortcomings in the choices of development strategy based on an economy of opportunities for internal competitiveness. It is also explained by the great vulnerability of this economy to the international economic and financial situation; attention to the benefit of foreign investors can have limits and does not produce the expected economic effect. This means that foreign direct investment makes a significant contribution to improving the living conditions of the population of the WAEMU zone.

Finally, these results show that all the variables are significant. This means that FDI is at the root of pollution in the WAEMU and ECCAS zones (the ECO2 coefficients are 0.499551 and 0.089169 respectively). Similarly, it is not environmental policies that attract FDI in the WAEMU zone; this could explain why the consideration of environmental conditions is weak (-1.36E-05 for CENREN and 0.003856 for CEREN) in the investment code and the PRSP. However, the long-term relationship indicates a positive coefficient between the CO2 emission rate and the HDI (0.089169) in the ECCAS subregion. Indeed, these countries are still well below their economic objectives, which are mainly satisfied by the exploitation of their natural resources.

However, from the perspective of sustainable development, this result calls on the fact that in the pursuit of economic objectives, environmental imperatives must be taken into account so as not to deviate from social priorities, particularly the improvement of human capital (HDI). It is therefore imperative that production methods be revised, particularly in the industrial sectors that are the biggest polluters in the WAEMU zone. From this perspective, FDIs are also eagerly awaited, as they should be the vectors for the transmission of clean technologies to the economy and national enterprises.

5. Conclusion

This article empirically investigated the direct and indirect effects of foreign direct investment on sustainable development and this study cover a period from 2000 to 2017. FDI constitute a channel of transmission to national enterprises of technological processes and production organization. Indeed, foreign firms, by stimulating competition on the local market, encourage the improvement of productivity gains. This is done through new production methods, new expertise introduced and disseminated in the fields of management and distribution. This spill-over effect may extend beyond the sector concerned by direct investment insofar as goods with a more sophisticated technological content require in particular the provision of quality local services based on more elaborate standards. (Ekodo R. and S. Nkot, 2017).

This study has made it possible to carry out some prospective reflections on the impact of foreign direct investment on sustainable development in sub-Saharan countries and to see the nature of the relationship between these two notions. The primary ambition was not to take stock of its functioning, as several studies have done so. In this research, we examined the link between sustainable development and foreign direct investment. The avowed ambition was to verify the nature of the relationship between the two concepts in the context of the WAEMU and ECCAS economies. To do so, our empirical study consisted in comparing composite indicators of FDI and sustainability.

The analysis of the correlation highlights two main results. First, there is a discrepancy between the HDI (a variable capturing sustainability according to UNDP) from an environmental perspective and the inflow of foreign direct investment (FDI). Second, environmentally sustainable development (ECO2) seems to be compatible with foreign direct investment in the *WAEMU* and ECCAS countries. These results would therefore call for the protection of the environment and the well-being of populations to be taken into account in the formulation and implementation of land-use planning policies in these two zones. However, the emergence of a causal relationship between the two concepts requires the use of econometric methods that make it possible to control for other determinants of foreign direct investment. This necessarily requires the development of a theoretically sound empirical model explicitly linking foreign direct investment to sustainable development.

We further questioned four non-exhaustive conditions for ensuring sustainable development in these areas, including the issues that revolve around these areas. First, improved governance at both state and community levels is helpful in stabilizing institutions to facilitate the location of FDI. Secondly, productive diversification, coupled with structural transformation, would help to reduce the rate of carbon dioxide emissions and improve the future of future generations in the ECCAS zone. Thirdly, better coordination of economic policies would avoid the repatriation of profits to the countries of origin of MNCs but rather their reinvestment in host countries. Implicit in this requirement is a rationalization of the Regional Economic Communities (RECs), and proliferation therefore hinders the entry into force of the decisions taken at the various summits of Heads of State and Government. Fourthly, it is argued that the mobility of factors of production accelerates private investment in the countries of a monetary union. Intra-regional migration contributes to the pooling of the labor force to meet the need for structural transformation. Beyond these four non-exhaustive conditions, sub-Saharan countries raise many challenges, some of which have been mentioned. Imposing environmental standards on firms, especially those that work through subcontractors with production sites in southern countries.

Finally, to get a fuller picture of the relationship under study, it would be interesting to further investigate if the effect of foreign direct investment on sustainable development is actually modulated or mediated by home produced sustainable growth.

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Review of Socio-Economic Perspectives **Siwek, A.J., pp. 107-115**
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ADEQUATE RETIREMENT PATHS IN THE POLISH PENSION SYSTEM

Alicja Jajko-Siwek[1]

Abstract

Adequacy is the one of the most important issue for every pension system and especially for every future pensioner. Therefore, the question arises what people should done during his life to achieve enough high pension benefit to maintain after retirement the previous standard of living. The article aims to characterize the life trajectory of people who have obtained an adequate retirement benefit in Poland. Polish pension system can be treated as an example of defined benefit scheme. This research has been done by using sequence analysis and cluster analysis. The study used data come from the seventh round of SHARE 50+ in Europe (SHARELIFE). The study was conducted separately for women and men. Four variables were taken into account: time of education, time of work, number of children and retirement age. Obtained results allow to indicate how long education and professional work should be continued, as well as what number of children contributes to achieving an adequate pension. The results show differences in the life cycle of retired men and women as well.

Keywords: Adequacy, pension benefit, sequence analysis

JEL Codes: C18, H55, J32

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1. Introduction

One of the most important aim of pension benefit system is to generate adequately high pension. For individual pensioner it is crucial to maintain his previous standard of living after retirement. That is significantly important nowadays because, as we can see from polish national insurance company called ZUS, that in 2018 (ZUS 2019, p.40), 28,4% of pensioners received less than 40% of average income, which can be assumed as a poverty risk. Hence, future pensioners should know what to do during their work career and even wider in their social life, if they want to achieve adequate pension benefit.

They should get to know answers especially on question how long to work and when to retire (Ponomarenko, 2016). Another question is connected with time spend on education. And finally, one of the most important factor for our life, the number of children which is advisable to have in the context of adequacy (Aisenbrey & Fasang 2010; Madero-Cabib & Fasang 2015; Jajko-Siwek 2018). This paper aims to show the individual life paths to adequate pension benefit in the polish pension system. We consider individual paths for men and women separately. Nowadays we have Notional Defined Contribution Pension System in Poland. But because people who are taken into research had belonged only to the old polish pension system, and they received their pension benefit only form that old system, Polish Pension System can be treated as an example of Defined Benefit Scheme (Szumlicz & Żukowski 2004).

2. Data, variables and research method

In the paper, data was used from the Survey of Health, Ageing and Retirement in Europe - SHARE[1] 50+ (Börsch-Supan 2019). Especially the data from the seventh wave, called SHARELIFE, which were conducted in 28 countries of EU in 2017, were used.

First we extracted pensioners from Poland. Second we selected people who were retired and who had given information about their first pension benefit and about the last wage. We calculated the individual replacement rate (RR) for these people. Replacement rate is assumed to be the best measure of adequacy (Borella & Fornero 2009; EU 2018; Chybalski 2016 b; OECD 2018). Finally we divided our sample by gender and on people

[1] This paper uses data from SHARE Waves 1, 2, 3, 4, 5, 6 and 7 (DOIs: 10.6103/SHARE.w1.700, 10.6103/SHARE.w2.700, 10.6103/SHARE.w3.700, 10.6103/SHARE.w4.700 , 10.6103/SHARE.w5.700, 10.6103/SHARE.w6.700, 10.6103/SHARE.w7.700), see Börsch-Supan et al. (2013) for methodological details.(1)
The SHARE data collection has been funded by the European Commission through FP5 (QLK6-CT-2001-00360), FP6 (SHARE-I3: RII-CT-2006-062193, COMPARE: CIT5-CT-2005-028857, SHARELIFE: CIT4-CT-2006-028812), FP7 (SHARE-PREP: GA N°211909, SHARE-LEAP: GA N°227822, SHARE M4: GA N°261982) and Horizon 2020 (SHARE-DEV3: GA N°676536, SERISS: GA N°654221) and by DG Employment, Social Affairs & Inclusion. Additional funding from the German Ministry of Education and Research, the Max Planck Society for the Advancement of Science, the U.S. National Institute on Aging (U01_AG09740-13S2, P01_AG005842, P01_AG08291, P30_AG12815, R21_AG025169, Y1-AG-4553-01, IAG_BSR06-11, OGHA_04-064, HHSN271201300071C) and from various national funding sources is gratefully acknowledged (see www.share-project.org).

who achieve or not adequate pension, while adequate pension means the replacement rate over 70% (Czepulis-Rutkowska 2000; Palmer 1989, 1994).

Table 1 gives an overview of research sample.

Table 1. Sample size by gender and the level of pension benefit

Pension Benefit	Men	Women	Total
Adequate	197	212	409
No Adequate	192	212	404
Total	389	424	N=813

Source: Own calculation on SHARELIFE data.

We have 813 pensioners in the Polish Pension System, who were taken into the research. Among them there were 409 (50,3%) people who had achieved an adequate pension benefit. Furthermore, there were 50,0% of men with an adequate pension benefit and 50,6% of women. Due to this we can say that adequacy varied very slightly by gender in Poland.

In the paper we consider four variables connected with work-family life:

1) Education - in education (iE) or no education (nE);
2) Work - in Work (iW) or no Work (nW) – connected with:
    a. Seniority - time in work;
    b. Retirement age;
3) Number of Children - no Cildren (nC), few Children (fC) (mean 1 or 2 children), many Children (mC) (mean 3 and more children). By combining these variables we achieve a set of states presented in Table 2.

Table 2. Dimension of states in pensioner trajectories

Sign	Symbol	Sign	Symbol
1	**iEnWnC**	**4**	**iEiWnC**
2	*iEnWfC*	*5*	*iEiWfC*
3	iEnWmC	6	iEiWmC
7	**nEnWnC**	**10**	**nEiWnC**
8	*nEnWfC*	*11*	*nEiWfC*
9	nEnWmC	12	nEiWmC

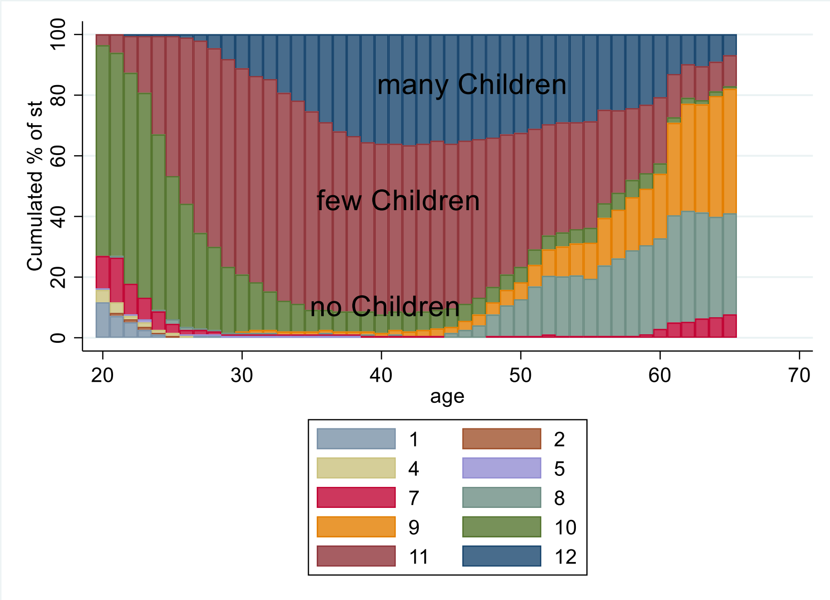
Source: Own calculation on SHARELIFE data.

We have used sequence analysis as the method of study (SA). SA is a method that provides a comprehensive look at the whole course of one's life and is widely used in life course analysis (Möhrinfg 2016). It allows for an identification of typical trajectories of the life course as well (Abbott and Forrest 1986; Brzinsky-Fay, Kohler, & Luniak 2006). Finally, based on the results obtained from sequence analysis, we applied cluster analysis for building a typology of the sequences. As a method for clustering we have used the Ward method, which allows to minimize the variance between clusters.

3. Results

Fig. 1 and Fig. 2 shows state distribution plots for men and for women in the polish pension system. State distribution plots show, at each age, the distribution of the states for combinations of education, work and number of children.

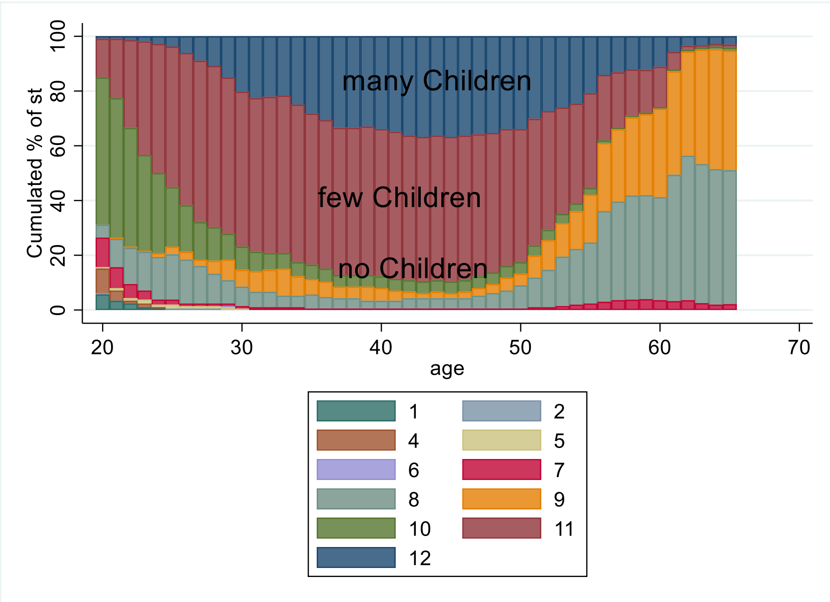
Fig. 1. Distribution of states across the life course in the polish pension scheme for men



Source: SHARELIFE data and own calculation in STATA.

The factor most differentiate our research sample is the number of chil-dren. It concerns both men and women. People with one or two children have the largest share in the surveyed population. On the other hand the time of education is definitely the least important. The percentage of people who remained in education over the age of 20 - these are states 1 to 6 - is very small. This applies to both men and women as well. Only 2% of women remain in employment after the standard retirement age, while 11% of men continue working after that age.

Fig. 2. Distribution of states across the life course in the polish pension scheme for women



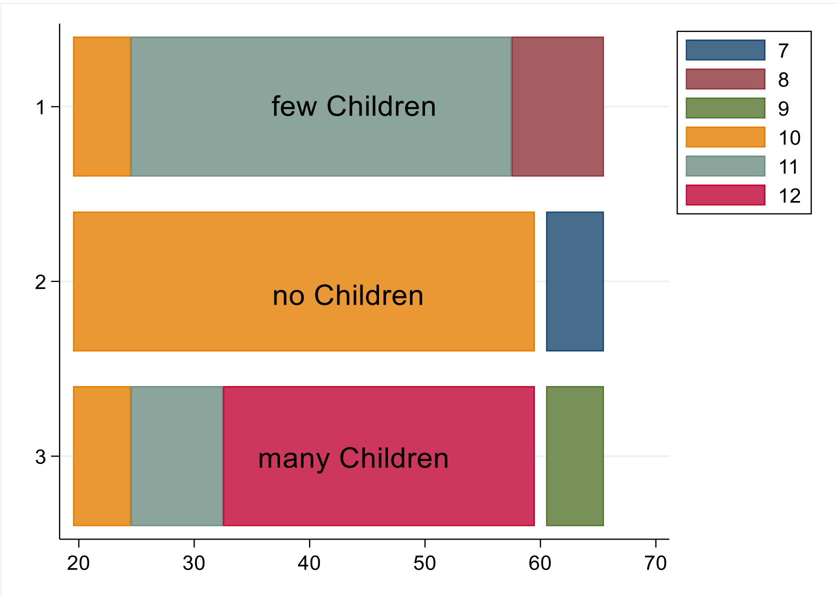
Source: SHARELIFE data and own calculation in STATA.

After cluster analysis we achieve three clusters for men which are shown in Fig. 3. In the case of women we can reveal three clusters for retirement paths as well. We can see all of them as a modal plot in Fig. 4.

Cluster 1 is the same for men and women. We called this cluster "Few Children" and it is the largest cluster and contains 55.3% of men and 56.6% of women. To this cluster belongs men or women who have few children: one or two. This is the most typical trajectory leading to an ad-equate pension benefit in the polish pension system.

Men from this group have first child with average age about 25.5 and they stop working on average at the age 56.5. The most common time of working is for this men equal 41 years. Women in this cluster have first child a little bit earlier than men, it is at the age 23.3 and they finish working also a few years earlier on average at the age 53.8. The most common time of working for women is about 36 years.

Fig. 3. Modal plot of states across the life course for men in clusters



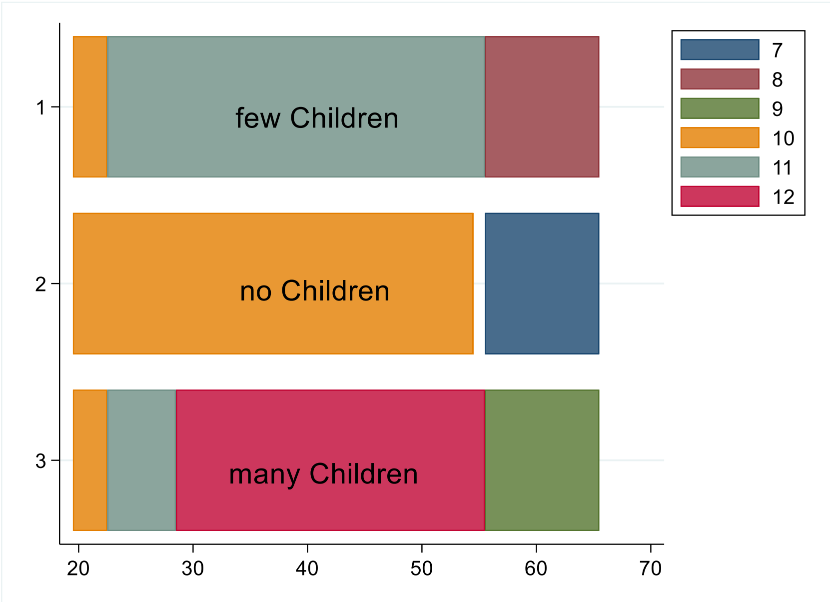
Source: SHARELIFE data and own calculation in STATA.

The second popular way which leads to an adequate pension is to live with many children. This cluster has number 3 and we called it "Many Children", because this cluster summarizes trajectories for men or women with many - 3 and more - children. This cluster combines 38.1% of men and 38.7% of women.

Men from this group have first child earlier than in others groups it is with average age about 24.7. The same concerns women. They have the first child the fastest in all groups studied, i.e. around the age of 21.9.

In the same time women in this cluster work for the shortest time - 31 years, while men in this cluster worked for 10 years longer. Furthermore, women stop working earlier than men – on average at the age 53.1, while men finish employment around 57.4.

Fig. 4. Modal plot of states across the life course for women in clusters



Source: SHARELIFE data and own calculation in STATA.

The third cluster has number 2 and includes men and women who have no children. That is way its name is "No Children". This cluster is the smallest one both for men and women and counts 6.6% of men and 4.7% of women.

Men who belongs to this cluster retired after 41 years of working at the average age 58.3. Women stop working earlier than men – on average at the age 56.0 years after 36 years on market of work.

4. Conclusion

The main aim of this study has been to investigate life paths of pensioners who have achieved adequate pension benefits in the polish pension scheme.

First of all, the results show that around 50% of men and women in the sample have adequate retirement income. The second conclusion is that there are slightly significant differences between adequate retirement paths men and women. Men are working for longer time and entered retirement later than women. Furthermore, they have children later as well. The shift of the moment of implementation life events for men and women is about 4-5 years.

We found out that the most important factor which strongly differentiates population of pensioners for the adequacy of pension benefit is the number of children. There has been determined for research group three standard adequate trajectories. They are the same for men and women.

The results indicate that the most popular way leading to adequacy is having few children. Another way is connecting with having three or more children. The third one, the less popular, mean living without children.

The use of sequence analysis and cluster analysis has given us an in-sights into linkage between the level of pension benefits and the decisions made by every persons in the field od time of education, time spend in work, retirement age and the number of children.

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Review of Socio-Economic Perspectives **Hernandez, J.G.V., et.al., pp. 117-134**
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INNOVATION IN UTILITY CRAFTSMANSHIP: ANALYSIS BASED ON HUMAN CAPITAL

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Lic. Jonathan Daniel Chávez Ascencio[2]
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Abstract

The objective of this work is to determine the relationship between human capital and artisanal innovation, nowadays, in Tonalá Jalisco, artisanal pieces are produced in an innovative way, either ceramic or any variant of the mud technique, but what A substantial part of the business is what makes innovative business thinking possible. The Intellectus model, created by Eduardo Bueno in 2011, is used as a reference, distinguishing intellectual capital in three types of capital, but for the purpose of this study only analyzed the relationship of human capital with respect to artisanal innovation, the study was conducted in 2018 to 73 craft economic units, it was obtained through the technique of chi square that if there is a positive dependence on human capital and the innovation.

Keywords: Competitive advantage, craft, human capital, innovation

JEL Codes: D24, E23, E24, J24, 031.

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1. Introduction

The lack of innovative designs, the lack of use of new technology, scarce access to information and communication technologies, adding a lack of knowledge of the market, are problems that artisanal economic units face, preventing the development of products with innovative characteristics that could satisfy the needs of the consumer. There are more problems that have as their origin the absence of business training, highlighting that the artisan businesses are mostly undertaken spontaneously and by tradition, the companies that start the grandparents, are passed from generation to generation (Pérez, 2015). When travel through Tonalá, Jalisco, it can be seen colorful crafts that are distinguished by their beautiful colors, styles and cultural belonging to the region. Unfortunately, there are no unique designs, it could be seen that some artisans sell novel pieces, but if you continue to visit Several establishments can be found with very similar pieces.

2. Background

Concepts

Difference between handcrafts and crafts

The present study takes craftsmanship as an object of research, for this reason it is essential to distinguish between crafts and handicrafts. According to the National Fund for the Promotion of Crafts, crafts is an object or product of community cultural identity, made by manual processes continuous, aided by rudimentary implements and some of mechanical function that lighten certain tasks, and a handcraft is that object or product that is the result of a process of manual or semi-industrial transformation, from a raw material processed or prefabricated (National Fund for the Promotion of Crafts, 2016).

Industry

Size of craft companies:

In order to classify the companies into micro, small or medium, the criterion of the number of employees is used. In Table 01, the number of employees can be differentiated between the different economic units of the commercial sector.

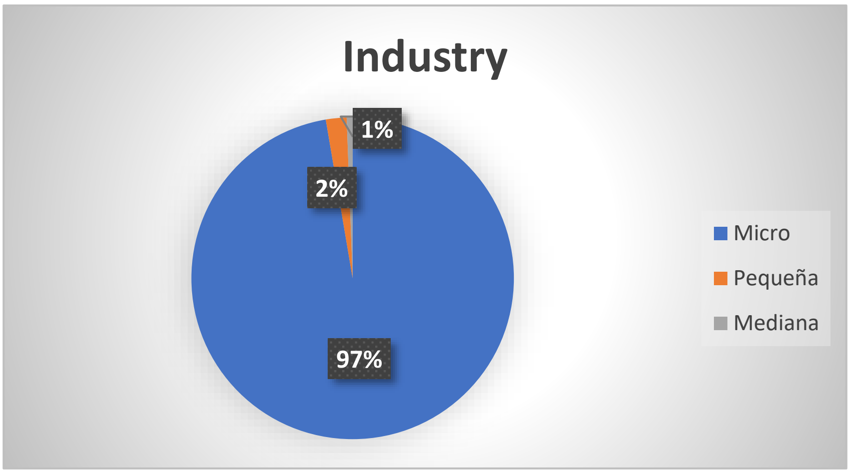
Table 1 : Stratification of companies published in the Official Gazette of the Federation (DOF) 30
December 2002

	Sector	
Size	Industry	Commerce
Micro	from 0 a 10	From 0 a 10
Small	From11 a 50	From 11 a 30
Median	From 51 a 250	From 31 a 100

Source: Diario Oficial de la Federación 30 de diciembre de 2002

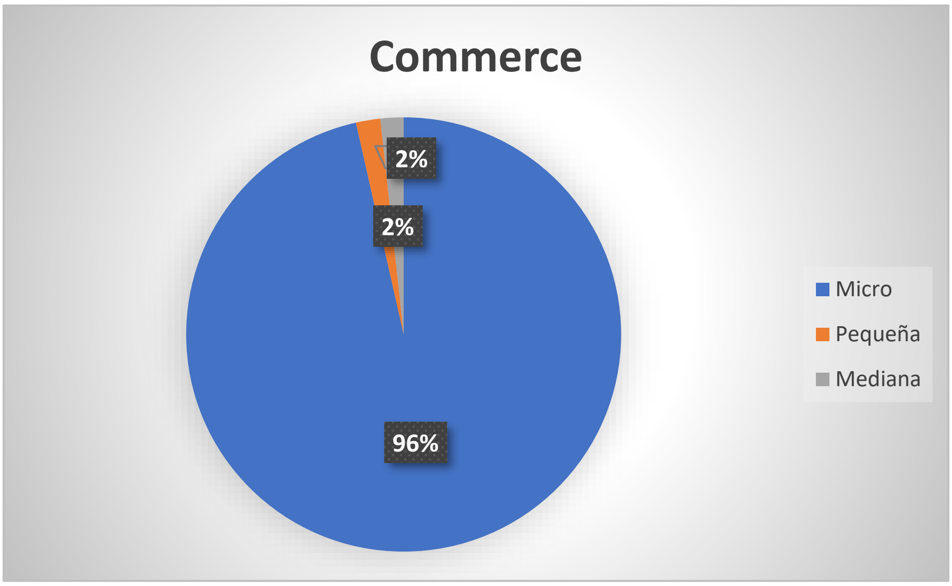
It is time to classify the artisanal economic units, using the criterion of stratification of the DOF, published on December 30, 2002, it is shown in graphs 01 and 02 that the majority of artisanal enterprises are classified as microenterprises.

Figure 1: Size of ARTISAN ECONOMIC UNITS, Industrial sector



Source: Own elaboration, with data from the National Institute of Statistics and Geography.(2018).

Figure 2: Size of the ARTISAN ECONOMIC UNITS, Trade sector.



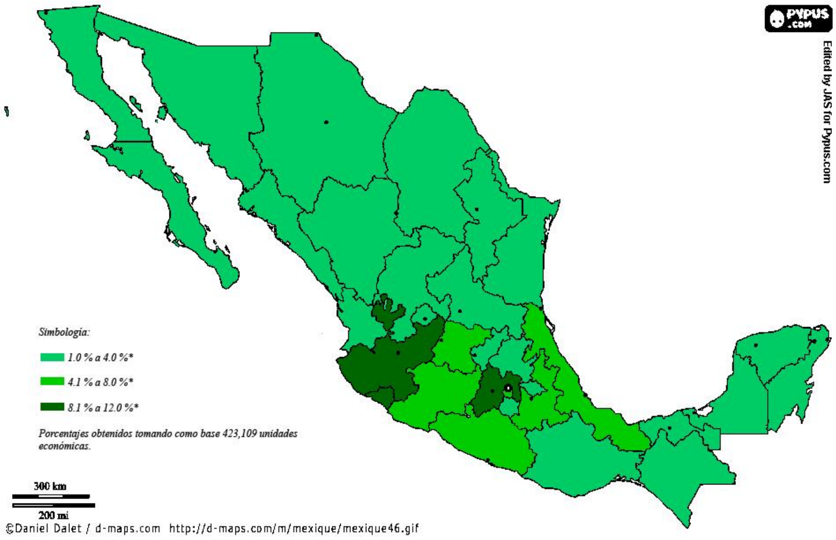
Source: Own elaboration, with data from the National Institute of Statistics and Geography.(2018).

It is found that approximately 97.33% of industrial ECONOMIC ARTISAN UNITS are classified as microenterprises, while 96.48% of commercial ARTISAN ECONOMIC UNITS are microenterprises.

3. Geographical location by sector

In this section it will be known the concentration of artisanal economic units in the United Mexican States. In figure 01 it can be interpreted that the largest concentration of artisanal economic units is located in Jalisco, Colima and State of Mexico, for this reason the mentioned problem On the low valuation of artisanal products in Tonalá, Jalisco is significant as a significant sample of Mexico.

Figure 3: Concentration of artisanal economic units in Mexico



Source: Own elaboration, based on information from the National Institute of Statistics and Geography. (2018).

4. Craft shops in Tonalá

People as people have characteristics that distinguish them from others, Tonala reserved nature, craftsmanship qualities for the unique stamp that the authors print in each utilitarian or artistic piece. The potter's talent is an inheritance that has been passed on from generation to generation for hundreds of years, the art in clay is not only manual skill, but expression of the talent with which each potter was born (Ayuntamiento de Tonalá, 2015).

Traditional techniques are still in production today and are listed below:
a) Burnished mud

a) Flagrock
b) Cinnamon mud
c) Clay betus
d) Petatillo clay
e) Black sgraffito
f) Natural mud
g) Polychrome clay

h) High temperature ceramics

i) Contemporary mud

5. Competitive advantage

It is important the valuation of the company that should not be based exclusively on the basis of its financial and economic indicators, since such valuation must fall especially on the intellectual capital of the company (Sánchez, Melián, Hormiga 2007). The correct use of competitive advantages will make the economic unit in question stand out among the existing ones in the same sector.

The intangible resources of the economic units are the main source of sustainable competitive advantage, specifically the intellectual capital that generates value and increases the performance of companies (Bueno, Eduardo Salmador, 2008). Human capital is the intangible non-separable resource par excellence, since it cannot be separated from its carrier, within the separable intangible resources, the following stand out: organizational capital, technological capital and reputation (Fernández Sánchez, Montes Peón, and Vázquez Ordás, 1997).

6. Theoretical revision

Human Capital

Human capital is defined as a generator of value and a source of innovation for the economic unit, from where the ideas of the organization are born (Viedma Martí, 2001). Within human capital three components can be distinguished within this dimension: competences, attitude and intellectual agility, creating in turn new knowledge or discovery that allow improving products or services through ideas (Roos et al., 2001). Assets centered on the individual include collective expertise, creative ability, problem solving skills, and leadership (Brooking, 1997b). It is important to note that not all workers pay creativity or new knowledge to the company, they should be considered exclusively those who are considered experts, that is, they are specialists and represent the elite of the labor payroll (Sveiby, 1998).

The Human Capital for this model evokes knowledge, regardless of its nature that people and groups possess, as well as the process to generate it. Human capital is managed with a strategic purpose paying significantly to the mission and vision of the organization. Knowledge is transmitted from person to person and in society is of vital importance to the organization in order to learn and share information that will benefit the economic unit. Values are actions, human attributes or conditions linked to the well-doing and development of man, in harmony with their environment (Cardona, 2000), the main values highlight commitment, responsibility, tolerance, respect, search for truth and identity, freedom among others, Bueno mentions that values and attitudes are a synergy of each person's being, being and willing.

The aptitude in the Intellectus model is synonymous with knowledge that people have to achieve a certain performance, highlighting the norms of behavior or organization, specialized knowledge, internally improved knowledge and of course experience is an aptitude that is obtained by the staff of the economic unit.

The capacity is known as the know-how, which refers to the set of skills, skills and talent that the person develops as a result of experience, learning is the ability to respond to the dynamics of change (Bueno, 2011), a capacity that Every human being possesses the communication that, according to Díez Freijeiro, is the capacity that every animated being has to relate to its environment. Human capital refers to the knowledge acquired by a person that increases their productivity and the value of their contribution to the economic unit, includes relationships with other employees, contacts, individual qualities, (Fernández Esteban, 1997).

Intellectual capital

The main objective of knowledge management is to evaluate the competences (knowledge, skills and attitudes) of human capital. It is a strategic tool in the decision making of an organization (Sarur, 2013). On the one hand, intellectual capital is defined as the combination of intangible assets that allow a company to function (Brooking, 1997a). The intellectual capital within a company represents beneficial results to the economic unit transferred to the financial capital, so that the financial accounting is transformed and adopts new concepts, consequently generating a competitive advantage in the market, that is, in correlation with the possession of knowledge, relations with clients, suppliers, experience, organizational technology, professional skills, Etc. (Sarur, 2013).

The company Skandia, in 1991, proposes the Skandia value scheme, considering that the intellectual capital consists of: human capital and structural capital (Sarur, 2013). The Integral Control chart was developed by Kaplan and Norton in the year of 1996, applied in: AT & T, Eastman, Kodak, American Express and Taco Bell. These organizations have as individuals the operations with which they interact to develop businesses, such as employees, clients and investors, with a view to balanced markers (Sarur, 2013).

On the other hand, the main source of organizations' sustainable competitive advantage resides fundamentally in their intangible assets, reflected in their Intellectual Capital, (Bueno, Salmador, Merino, et al., 2008). Entrepreneurial activity receives particular attention among academics and public policy makers because it is linked, explicitly or implicitly, with economic growth and the general welfare of society (Salas-Fumás & Sanchez-Asin, 2010).

Intellectus model

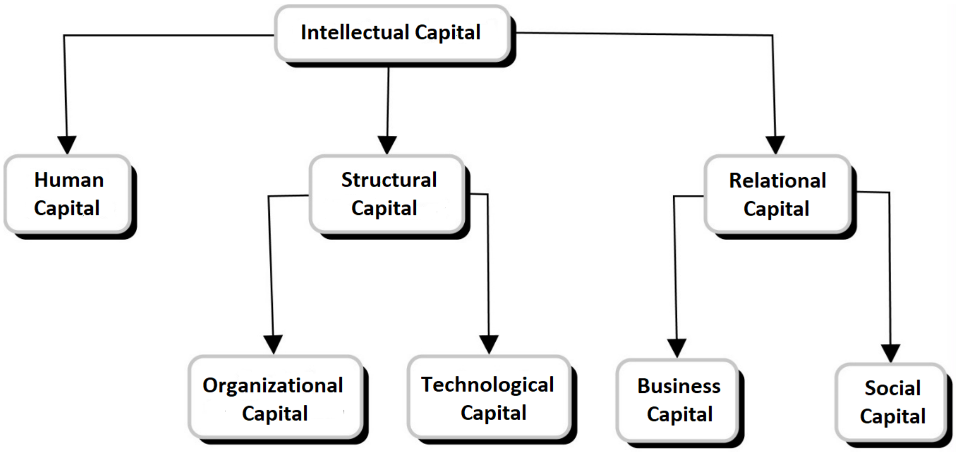
In order to achieve a better understanding of intellectual capital, it is necessary to point out the different synonyms that refer to the capital in question, throughout the work of Lev B. of the year 2001 called Intangibles. Management, measurement and reporting, these synonyms are: intangible assets and knowledge assets.

Intellectual capital is the synergy of all the knowledge that employees possess that give the company a competitive advantage (Stewart, 1998), and the collective of intangible assets can be identified and measured (Malhotra, 2000). Intellectual capital is based on knowledge, experience, skills, information systems, intellectual property, organizational structures, etc. (Robinson and Kleiner, 1996).

The intellectual capital is not only the brain talent of the employees, it also covers the brands, the name of the product, investments that have been made in the past, although they have not been revalued, the market has done so (Edvinsson and Malone, 1999). It is suggested that the intellectual capital of an economic unit be the sum of the knowledge of its members and the practical interpretation of the intangible asset (Roos, Bainbridge and Jacobsen, 2001). The Intellectus model of measurement and management of intellectual capital was published in 2003 by Eduardo Bueno, the structured capital to be measured in contrast to the different measurement models is divided by types of capital.

The Intellectus model of measurement and management of Intellectual Capital was published in 2003 by Bueno E. Its publication was after the international publication of the Skandia model in 1992 by Edvinson. The aforementioned models in synchrony seek identification, definition of numerical indicators, establishment of management and design guidelines on the analysis of intangible assets and non-financial indicators.

Figure 4 . Intellectus model



Source: own elaboration based on the Intellectus Measurement Model. management and information of intellectual capital. Madrid: Autonomous University of Madrid.

In 2011 in Madrid Spain the Intellectus model was updated with one of the objectives of improving the logical structure of the model, the new model according to Bueno is systemic, open, flexible, adaptive and dynamic, essentially presents five types of capital: Human Capital, Organizational Capital, Technological Capital, Business Capital and Social Capital, is an open model since the economic unit interacts with its environment and is mainly dynamic, since the present value is directed to the business to reach an estimated future value.

7. Research methods

A survey was applied to 73 craft economic units, because the number of artisans is not known, simple random sampling will be used for convenience. The Intellectus model will be taken as a reference for measuring intellectual capital and each element of the capitals that make it up will be operationalized.

Table 2: Indicators and dimensions of Human Capital.

Indicators	Dimensions
Values and attitudes (to be + be)	• Feeling of belonging and commitment • Self-motivation • Satisfaction • Sociability and customer orientation • Flexibility and adaptability • Creativity
Skills (know)	• Regulated education • Specialized training • Internal learning • Experience • Personal development
Capacities (know how)	• Learning • Collaboration (teamwork) • Communication (knowledge exchange) • Reconciling work and family life • Leadership

Source: Intellectus measurement model. management and information of intellectual capital. Madrid: Autonomous University of Madrid.

Using the Pearson chi-square technique using the Statistical Package for the Social Sciences (SPSS) program, the qualitative relationship between innovation and human capital was analyzed.

8. Analysis of results

The Cronbach's Alpha statistic was performed in order to analyze the reliability of the information, obtaining 0.835 as Cronbach's Alpha index, therefore, it is interpreted that the results obtained have a good reliability. Calculated the value of significance (critical value observed) 0.001 <0.05 rejects the null hypothesis (the variables are independent) and accepts the alternative hypothesis, that is, human capital is significantly related to the capital of entrepreneurship and innovation at a level of 95 % reliability.

Likewise, a linear regression was performed, to review only the signs of the explanatory variables and we obtained that: Feeling of belonging and commitment, Self-motivation, Satisfaction, Flexibility and adaptability, Personal development, Collaboration (teamwork) and Communication (exchange of knowledge), had a positive sign in their correlation coefficient, therefore qualitatively, it is inferred that the aforementioned aspects of artisanal economic units correlate positively with artisanal innovation.

9. Conclusions and recommendations

This research proposes to the artisan businesses a series of variables or aspects to be taken care of in the artisanal business with the aim of improving or expanding entrepreneurship and artisanal innovation. In turn, to be able to create a greater number of artisanal businesses, with a focus of artisanal innovation, which will allow to improve artisanal productivity and be able to continue encouraging the cultural value of artisan pieces, which will give rise to a greater economic and social development of the artisanal field.

Due to the high concentration of artisanal economic units existing in Jalisco, it becomes necessary and interesting to know and analyze the factors and alternatives that artisans have that can allow them to start new businesses and innovate in crafts through administrative strategies that pursue the objectives of each business.

Throughout this research the difference between handicraft and handicrafts was presumed, this difference refers to the object of study of this research, there are several models that measure and determine the intellectual capital in organizations, but the Intellectus model was chosen thanks to its simplicity of understanding and operationalization of variables, the literature revealed that each of the capitals that make up the intellectual capital and in turn help to generate indicators that help the interpretation of results.

Based on the results previously exposed in the chapter on the analysis of results, the conclusions that responded to the objectives and responses of this research can be obtained, as well as the verification of the hypotheses proposed. Recalling that the purpose of this study is to generate contributions that encourage entrepreneurship and innovation in craft economic units.

This research was formulated the general objective of describing the impact that human capital has, that allows to create objectives in the economic unit for the correct management of its resources, through the analysis of a sample of national artisans and Tonaltecas. This with the purpose of to know those factors that allow the artisan businesses to generate entrepreneurship and active innovation within the same businesses, in order to promote a competitive advantage, for the achievement of the general objective it was necessary to know the influence of human capital in the development of craft businesses.

To fulfill the objectives outlined above, it was essential to formulate research questions that would allow identifying and analyzing the critical factors to promote entrepreneurship and artisan innovation, based on the specific objectives the following research question was posed: What is the relationship between human capital and innovation in national craft businesses and Tonaltecas?

Through the analysis of results, it is concluded that: The human capital of artisan businesses is positively related to craft entrepreneurship.It is recalled that this research project sought to show the characteristics that positively influence entrepreneurship and craft innovation, but due to space and time limitations, each of the characteristics of the different capitals that make up the intellectual capital was not considered more in detail.

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Appendix

Reliability statistics

The Cronbach alpha statistic was used, using the SPSS program, using the following formula:

$$\propto = \frac{K}{K-1}\left[1 - \frac{\sum {S_i}^2}{{S_t}^2}\right]$$

Where:

K: It is the number of items

${S_i}^2$: Variances of the items

${S_t}^2$: Variances of the sum of the items

$\propto$: Cronbach's alpha coefficient

Table 1: Reliability statistics, human capital

Reliability statistics

Alfa de Cronbach	N de elements
,835	7

Case processing summary

		N	%
Cases	Valid	73	100,0
	Excluded	0	,0
	Total	73	100,0

a. The elimination by list is based on all the variables of the procedure.

Source: Own elaboration, with data collected from the instrument

1) Chi-square statistics

The chi-square statistic was used, using the SPSS program, using the following formula:

$$x^2 = \sum \frac{(o_i - e_i)^2}{e_i}$$

Where:

o_i: Frequency observed

e_i: Expected frequency

x^2: $\text{Chi} - \text{square statistic}$

Table 2: Summary of case processing chi-square test

	Valids		Lost		Total	
	N	Porcentage	N	Porcentage	N	Porcentage
Human capital * Entrepreneurial capital	73	100.0%	0	0.0%	73	100.0%

Table 3: Table 6 Cross-section table of chi-square test cases

Tabla cruzada Capital humano*Capital emprendimiento

			Capital emprendimiento					Total
			Totalmente en desacuerdo	En desacuerdo	Ni acuerdo ni en desacuerdo	De acuerdo	Totalmente de acuerdo	
Capital humano	Totalmente en desacuerdo	Recuento	0	1	0	0	0	1
		Recuento esperado	0	0.1	0.2	0.5	0.3	1
		% del total	0.00%	1.40%	0.00%	0.00%	0.00%	1.40%
	Ni acuerdo ni en desacuerdo	Recuento	1	0	1	1	0	3
		Recuento esperado	0.1	0.2	0.5	1.4	0.8	3
		% del total	1.40%	0.00%	1.40%	1.40%	0.00%	4.10%
	De acuerdo	Recuento	1	1	8	6	3	19
		Recuento esperado	0.8	1.3	3.4	8.6	4.9	19
		% del total	1.40%	1.40%	11.00%	8.20%	4.10%	26.00%
	Totalmente de acuerdo	Recuento	1	3	4	26	16	50
		Recuento esperado	2.1	3.4	8.9	22.6	13	50
		% del total	1.40%	4.10%	5.50%	35.60%	21.90%	68.50%
Total		Recuento	3	5	13	33	19	73
		Recuento esperado	3	5	13	33	19	73
		% del total	4.10%	6.80%	17.80%	45.20%	26.00%	100.00%

Table 7: Chi-square test

	Valor	gl	Significación asintótica (bilateral)
Chi-square of Pearson	33.787[a]	12	.001
Reassinabless	21.881	12	.039
Linear association by linear	11.488	1	.001
Valid cases	73		

A 16 boxes (80.0%) have expected a count less than 5.

The expected minimum count is .04.

Calculated the value of significance (critical value observed) 0.001 <0.05 rejects the null hypothesis (the variables are independent) and accepts the alternative hypothesis, that is, human capital is significantly related to the capital of entrepreneurship and innovation at a level of 95 Reliability%.

Multiple linear regression

The Stata program, the linear regression command, was used to estimate the sign that would have had a synergy effect on artisanal innovation and the following results were obtained.

$$\begin{aligned} &Artisanal\ innovation \\ &\qquad = 0.13hum01 + 0.01hum02 + 0.05hum03 + 0.05hum04 + 0.03hum05 \\ &\qquad + 0.09hum06 + 0.019hum\ 019 \end{aligned}$$

Where:

Hum01: Feeling of belonging and commitment

Hum02: Self-motivation

Hum03: Satisfaction

Hum04: Flexibility and adaptability

Hum05: Personal development

Hum06: Collaboration (teamwork)

Hum07: Communication (knowledge exchange)

Table 8: Linear regression of human capital with respect to artisanal innovation

```
Linear regression                               Number of obs     =         73
                                                F(7, 65)          =       2.83
                                                Prob > F          =     0.0122
                                                R-squared         =     0.1893
                                                Root MSE          =     .67643
```

ino	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
hum01	.1359563	.0897351	1.52	0.135	-.0432571	.3151697
hum02	.0102293	.1093706	0.09	0.926	-.2081988	.2286575
hum03	.0553238	.0950715	0.58	0.563	-.134547	.2451946
hum04	.0537677	.0440217	1.22	0.226	-.0341498	.1416851
hum05	.0332637	.0614018	0.54	0.590	-.0893642	.1558917
hum06	.0913945	.0891726	1.02	0.309	-.0866954	.2694844
hum07	.019307	.0614967	0.31	0.755	-.1035104	.1421244
_cons	2.120109	.4538202	4.67	0.000	1.213767	3.02645